MICROWAVE SPECTROSCOPY INFORMATION LETTER

VOL. LXIV

July 17, 2021

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Interesting and Informative Websites Maintained by Our Colleagues and Funding Acknowledgement

1. The J. P. L. *Submillimeter, Millimeter, and Microwave Spectral Line Catalog* is accessible via anonymous ftp at spec.jpl.nasa.gov or via our home page at http://spec.jpl.nasa.gov
   Jet Propulsion Laboratory, **Lab 9.**

2. A database "Programs for ROtational SPEctroscopy (PROSPE)" is available at:
   http://info.ifpan.edu.pl/~kisiel/prospe.htm
   A new database on "History of Rotational Spectroscopy" is being constructed at:
   http://info.ifpan.edu.pl/~kisiel/rothist/rothist.html
   A subpage on this Newsletter is at:
   http://info.ifpan.edu.pl/~kisiel/rothist/newsletter.html
   This database depends critically on contributions, which are solicited and accepted at (preferably):
   prospe@ifpan.edu.pl, **Lab 22**

3. Recommended Rest Frequency Table. F. J. Lovas, *J. Phys. Chem. Ref. Data*, 1-181 (2004). See:
   http://physics.nist.gov/PhysRefData/micro/html/contents.html
   For diatomics, triatomics, and hydrocarbons, see:
   http://physics.nist.gov/PhysRefData/MolSpec/index.html
   A graphic, interactive fitting program, jb95, is available at
   http://physics.nist.gov/Divisions/Div844/facilities/uvs/jb95userguide.htm
   An application and description of the program is found in D. F. Plusquellic et al., *J. Chem. Phys., 115* (**2001**) 3057.
   National Institute of Standards and Technology, **Lab 32**.

4. A bibliography of high resolution studies of weakly bound complexes is maintained on the Web at
   http://www.Wesleyan.edu/chem/faculty/novick/vdw.html
   Wesleyan University, **Lab 36.**

5. The **C**ologne **D**atabase for **M**olecular **S**pectroscopy is available online at
   http://www.astro.uni-koeln.de/cdms/
   I. Physikalisches Institut, Köln, **Lab 34.**

6. The Hannover FTMW spectrometer control & analysis software is available at
   http://www.pci.uni-hannover.de/~lgpca/spectroscopy/ftmw
   Institut für Physikalische Chemie, Hannover, **Lab 13.**

Due to the COVID-19 pandemic, this edition has been delayed from its usual dissemination date and was not printed.

MICROWAVE SPECTROSCOPY NEWSLETTER LXIV
List of Contributors / Table of Contents

In Memoriam After Index

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(Written by Rebecca Peebles and Michael Tubergen with contributions from Manish Mehta)

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(Written by Jean Demaison with help from Heinz's daughter, Christine)

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_4O_2$	Vinyl Alcohol		mmw- wave spectrum
C_2H_3NO	Propynal		J.Mol.Spectrosc. 2020
$C_2H_5NO_2$	Glycolamide [h]		A&A 2020
$C_2H_5NO_2$	Acetohydroxamic		ms. In preparation
$C_2H_6N_2O$	Glycinamide [b,d,h]		mmw- wave spectrum
C_3H_3NO	Propiolamide [d]		A&A 2021
$C_3H_3NO_2$	Cyanoacetic acid		ApJ 2021
$C_3H_4O_4$	Malonic Acid		LA-CPFT spectrum
$C_3H_4N_2O$	Cyanoacetamide		A&A 2020
C_3H_5NO	Lactonitrile		mmw- wave spectrum
$C_3H_6O_2$	Lactaldehyde		ms. in preparation
$C_3H_6N_2O_2$	Cycloserine[e,f]		JPCA 2021
$C_3H_7N_3O_2$	Glycociamine		LA-CPFT/LA-MBFTMW spectrum
$C_4H_4O_6$	Malic acid		ms. In preparation
$C_4H_6O_6$	Tartaric Acid		Angew.Chem. 2021
$C_4H_7N_3O$	Creatinine[e,f]		ChemPlusChem 2021

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_7N_3O_3$	Cytosine-water		ms. in preparation
C_4H_8O	Butyraldehyde		mmw- wave spectrum
C_4H_8O	Isobutyraldehyde		mmw- wave spectrum
$C_4H_9NO_2S$	Homocysteine		ms. in preparation
$C_4H_9NO_3$	Homoserine		LA-CPFT spectrum
$C_4H_{10}O_4$	Erythritol		LA-CPFT spectrum
$C_5H_{10}O_5$	Arabinose		ms. in preparation
$C_5H_{10}O_5$	Lixose		ms. in preparation
$C_5H_{10}N_2O_2S$	Ac-Cys-NH_2 [g]		PCCP 2020
$C_5H_{10}N_2O_3$	Alanine-Glycine		LA-CPFT/LA-MBFTMW spectrum
$C_5H_{11}NO$	Norvaline		LA-CPFT spectrum
$C_5H_{11}NO_2$	Isovaline		ChemPhysChem 2020
$C_5H_{11}NO_2S$	Methionine		ms. in preparation
$C_5H_{12}O_5$	Arabitol		LA-CPFT spectrum
$C_5H_{12}O_5$	Xylitol		ms. In preparation
$C_6H_{12}O_6$	Mannose		ms. in preparation
$C_6H_{12}O_6$	Talose		LA-CPFT spectrum
$C_6H_{12}O_6$	Allose		LA-CPFT spectrum
$C_6H_{12}O_6$	Manitol		LA-CPFT spectrum
$C_6H_{12}O_6$	Inositol		LA-CPFT spectrum
$C_6H_{12}N_2O_3$	Ala-Ala		PCCP 2020
$C_6H_{13}N_3O_4$	Gly-Gly-Gly		LA-CPFT/LA-MBFTMW spectrum

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_{13}NO_3S$	Cyclamic Acid		LA-CPFT spectrum
$C_7H_6O_5$	Gallic Acid		LA-CPFT spectrum
$C_7H_{12}NSO_3$	Prolylglycine		LA-CPFT spectrum
$C_8H_8O_3$	Mandelic acid		LA-CPFT spectrum
$C_8H_8O_4$	Dopac		LA-CPFT spectrum
$C_8H_9NO_3$	Pyridoxal (Vit. B6)		ms. In preparation
$C_8H_{11}NO_3$	Pyridoxine (Vit. B6)		ms. In preparation
$C_8H_{11}NO_3$	Noradrenaline		ms. In preparation
$C_8H_{15}NO_6$	N-Acetyl Glucosamine		ms. In preparation
$C_9H_8O_4$	Caffeic Acid		LA-CPFT spectrum
$C_9H_{11}NO_4$	Dopa		ms. In preparation
$C_9H_{12}N_2O_2$	Dulcine		ms. In preparation
$C_9H_{12}N_2O_5$	Deoxyuridine		ms. In preparation
$C_9H_{13}NO_3$	Adrenaline		ms. In preparation
$C_9H_{15}NO$	Pellirartine		LA-CPFT spectrum
$C_{11}H_{14}N_2O$	Cytisine		LA-CPFT spectrum
$C_{12}H_{16}N_2$	N,N-Dimethyltryptamine		ms. In preparation
$C_{12}H_{22}O_{11}$	Sucrose		LA-CPFT spectrum
$C_{12}H_{22}O_{11}$	Lactose		LA-CPFT spectrum
$C_{15}H_{12}O$	Phenyl Barbaralone [c]		LA-CPFT spectrum
$C_{18}H_{20}O$	Aryl Barbaralone [c]		LA-CPFT spectrum
$C_{19}H_{28}O_2$	Testosterone		submitted

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{21}H_{30}O_2$	Progesterone		LA-CPFT spectrum

In collaboration with:

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[c] Echevarren. ICTQ. Tarragona
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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_5FO	Methylfluoride-H_2O	Sharon Priya Gnanasekar Manuel Goubet, Robert Georges	Assigned transitions for hydrogen bond structure. Carbon bonded structure?
CH_3ArF	Argon-methylfluoride	Sharon Priya Gnanasekar Manuel Goubet, Robert Georges	Assigned transitions for a T-shaped structure. Several unassigned lines C---Ar and F—Ar structures?
$C_3H_3NO_2$	Acetonitrile-CO_2	Sharon Priya Gnanasekar	Two structures, T-shaped and Stacked have been assigned For several isotopomers. Manuscript in preparation .
H_4ArO_2	Ar-$(H_2O)_2$	Arijit Das	A1 and B1 states of the trimer assigned and fitted. Earlier paper published in 2002 had assigned these states for Ar-. (D2O)2. Manuscript in preparation.
$C_3H_5O_2$	propargyl alcohol-H_2O	Sharon Priya Gnanasekar	Spectrum assigned for Several isotopomers. Manuscript in revision for J. Phys. Chem. A.
$H_6O_2S_2$	(H_2O)-$(H_2S)_2$	Arijit Das, Eva, Nick Walker	Spectrum assigned for Several isotopologes.
$C_9H_{10}O$	phenylacetylene-CH_3OH	Surabhi Gupta, Kabir Kumbhar	Several lines for the parent observed.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_8N_2$	2-Picolylamine	R. Bird	Experiments Completed Assignments In Progress
$C_6H_8N_2$	3-Picolylamine	R. Bird	Experiments Completed Assignments In Progress
$C_6H_8N_2$	4-Picolylamine	R. Bird	Experiments Completed Assignments In Progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_6NO	N-ethylformamide	C. Bermúdez*, C. Cabezas and J. Cernicharo	Manuscript in Prep.
$C_4H_2N_2$	Maleonitrile	C. Bermúdez*, C. Cabezas and J. Cernicharo	Manuscript in Prep.
CH_4N_2	Formamidine	C. Cabezas, C. Bermúdez* and J. Cernicharo	Experiments in progress
C_5H_6	Ethynylcyclopropane	C. Cabezas and J. Cernicharo	Experiments in progress

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Formula	Name of Compound	Name of Investigator	Present Stage of Progress
C_5H_3ClFN	2-chloro-3-fluoropyridine	Arnold, Chewning, Brown	spectrum assigned
C_5H_3ClFN	2-chloro-6-fluoropyridine	Arnold, Chewning, Brown	spectrum assigned
$C_6H_4FNO_2$	2-fluoropyridine – CO_2 complex	Brown, Hall, McCarthy(Harvard)	spectrum assigned
$C_6H_4FNO_2$	3-fluoropyridine – CO_2 complex	Brown, Parks, McCarthy(Harvard)	spectrum assigned
C_5H_4IN	3-iodopyridine	Gaster, Hall, Brown	spectrum assigned
$C_7H_4F_2O$	2,3-difluorobenzaldehyde	Gaster, Parks, Brown	1 conformer assigned
$C_7H_4F_2O$	2,6-difluorobenzaldehyde	Gaster, Parks, Brown	spectrum assigned
$C_7H_4F_2O$	3,5-difluorobenzaldehyde	Gaster, Parks, Yarbroough, Brown	1 conformer assigned
$C_6H_3F_2NO_2$	2,3-difluoropyridine – CO_2 complex	Gaster, Funderburk, Brown	spectrum assigned

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FORMULA	NAME OF COMPOUND	INVESTIGATORS	PRESENT STAGE OF PROGRESS
C_3HN	cyanoacetylene	L. Bizzocchi[1], M. Melosso[1], F. Tamassia[2], O. Pirali[3], M.A.-Martin Drumel[3]	2nd resonance IR/submm-wave ongoing
CD_2S	thioformaldehyde-d_2	V. Lattanzi et al.	mm-wave and submm-wave measurements completed
CHS_2^+	protonated carbon disulfide	V. Lattanzi, M.E. Palumbo[7], M. McCarthy[6], et al.	Measurements ongoing
$C_2H_4N_2$	*N*-cyano-methylamine	D. Alberton, L. Bizzocchi[1] J.-C. Guillemin[8], M. Carvajal-Zaera[9]	Measurements ongoing
CHN	Hydrogen isocyanide	L. Bizzocchi[1], S. Bailleux[11], et al.	THz measurements ongoing
$C_3H_4N_2$ (H_2N-CH=CH-CºN)	3-Amino-2-propenenitrile	D. Alberton, V. Lattanzi, C. Endres, et al.	Measurements ongoing
$DH^{15}N$	^{15}N-amidogen	L. Bizzocchi[1], M. Melosso[1], L. Dore[1], O. Pirali[3], M.A.-Martin Drumel[3], et al.	Measurements ongoing
C_2H_4N	Allyl-imine	D. Alberton, L. Bizzocchi[1], A. Pietropolli-Charmet[5], et al.	E,Z isomers measurements completed
$CH^{18}O^+$, $CH^{17}O^+$	^{17,18}O-carbonylium	L. Bizzocchi[1], et al.	THz measurements completed manuscript in preparation
ArH+	Argonium	L. Bizzocchi[1], M. Melosso[1], et al.	Ar broadening THz measurements completed
C_4H_5N	Cyclopropyl cyanide	L. Bizzocchi[1], M. Melosso[1], A. Pietropolli-Charmet[5],et al.	FIR spectrum analysis ongoing
$C_3H_4N_2$	2-cyano-azyridine	D. Alberton, L. Bizzocchi[1], J.-C. Guillemin[8] et al.	Measurements ongoing
C_3H_5N	Ethyl cyanide	C. P. Endres, S. Thorwirth[4], M.-A. Martin-Drumel[3], L. Bonah[4]	JMS **375**, 111392 (2021), ongoing
$C_3H_4N_2$	Vinyl acetylene	C. P. Endres, S. Thorwirth[4]	JMS accepted (FIR, v_{13}=1, v_{18}=1), ongoing

FORMULA	NAME OF COMPOUND	INVESTIGATORS	PRESENT STAGE OF PROGRESS
C_2H_6O	Dimethyl ether	C. P. Endres, V. Ilyushin[12], et al.	$\nu_{t1}+\nu_{t2}=1$ ms. near submission; higher–ν ongoing

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_9ClF_3NO	triflurochloromethane···trimethylammonia	Caminati's group[1] Cocinero's group	Analysis in progress
$C_2Cl_4F_2$	CFC 112a	Cocinero's group Kisiel's group[2]	1 conformer assigned
$C_5H_{10}F_{10}$	$(Difluoromethane)_5$	Cocinero's group Melandri's group[1] Pate's group[3]	1 complex assigned *Submitted*
$C_6H_{12}F_{12}$	$(Difluoromethane)_6$	Cocinero's group Melandri's group[1] Pate's group[3]	2 complexes assigned *Submitted*
$C_7H_{14}F_{14}$	$(Difluoromethane)_7$	Cocinero's group Melandri's group[1] Pate's group[3]	1 complex assigned *Submitted*
C_2H_6OS	Dimethyl sulfoxide (DMSO)	Cocinero's group	Analysis in progress
$C_2H_8O_2S$	Dimethyl sulfoxide (DMSO)···(Water)	Cocinero's group	Analysis in progress
$C_4H_6N_2O_2$	Pyrazole···Formic Acid	Cocinero's group Alkorta´s group[4]	1 conformer – tunneling observed
$C_3H_4Cl_2F_2O$	Methoxyflurane	Lesarri's group[5] Cocinero's group Grabow's group[6]	Analysis in progress
$C_4H_8O_4$	Erythrulose	A. Insausti E. R. Alonso B. Tercero[7] J. I. Santos[8] C. Calabrese, N. Vogt[9] F. Corzana[10] J. Demaison[9] J. Cernicharo[11] E. J. Cocinero	***J. Phys. Chem. Lett.***, 12, 1352–1359 (2021) https://doi.org/10.1021/acs.jpclett.0c03050 Journal cover
$C_6H_5ClF_3N$	Pyridine···chlorotrifluoromethane	Q. Gou[12] M. Vallejo-López L. Spada[1] A. Staffolani[1] A. Lesarri[5] E. J. Cocinero W. Caminati[1]	***J. Mol. Spectrosc.***, 371, 111323 (2020) https://doi.org/10.1016/j.jms.2020.111323

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{11}NO$	Prolinol	Sanz's group[13] Cocinero's group	2 conformers -^{13}Cs -^{18}O assigned
$C_5H_{13}NO_2$	Prolinol···water	Sanz's group[13] Cocinero's group	4 conformers ^{13}Cs - assigned
$C_5H_{15}NO_3$	Prolinol···(water)$_2$	Sanz's group[13] Cocinero's group	2 conformers assigned
$C_5H_{17}NO_4$	Prolinol···(water)$_3$	Sanz's group[13] Cocinero's group	1 conformer assigned
$C_5H_{19}NO_5$	Prolinol···(water)$_4$	Sanz's group[13] Cocinero's group	1 conformer assigned
$C_{10}H_{22}N_2O_2$	(Prolinol)$_2$	Cocinero's group Sanz's group[13]	Homodimer RR/SS assigned Heterodimer RS/SR assigned *Manuscript in preparation*
$C_6H_8O_6$	Glucoronolactone	Cocinero's group	2 conformers *Manuscript in preparation*
$C_6H_{10}O_6$	Gluconolactone	Cocinero's group	2 conformers *Manuscript in preparation*
$C_6H_{10}O_7$	Glucoronic acid	Cocinero's group	2 conformers *Manuscript in preparation*
$C_6H_{10}O_7$	Galacturonic acid	Cocinero's group	2 conformers *Manuscript in preparation*
$C_6H_{12}O$	Oxacycloheptene	Lesarri's group[5] Grabow's group[6] Cocinero's group	Analysis in progress
$C_6H_{12}O_5$	Fucose	Cocinero's group	1 conformer – ^{13}Cs assigned
$C_6H_{12}O_5$	Rhamnose	Cocinero's group	1 conformer – ^{13}Cs assigned
$C_6H_{12}O_4$	Methyl-α-2-deoxyribofuranoside	C. Calabrese I. Uriarte A. Insausti M. Vallejo-López F. J. Basterretxea S. A. Cochrane[14] B. G. Davis[14] F. Corzana[10] E. J. Cocinero	***ACS Cent. Sci.***, 6, 293-303, (2020) https://doi.org/10.1021/acscentsci.9b01277 Journal cover '*Paper of the month*' by SBE
$C_6H_{12}O_4$	Methyl-β-2-deoxyribofuranoside	C. Calabrese I. Uriarte A. Insausti M. Vallejo-López F. J. Basterretxea S. A. Cochrane[14] B. G. Davis[14] F. Corzana[10] E. J. Cocinero	***ACS Cent. Sci.***, 6, 293-303, (2020) https://doi.org/10.1021/acscentsci.9b01277 Journal cover '*Paper of the month*' by SBE
$C_6H_{12}O_4$	Methyl-α-2-deoxyribopyranoside	C. Calabrese I. Uriarte A. Insausti M. Vallejo-López F. J. Basterretxea S. A. Cochrane[14] B. G. Davis[14] F. Corzana[10] E. J. Cocinero	***ACS Cent. Sci.***, 6, 293-303, (2020) https://doi.org/10.1021/acscentsci.9b01277 Journal cover '*Paper of the month*' by SBE

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_{12}O_4$	Methyl-β-2-deoxyribopyranoside	C. Calabrese I. Uriarte A. Insausti M. Vallejo-López F. J. Basterretxea S. A. Cochrane[14] B. G. Davis[14] F. Corzana[10] E. J. Cocinero	***ACS Cent. Sci.***, 6, 293-303, (2020) https://doi.org/10.1021/acscentsci.9b01277 Journal cover '*Paper of the month*' by SBE
$C_6H_{11}FO_5$	2-fluoro-2-deoxy-glucose	Cocinero's group	2 conformers assigned *Manuscript in preparation*
$C_6H_{11}FO_5$	2-fluoro-2-deoxy-mannose	Cocinero's group	2 conformers assigned *Manuscript in preparation*
$C_6H_{11}FO_5$	2-fluoro-2-deoxy-galactose	Cocinero's group	1 conformer assigned *Manuscript in preparation*
$C_6H_{12}O_5$	2-deoxyglucose	Cocinero's group	3 conformers assigned *Manuscript in preparation*
$C_6H_{12}O_5$	2-deoxygalactose	Cocinero's group	2 conformers – ^{13}Cs assigned *Manuscript in preparation*
$C_7H_{17}NO_5$	*N*-Methyl-glucamine	Cocinero's group	1 conformed assigned
$C_8H_8O_2$	Methyl benzoate	Cocinero's group	1 conformer -^{13}Cs -^{18}Os assigned
$C_8H_{10}O_3$	Methyl benzoate···water	Cocinero's group	2 conformer -^{13}Cs - assigned
$C_8H_{12}O_4$	Methyl benzoate···(water)$_2$	Cocinero's group	2 conformers assigned
$C_8H_{14}O_5$	Methyl benzoate···(water)$_3$	Cocinero's group	2 conformers assigned
$C_8H_{16}O_6$	Methyl benzoate···(water)$_4$	Cocinero's group	2 conformers assigned
$C_8H_{16}O_6$	Methyl benzoate···(water)$_5$	Cocinero's group	2 conformers assigned
$C_{16}H_{16}O_4$	(Methyl benzoate)$_2$	Cocinero's group	1 complex assigned
$C_{10}H_{10}O_2$	Methyl cinnamate	Cocinero's group Lesarri's group[5]	2 conformers assigned
$C_{10}H_{10}O_4$	Dimethyl phthalate	Cocinero's group	1 conformer -^{13}Cs assigned
$C_{10}H_{12}O_3$	Coniferyl alcohol	Cocinero's group Lesarri's group[5]	Analysis in progress
$C_{11}H_{15}NO_2$	Butamben	A. Insausti, C. Calabrese, M. Parra, I. Usabiaga, M. Vallejo-López P. Écija, F. J. Basterretxea, J.-U. Grabow[6] A. Lesarri[5] W. Caminati,[1] E. J. Cocinero	***Chem. Comm.***, 56, 6094-6097 (2020). https://doi.org/10.1039/D0CC00760A
$C_{11}H_{15}NO_2$	Isobutamben	A. Insausti, C. Calabrese, M. Parra, I. Usabiaga, M. Vallejo-López P. Écija, F. J. Basterretxea, J.-U. Grabow[6] A. Lesarri[5] W. Caminati,[1] E. J. Cocinero	***Chem. Comm.***, 56, 6094-6097 (2020). https://doi.org/10.1039/D0CC00760A
$C_{12}H_{22}O_2$	Oxacyclotridecan-2-one	Cocinero's group	22 conformers -^{13}Cs assigned
$C_{15}H_{12}O$	Chalcone	Cocinero's group	1 conformer assigned
$C_{15}H_{12}O_2$	Dibenzoylmethane	Cocinero's group Caminati's group[1]	1 conformer assigned
$C_{16}H_{30}O_2$	16-Hexadecanolide	Cocinero's group	16 conformers assigned

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FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
O_3U	Uranium (VI) oxide	B. E. Long$^{\perp}$	Spectrum observed.
O_2Th	Thorium (IV) oxide	B. E. Long$^{\perp}$	Spectrum observed.
C_4HF_9	2H-Nonafluorobutane		Parent and minor isotopologues observed and assigned
$C_5Cl_2F_6$	1,2-dichlorohexafluorocyclopentene-1		Spectrum assigned
$C_6Cl_2F_8$	1,2-dichlorooctafluorocyclohexene-1		Spectrum assigned
C_3ClF_5O	Chloropentafluoro acetone	G. S. Grubbs II$^{\bullet}$ W. C. Bailey$^{\Delta}$	Manuscript in preparation
$C_3Cl_2F_4O$	1,3-Dichlorotetrafluoro acetone		Manuscript in preparation
$C_3H_2ClF_3O$	1,1,1-Trifluoro-3-chloroacetone		Manuscript in preparation
$C_3H_4F_2O$	1,1-Difluoroacetone	P. Groner$^{=}$ L. Margulès, R. Motiyenko$^{\$}$	CP-FTMW Spectrum Assigned mmW spectrum recorded.

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
C_3H_5ClO	Chloroacetone	B. E. Long$^{\perp}$	Spectrum assigned
C_3F_5N	Perfluoropropionitrile	B. E. long$^{\perp}$	Spectrum Assigned
BaS	Barium Monosulfide	G. S. Grubbs II$^{\bullet}$	Hyperfine structure, J = 1 - 0, 2 - 1 in high vibrational states.
C_3HF_6N	Hexafluoroacetone imine	G. S. Grubbs II$^{\bullet}$, D. Obenchain$^{\perp +}$, D. Frohman, S. E. Novick$^{\perp}$, W. C. Pringle$^{\perp}$	Spectrum assigned
C_4F_9I	Perfluoroiodobutane	G. S. Grubbs II$^{\bullet}$, R. Bohn$^{\blacklozenge}$	Manuscript in preparation
$C_4H_6F_3I$	3-Iodo-1,1,1-trifluorobutane	W. C. Bailey$^{\Delta}$	CP-FTMW spectrum assigned
C_3HF_7O	1,2,2,2-Tetrafluoroethyl trifluoromethyl ether	A. Turk	Spectrum assigned
$C_5H_3F_7O_2$	2,2,3,3-Tetrafluoropropyl trifluoroacetate		Spectrum assigned
$C_4H_7ClF_2O$	1-chloro-1,1-difluoro-2-methyl-2-propanol		Spectrum assigned
$C_3H_4F_3I$	1,1,1-trifluoro-3-iodopropane	W. C. Bailey$^{\Delta}$	Manuscript in preparation
$C_3H_2F_5I$	1,1,1,2,2-pentafluoro-3-iodopropane	W. C. Bailey$^{\Delta}$	Manuscript in preparation
$C_{10}F_{19}N$	Perfluorodecanonitrile	A. J. Minei$^{\square}$	Spectrum observed
$C_3H_6F_3N$	1,1,1-Trifluoro-3-azapent-3-ene	C. T. Dewberry*	Spectrum assigned

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_5H_{11}F$	1-Fluoropentane	D. Obenchain[⊥+]	Spectrum Assigned
$C_6H_{13}F$	1-Fluorohexane	D. Obenchain[⊥+]	Spectrum Assigned
$C_7H_{15}F$	1-Fluoroheptane	D. Obenchain[⊥+]	Spectrum Assigned
$C_8H_{17}F$	1-Fluorooctane	D. Obenchain[⊥+], W. Orellana[⊥]	Spectrum Assigned
$C_5H_{12}S$	Butyl methyl thioether	J. Ogulnick, T. Holmes	Spectrum Assigned
$C_6H_{14}S$	Pentyl methyl thioether	J. Ogulnick, T. Holmes	Spectrum Assigned

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Formula	Name of Compound	Name of Investigator(s)	Present Stage of Progress
CCl_2O	Carbonyl chloride (phosgene)	Drouin[1]	Millimeter wave spectra analyzed, spectra for mixed isotopomer
CDH_3O	Deuterated Methanol	Pearson[1], Yu[1], & Drouin[1]	Ext. J,K analysis in progress
CHN	Hydrogen cyanide	Pearson[1], Yu[1], & Cernicharo[2]	Vib. Excited rotational data recorded, analyzed
CH_3NO_3	Methyl nitrate	Drouin[1], & Zhang[1]	Submm data acquired, assigned
C_3H_9NO	Alaninol	Crawford[1,3] & Yu[1]	75-110 GHz mm data recorded
$C_3H_6O_2$	Glycidol	Liu[1,4] & Yu[1]	75-110 GHz mm data recorded
CH_4	Methane	Drouin[1]	2.5-2.7 THz spectra for ^{12}C, ^{13}C
C_5H_8	Isoprene	Drouin[1], Kisiel[5], Porterfield[6], & Martin[7]	100-300 GHz spectra collected, analysis in progress
ClH	Hydrogen Chloride	Gupta[1,8], Drouin[1], & Pearson[1]	THz spectra to v=8
ClO	Chlorine Monoxide	Cohen[1], Drouin[1], & Duffy[9]	Rotational data to v=8, analysis complete
ClH_2^+	Chloronium (H_2Cl^+)	Gupta[1,8], Drouin[1], & Pearson[1]	THz spectra recorded
CO_2	Carbon Dioxide (^{18}OCO)	Drouin[1], & Elliot[1,10]	Isotopic measurements 0.5-0.6 THz
C_2DH	Deuterated Acetylene (HCCD)	Yu[1], Drouin[1], & Walters[11]	THz spectra measured, assigned
C_3H_5N	Propionitrile (ethyl cyanide)	Pearson[1], Daly[1,12], Alonzo[13], & Yu[1]	Excited vibrational analyses in progress
HNO_2	Nitrous Acid ($H^{15}NO_2$)	Drouin[1] & Miller[1]	Submillimeter spectra recorded, assigned
H_2O	Water (^{17}O & ^{18}O)	Yu[1], Drouin[1], Pearson[1], & Walters[11]	Measurements through 2.6 THz for ^{18}O and 2.7THz for ^{17}O
H_2N	Amidogen	Müller[14] & Drouin[1]	Gs analysis complete, excited vibrational state analysis in progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_4O_2	water dimer	W. Caminati et al.	High J, high K transitions observed
$CClF_3Kr$	chlorotrifluoromethane krypton	L. Evangelisti	Asymmetric top spectrum
CH_2ClFNe	chlorofluoromethane neon	P. Ottaviani et al. ISMN	Spectrum observed, dynamics
CH_2F_2Ne	difluoromethane neon	S. Melandri et al.	Spectrum assigned, dynamics
CH_3F_4N	tetrafluoromethane ammonia	L. Evangelisti et al.	Symmetric top, tunneling
CH_4F_3N	trifluoromethane ammonia	B.M. Giuliano et al.	mmw measurements
CH_6O_2	methanol water	S. Melandri et al.	High J, high K transitions observed
$C_2H_8O_2S$	Dimethylsulfoxide water	D. Lv et al.	Spectrum assigned
C_2F_4O	tetrafluoromethane carbon monoxide	L. Evangelisti et al.	Spectrum assigned, symmetric top
C_2F_3KrN	trifluoroacetonitrile krypton	L. Evangelisti et al.	Symmetric top
$C_2H_2F_4O$	tetrafluoroethene water	Q. Gou et al. CQU	Spectrum recorded
$C_2H_3Cl_2F_3$	chloromethane chlorotrifluoromethane	W. Li et al.	Spectrum assigned
$C_2H_3F_3O$	trifluoromethane formaldehyde	Q. Gou et al. UVA, UPV, CQU	1 conformer, 4 states

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_4NeO	oxirane neon	S. Melandri et al. PhLAM	Spectrum assigned, dynamics
$C_2H_6Cl_2Ge$	dichlorodimethylgermane	P. Ottaviani et al. PCI	Internal rotation, quadrupole
$C_2H_6Cl_2Sn$	dichlorodimethylstannane	P. Ottaviani et al. PCI	Spectrum assigned
C_2H_7ClO	dimethylether hydrogen chloride	W. Caminati et al. UVA, SU	Hyperfine structure
$C_2H_7NO_3$	glycolamide water	A. Maris et al.	Spectrum assigned
C_2H_7NS	Cysteamine	W. Song et al.	MS in preparation
$C_2H_8N_2O_2$	glycolamide ammonia	A. Maris et al.	Spectrum assigned
$C_2H_8O_2$	dimethylether water	W. Caminati et al. SU	Manuscript in preparation
$C_2H_8O_2$	Methanol Dimer	S. Melandri et al.	High J, high K transitions observed
C_3ClF_7	tetrafluoroethene chlorotrifluoromethane	G. Feng et al. CQU	Spectrum recorded
C_3F_3NO	trifluoroacetonitrile carbon monoxide	L. Evangelisti et al.	Symmetric top
$C_3H_4O_2$	acrylic acid	C. Calabrese et al. UBO	Submm-wave spectrum, isotopologues, excited states
$C_3H_4F_4O_2$	tetrafluoromethane ethylene oxide	G. Feng et al. CQU	Manuscript submitted
C_3H_5N	Propargylamine	M. Melosso et al. UBO	Isotopologues assigned
$C_3H_5NO_2$	1,3-oxazolidin-2-one	A. Maris et al.	Spectrum assigned, tunnelling
$C_3H_6N_2O$	ethylene urea	A. Vigorito et al.	Spectrum assigned, tunneling
$C_3H_6F_4O$	Dimethylether Tetrafluoromethane	L. Evangelisti et al. ISMN	1 conformer, 4 states
$C_3H_6O_2$	1,3-dioxolane	A. Maris et al. UBO	Splittings in various states
$C_3H_6O_3$	acrylic acid water	A. Maris et al. ISMN	2 conformers, 9 isotopologues
$C_3H_7F_3O$	dimethylether trifluoromethane	W. Caminati et al. EIU	H-bond, dynamics

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_7NO_2$	Acrylamide - water	A. Maris et al. - UVA	Spectrum assigned
$C_3H_8O_2S$	1-Thioglycerol	W. Song et al.	Spectrum assigned
$C_3H_7NO_3$	1,3-oxazolidin-2-one Water	A. Maris et al.	Spectrum assigned, tunnelling
$C_3H_8N_2O$	N,N'-dimethylurea	A. Maris et al.	Spectrum recorded
$C_3H_8N_2O_2$	Ethyleneurea Water	A. Maris et al.	Spectrum assigned
$C_3H_{10}O_2S$	Dimethylsulfoxide methanol	D. Lv et al.	Spectrum assigned
$C_4H_4O_4$	acrylic acid carbon dioxide	A. Maris	MS in preparation
$C_4H_4F_4O_4$	*alpha*, *alpha*-difluoroacetic acid dimer	Q. Gou et al. CQU	4 states, proton tunneling
$C_4H_6O_4$	*beta*-propiolactone formic acid	L. Evangelisti et al. UVA	Spectrum assigned
$C_4H_6F_4O$	dimethylether tetrafluoroethene	L. Evangelisti et al.	Spectrum recorded
C_4H_7NO	2-pyrrolidinone	A. Maris et al.	Spectrum assigned, ND species
C_4H_7NO	metacrylamide	A. Maris et al.	Spectrum assigned, MS in prep.
$C_4H_7NO_2$	3-methyl-1,3-oxazolidin-2-one	A. Maris et al.	Spectrum assigned, tunnelling, V_3
C_4H_8O	1-methylcyclopropanol	W. Li et al.	Spectrum assigned, tunneling
$C_4H_8O_2$	isopropylformate	L. Spada et al. ISMN	Spectrum assigned
$C_4H_8O_2$	Acroleine - methanol	D. Lv et al.	Spectrum assigned
$C_4H_9NO_2$	2-pyrrolidinone Water	A. Maris et al.	Spectrum assigned, ND species
$C_4H_{12}O_2S$	Dimethylsulfoxide ethanol	D. Lv et al.	Spectrum assigned
$C_4H_{12}O_4$	Ethylene glycol dimer	Usabiaga et al. UVA	Spectrum assigned
$C_6H_{18}O_6$	Ethylene glycol trimer	Usabiaga et al. UVA	Spectrum assigned
C_4D_8O	tetrahydrofuran-d_8	A. Maris et al. UVA, RM	Pseudorotation splittings

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_9ClF_3N$	chlorotrifluoromethane trimethylamine	L. Evangelisti et al. UPV	Halogen bond
$C_4H_{10}N_2O_4$	Nitroethane dimer	W. Li et al.	Spectrum recorded
$C_4H_{10}O_3$	trimethoxymethane	G. Feng et al. LISA	3 conformers assigned
$C_4H_{10}S_2$	1,4-butanedithiol	A. Vigorito et al.	4 conformers assigned
$C_5H_3F_4NO$	2,3,4,6-tetrafluoropyridine Water	C. Calabrese et al.	Spectrum assigned, MS in prep.
$C_5H_4F_3NO$	2,4,6-trifluoropyridine Water	C. Calabrese et al.	Spectrum assigned, MS in prep.
$C_5H_5F_2NO$	3,5-difluoropyridine Water	C. Calabrese et al.	Spectrum assigned, MS in prep.
$C_5H_5F_2NO$	2,6-difluoropyridine Water	C. Calabrese et al.	Spectrum assigned, MS in prep.
$C_5H_8O_2$	acetylacetone	W. Caminati et al. PCI, KU	Spectrum observed
$C_5H_{10}O_2$	Acrolein - ethanol	D. Lv et al.	Spectrum assigned
$C_5H_{10}O_3$	1-methylcyclopropanol formic acid (and deuterated)	W. Li et al.	Spectrum assigned
$C_5H_{12}O$	2-methyl-2-butanol	L. Spada et al. ISMN	5 conformers assigned
C_6F_5NO	Pentafluoropyridine CO	S. Melandri et al.	Spectrum assigned
$C_6H_3F_6N$	Pentafluoropyridine fluoromethane	S. Melandri et al.	Spectrum assigned
$C_6H_5ClF_3N$	pyridine chlorotrifluoromethane	Q. Gou et al. CQU	Halogen bond
$C_6H_7NO_2S$	benzenesulfonamide	S. Melandri et al. KCL	Spectrum assigned, ND species
$C_6H_8N_2O_2S$	sulfanilamide	A. Vigorito et al. KCL	Spectrum assigned
C_6H_9NO	pyridine methanol	L. Evangelisti et al.	Spectrum assigned
$C_6H_{10}N_2$	propargylamine dimer	L. Spada et al. UBO	Spectrum assigned
$C_6H_{10}O$	*Trans*-2-Hexen-1-al	L. Evangelisti et al. UVA	Spectrum assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_{12}F_3N$	*N*-methylpyrrolidine trifluoromethane	L. Evangelisti et al.	H-bond, internal rotation
$C_6H_{12}O$	*cyclo*-hexanol	W. Li et al. UVA	2 conformers assigned
$C_6H_{12}O$	*Cis*–3-hexen-1-ol	L. Evangelisti et al. UVA	2 conformers assigned
$C_6H_{12}O_2$	*trans*-1,2-cyclohexanediol	W. Caminati et al.	Spectrum assigned, OD species
$C_6H_{14}O_3$	ethanol 1,4-dioxane	L. Evangelisti et al.	1 conformer observed
C_6BrF_5	Bromopentafluorobenzene	S. Melandri et al.	MS in preparation
C_7F_6O	hexafluorobenzene carbon monoxide	S. Melandri et al. ISMN	Spectrum assigned
$C_7H_6F_2O$	2,6-difluorobenzylalcohol	L. Evangelisti et al.	Spectrum assigned, tunnelling
$C_7H_9NO_2S$	*p*-toluenesulfonamide	C. Calabrese et al. KCL	3 species assigned
$C_7H_9NO_2S$	*o*-toluenesulfonamide	A. Vigorito et al. KCL	Spectrum assigned, V_3
$C_7H_{11}NO$	benzylamine water	S. Melandri et al.	1 conformer
$C_7H_{12}O_2$	3,5-heptanedione	L. Evangelisti et al.	2 conformers
$C_7H_{14}O_3$	3,5-heptanedione Water	W. Li et al.	2 conformers
C_8H_8O	*p*-tolualdheyde	W. Caminati et al. PCI, LISA, NIST	V_3 & V_6
$C_8H_8O_2$	phenyl acetate	W. Caminati et al.	Spectrum assigned
$C_8H_{10}FN$	*p*-fluorophenylethylamine	S. Melandri et al.	2 conformers assigned
$C_8H_{16}O$	1-octen-3-ol	A. Maris et al.	2 conformers assigned
$C_8H_{18}N_2$	pyrrolidine dimer	A. Maris et al. ISMN	Spectrum assigned
$C_9H_9F_6N$	Hexafluorobenzene Trimetilammina	W. Li et al.	Spectrum assigned
$C_{10}H_{12}O_2$	eugenol	A. Maris et al.	Spectrum assigned
$C_{13}H_{13}F_6N$	Hexafluorobenzene Quinuclidine	W. Li et al.	Spectrum assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{11}NO$	N-tert-Butylformamide	Masaharu Fujitake	Manuscript in prep. Z, E-form
$C_5H_{13}NO_2$	N-tert-Butylformamide-water	Masaharu Fujitake	Manuscript in prep. Two conformers
$C_5H_{15}NO_3$	N-tert-Butylformamide-$(water)_2$	Masaharu Fujitake	Manuscript in prep.
$C_6H_{15}NO_2$	N-tert-Butylformamide-methanol	Masaharu Fujitake	Manuscript in prep. Two conformers
$C_6H_{14}N_2O_2$	N-tert-Butylformamide-formamide	Masaharu Fujitake	Spectrum assigned. formamide-^{15}N
$C_4H_{11}NO_2$	N,N-Dimethylacetamide-water	Masaharu Fujitake	Spectrum assigned. V_3 of 3 methyl tops
$C_4H_{10}O_4$	Methyl lactate-water	Masaharu Fujitake	Manuscript in prep. Three conformers
$C_4H_{12}O_5$	Methyl lactate-$(water)_2$	Masaharu Fujitake	Spectrum assigned. Two conformers

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{12}O_5$	Methyl lactate-methanol	Masaharu Fujitake	Spectrum assigned.
$C_3H_4D_3NO$	N-methylacetamide(NCD_3)	Masaharu Fujitake	Spectrum assigned.
C_3H_6DNO	N-methylacetamide(ND)	Masaharu Fujitake	Spectrum assigned.
$C_3H_4D_3NO$	N-methylacetamide(CCD_3)	Masaharu Fujitake	Spectrum assigned.
$C_3H_9NO_2$	N-methylacetamide-water	Masaharu Fujitake	Spectrum assigned. Two conformers
$C_3H_6D_3NO_2$	N-methylacetamide(CCD_3) -water	Masaharu Fujitake	Spectrum assigned.
$C_3H_6D_3NO_2$	N-methylacetamide(NCD_3) -water	Masaharu Fujitake	Spectrum assigned.
$C_3H_9NO_2$	N-methylacetamide-($H_2{}^{18}O$)	Masaharu Fujitake	Spectrum assigned.
$C_3H_7D_2NO_2$	N-methylacetamide-(D_2O)	Masaharu Fujitake	Spectrum assigned.
$C_3H_8DNO_2$	N-methylacetamide-(DOH)	Masaharu Fujitake	Spectrum assigned.
$C_3H_8DNO_2$	N-methylacetamide-(HOD)	Masaharu Fujitake	Spectrum assigned.
$C_3H_{10}O_5$	Methyl glycolate-$(water)_2$	Masaharu Fujitake	Spectrum assigned.
$C_4H_{10}O_4$	Methyl glycolate-methanol	Masaharu Fujitake	Spectrum assigned.
$C_4H_{11}NO$	1-Amino-2-methyl-2-propanol	Masaharu Fujitake	Spectrum assigned.
$C_4H_{13}NO_2$	1-Amino-2-methyl-2-propanol-water	Masaharu Fujitake	Spectrum assigned. Two conformers
$C_4H_9NO_2$	Formamide-trimethylene oxide	Masaharu Fujitake	Spectrum assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_8N_2O_2$	Formamide-N-methylformamide	Masaharu Fujitake	Spectrum assigned.
$C_2H_9NO_3$	N-methylformamide-$(water)_2$	Masaharu Fujitake	Spectrum assigned.
$C_2H_{11}NO_4$	N-methylformamide-$(water)_3$	Masaharu Fujitake	A-species assigned.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_3F_5O$	Pentafluoroethane–water complex	G. Feng, W. Caminati,[1] J.-U. Grabow,[2] A. Lesarri[3]	Manuscript ready for submit.
$C_3H_3ClF_4S_2$	Tetrafluoro-1,3-dithietane–CH_3Cl	T. Lu	Spectra assigned, 1 conformer, ^{37}Cl isotope, internal rotation of -CH_3 group
$C_3H_3NS_2F_6$	Thiazole-Sulfur hexafluoride	Y. Xu, W. Li	Spectra assigned, 1 conformer
C_3H_8OS	Dimethyl sulfide-formaldehyde complex	J. Zhang	Spectra assigned, one conformer
$C_4H_3F_4NS$	Thiazole-Carbon tetrafluoride	Y. Xu, W. Li	Spectra assigned, 1 conformer
C_4H_5NOS	Thiazole-formaldehyde complex	W. Li	Spectra assigned, three conformers, ^{13}C, ^{15}N, ^{34}S, ^{18}O isotopologues for one conformer, internal rotation of HCHO group for two conformers
$C_4H_5NO_2S$	Ethoxycarbonyl isothiocyanate	Y. Xu, W. Li, J. Zhang	Spectra assigned, two conformers, ^{13}C, ^{15}N, ^{34}S isotopologues
$C_4H_8O_2S$	Tetrahydrothiophen-3-one-water	W. Li, Y. Xu	Spectra assigned, one conformer, two ^{18}O isotopologues
C_4H_9NOS	Isopropylisothiocyanate-water	Y. Xu, W. Li, J. Zhang	Spectra assigned, one conformer, tunneling splitting.
$C_4H_8F_6$	$(CH_2F_2)_2$-CH_3CHF_2 trimer	T. Lu	Manuscript in preparation, 2 conformers, all the ^{13}C isotopes for the most stable conformer

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_9NOS	Isopropylisothiocyanate-water complex	Y. Xu, W. Li, J. Zhang	Spectra assigned, one conformer, internal rotation of H_2O
C_5H_7N	Cyclopropylacetonitrile	Z. Wang, Y. Xu	Spectra assigned, 2 conformers
C_5H_9NO	Cyclopropylacetonitrile-water complex	Z. Wang, Y. Xu	Spectra assigned, 2 conformers
C_5H_8O	1,4-Pentadien-3-ol	Z. Wang, Y. Xu, T. Lu	Spectra assigned, 1 conformers
$C_5H_{10}O_2$	1,4-Pentadien-3-ol-water complex	Z. Wang, Y. Xu, T. Lu	Spectra assigned, 1 conformers
$C_7H_8O_2$	p-hydroxybenzyl alcohol	Z. Wang, Y. Xu	Spectra recorded, analysis in progress.
$C_4H_8O_2$	2-Methylene-1,3-propanediol	Z. Wang, Y. Xu	Spectra recorded, analysis in progress.
$C_5H_{10}F_6$	CH_2F_2-$(CH_3CHF_2)_2$ trimer	T. Lu	Manuscript in preparation, 2 conformers, all the ^{13}C isotopes for the most stable conformer
$C_6H_{12}F_6$	$(CH_3CHF_2)_3$ trimer	T. Lu	Manuscript in preparation, 2 conformers, all the ^{13}C isotopes for the observed conformers
$C_7H_3F_5O$	Pentafluoroanisole	X. Li	Spectra assigned, 1 conformer
$C_7H_{11}NS$	Cyclohexyl isothiocyanate	Y. Xu, Z. Wang	Spectra assigned, 2 conformers, two ^{13}C and one ^{34}S isotopes for the observed conformers
$C_7H_{13}NOS$	Cyclohexyl isothiocyanate-water complex	Y. Xu, Z. Wang	Spectra assigned, 2 conformers, $H_2{}^{18}O$, D_2O, DOH isotopes for the most stable conformer
$C_9H_{16}O_2$	1,7-Dioxaspiro[5.5]undecane	Y. Xu, W. Li, J. Zhang	Spectra assigned, one conformer
$C_9H_{18}O_3$	1,7-Dioxaspiro[5.5]undecane-water complex	Y. Xu, W. Li, J. Zhang	Spectra assigned, one conformer
$C_9H_{20}O_4$	1,7-Dioxaspiro[5.5]undecane-$(water)_2$ complex	Y. Xu, W. Li, J. Zhang	Spectra assigned, one conformer

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_8H_6ArO	Benzofuran-Ar	J. Zhang	Spectra assigned, 1 conformer
C_8H_6KrO	Benzofuran-Kr	J. Zhang	Spectra assigned, 1 conformer
$C_8H_8O_2$	2,3-Benzofuran-water complex	X. Li	Spectra assigned, 2 conformers,
$C_{11}H_{11}NO$	indole···acrolein complex	X. Li	Spectra recorded, analysis in progress.
$C_4H_{10}O_3$	Trimethoxymethane	G. Feng,[1,4]	3 conformers assigned
$C_4H_8S_2$	Allyl methyl disulfide	X. Li, J.-U. Grabow [2]	Spectra assigned, 2 conformers
$C_4H_{10}OS_2$	Allyl methyl disulfide-H_2O complex	X. Li, J.-U. Grabow [2]	Spectra assigned, 1 conformer
$C_9H_8O_2$	2,3-Benzofuran-formaldehyde complex	X. Li, V. Barone,[5] C. Puzzarini,[1] J.-U. Grabow [2]	Spectra assigned, 1 conformer, manuscript in preparation.
$C_{11}H_{11}NO$	naphthalene···formamide complex	Y. Xu, X. Li, V. Barone,[5]	Spectra recorded, analysis in progress.
$C_{10}H_{10}O$	naphthalene···water complex	Y. Xu, X. Li, V. Barone,[5]	Spectra recorded, analysis in progress.
$C_4H_5F_3O_2$	1,1,1-Trifluoroacetone-formaldehyde	Y. Jin, J.-U. Grabow,[2] A. Lesarri[3]	Spectra assigned, manuscript in preparation
$C_2H_2F_4S_3$	2,2,4,4-Tetrafluoro-1,3-dithietane-H_2S	Y. Jin, R. T. Saragi,[3] A. Lesarri[3]	1conformer assigned, all the ^{34}S isotopes
$C_4H_{12}OS$	Ethanol–ethanethiol	Y. Jin, J. Zhang, X. Li, A. Lesarri[3]	Spectrum assigned, one conformer
$C_4H_{12}S_2$	Ethanethiol–ethanethiol	J. Zhang, X. Li, A. Lesarri[3]	Spectrum assigned, one conformer, tunneling splitting
$C_6H_6O_3S$	Benzofuran-SO_2	Y. Jin, R. T. Saragi,[3] A. Lesarri[3]	1 conformer assigned, ^{34}S species
C_6H_8OS	Benzofuran-H_2S	Y. Jin, R. T. Saragi,[3] A. Lesarri[3]	1 conformer assigned, splitting

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_7H_{14}S$	cyclohexylmethanethiol	Y. Jin, R. T. Saragi,[3] A. Lesarri[3]	Spectra assigned, 3 conformers
$C_8H_{16}O$	Cyclohexylethanol	Y. Jin, R. T. Saragi,[3] A. Lesarri[3]	Spectra assigned, 2 conformers
$C_{14}H_{28}S_2$	Cyclohexylmethanethiol dimer	Y. Jin, R. T. Saragi,[3] A. Lesarri[3]	Spectra assigned, 1 conformer
$C_{16}H_{32}O_2$	Cyclohexylethanol dimer	Y. Jin, R. T. Saragi,[3] A. Lesarri[3]	Spectra assigned, 1 conformer
$C_5H_{11}N$	2-Methylpyrrolidine	T. Lu, A. S. Hazrah, W. Jäger	Two conformers assigned; ab initio calculations completed.[6]
$C_9H_{18}F_6$	1,3-Difluoropropane trimer	T. Lu, A. S. Hazrah, W. Jäger	One conformer assigned; others in progress.[6]
$C_5H_{13}NO$	2-Methylpyrrolidine-H_2O	T. Lu, A. S. Hazrah, W. Jäger	Spectral assignment underway; ab initio calculations completed.[6]
$C_6H_{12}F_4$	1,3-Difluoropropane dimer	T. Lu, A. S. Hazrah, W. Jäger	One conformer assigned; all the ^{13}C isotopes for the observed conformer; others in progress.[6]
$C_7H_{14}O_3$	Cyclohexanecarboxylic acid-H_2O	T. Lu, A. S. Hazrah, F. Xie, W. Jäger	One conformer assigned; others in progress.[6]
$C_7H_{12}O_2$	Cyclohexanecarboxylic acid	T. Lu, A. S. Hazrah, F. Xie	One conformer assigned; others in progress.[6]

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Social Media Platforms and Handles:

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
AgI	silver iodide	L. Bizzocchi[g] B. M. Giuliano[g]	v = 1, I nq-hfs in progress
BaF	barium fluoride	R. J. Mawhorter[l]	isotopologues, fs/hfs measurement in progress
CBr_2F_2	dibromo- Difluoromethane	D. A. Obenchain J. Signore[d]	2x Br nq-hfs, cd in progress
CHI_3	triiodomethane	P. Buschmann K. Lengsfeld	I nq-hfs
CH_5NO_2	formic acid ···ammonia	F. Lovas[a] G. T. Fraser[a] R. D. Suenram[f]	lam, N nq-hfs, conformation spectrum assigned
COSXe	carbonyl sulfide ···xenon	S. Herbers D. Wachsmuth D. A. Obenchain P. Kraus	r_e-structure spectra assigned *Phys. Chem. Chem. Phys.* 22, 5615(2020).
$C_2ClF_3O_2$	chloro- trifluoromethane ···carbon dioxide	Y. Zheng[b] S. Herbers W. Caminati[g]	structure *J. Phys. Chem. Lett.*, in press (2021).
$C_2H_3F_4NS_2$	2,2,4,4-tetrafluoro- 1,3-dithiethane … ammonia	K. G. Lengsfeld X. Li P. Buschmann J. Wang	N nq-hfs, cd *J. Mol. Spectrosc.*, in press(2021).

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_3F_5O$	pentafluoroethane ⋯water	G. Feng[b] Q. Gou[b] W. Caminati[g] A. Lesarri[e]	lam, structure ms completed
C_2H_5NO	cis N-methyl-formamide	C. Evans[t], D. McNaughton[k]	N nq-hfs, cd measurements completed
$C_2H_6Cl_2Si$	dichloro-dimethylsilane	D. Banser W. Caminati[g], A. Lesarri[e] E. J. Cocinero[o] M. Schnell	lam, Cl nq-hfs analysis in progress
$C_2H_6Cl_2Sn$	dichloro-dimethylstannane	P. Ottaviani[g], M. Schnell	lam, Cl nq-hfs spectrum assigned
$C_2H_6ArF_2Ge$	difluoro-dimethylgermane ⋯argon	P. Ottaviani[g], M. Schnell	lam ms in preparation
$C_3H_4Cl_2F_2O$	methoxyflurane	A. Vega[e], E. J. Cocinero[o]	2x Cl nq-hfs, cd, conformations in progress
C_3H_9ClGe	chloro-trimethylgermane	M. Schnell J. Fritzsche	^{73}Ge nq-hfs, cd analysis in progress
$C_3H_8N_2O$	N,N'-dimethylurea	C. Höhne P. Buschmann	lam, nq-hfs analysis in progress
$C_4H_2O_3$	succinic anhydride	M. K. Jahn, K. P. R. Nair, D. A. Obenchain, P. Godfrey[k], D. McNaughton[k], N. Vogt[v], J. Demaison[n]	fs, cd, theor. struct. calc. *Phys. Chem. Chem. Phys.* 22, 5170(2020).

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_3F_3O_3$	methyl 3,3,3-trifluoropyruvate	K. Lengsfeld P. Buschmann P. Kats S. Herbers D. A. Obenchain S. Genuit C. M. Höhne	lam *Z. Phys. Chem.* 234, 1383(2020).
$C_4H_4BrNO_2$	N-Bromosuccin-imide	P. Buschmann D. A. Obenchain K. Lengsfeld S. Genuit	N,Br nq-hfs, cd spectra assigned
$C_4H_4ClNO_2$	N-Chlorosuccin-imide	P. Buschmann D. A. Obenchain K. Lengsfeld S. Genuit	N,Cl nq-hfs, cd spectra assigned
C_4H_4O	acetylacetylene	P. Buschmann F. Dohrmann K. G. Lengsfeld	rot. spec., cd, conformation *Mol. Spectrosc*., in press(2021).
$C_4H_5F_3O_2$	1,1,1-Trifluoro acetone …formaldehyde	Y. Jin[b] A. Lesarri[e]	Spectra assigned, 1 conformer ms in preparation
$C_4H_5NO_2$	succinimide	S. Herbers D. A. Obenchain D. McNaughton[k]	N nq-hfs, cd analysis in progress
$C_4H_5NO_3$	N-Hydroxy-succinimide	P. Buschmann K. Lengsfeld	N nq-hfs analysis in progress
$C_4H_6F_4S_3$	2,2,4,4-tetrafluoro-1,3-dithiethane … dimethylsulfide	D. A. Obenchain L. Spada[g] M. Juanes[e] K. G. Lengsfeld	rot. spec., cd, conformation r_s in progress
$C_4H_6O_2$	vinylacetate	S. Genuit P. Buschmann K. G. Lengsfeld	lam, structure high K_a analysis in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_6O_3$	acetic anhydride	P. Buschmann K. G. Lengsfeld	lam, two conformers analysis in progress
C_4H_7NO	methacrylamide	K. Lengsfeld P. Buschman S. Herbers	lam, s-cis (C_s), s-trans(C_1) ms in preparation
C_4H_7NO	acetone-cyanohydrin	K. Aydt, M. J. Travers, M. K. Jahn P. Buschmann K. G. Lengsfeld S. Herbers H. V. L. Nguyen[m]	N nq-hfs, cd *J. Mol. Spectrosc.* 373, 111372(2020).
$C_4H_8O_3$	alpha-hydroxyiso-butyric acid	J. Djahandideh P. Buschmann K. G. Lengsfeld	rot. spec., cd, conformation ms in preparation
$C_4H_8S_2$	allyl methyl-Disulfide	X. Li[b] K. G. Lengsfeld P. Buschmann	Spectra assigned, 2 conformers, lam ms in preparation
$C_4H_{10}O_3$	diethyleneglycol	M. Wei P. Buschmann K. G. Lengsfeld X. Li[b]	rot. spec., cd, conformation ms in preparation
$C_4H_{10}ArS_2$	diethyl disulfide …argon	T. Lu[b] D. A. Obenchain	rot. spec., cd *J. Chem. Phys.* , in press(2021).
$C_4H_{10}OS_2$	allyl methyl-disulfide …water	X. Li[b] K. G. Lengsfeld P. Buschmann	Spectra assigned, 1 conformer, lam ms in preparation
$C_4H_{12}OS_2$	diethyl disulfide …water	X. Li[b] T. Lu[b] D. A. Obenchain J. Zhang[b] S. Herbers	lam, conf., O^{18}, D_2O, DOH, HOD *Angew. Chem. Int. Ed.* , in press (2021).

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_5HN	pentadiine nitrile	H. S. P. Müller[j] T. Giesen[w]	N nq-hfs, cd *J. Mol. Spectrosc.* 371, 11303(2020).
C_5H_4OS	2-thiophene-carboxaldehyde	W. Li[b] M. Li[b] Y. Jin[b]	rot. spec., cd, 2 conf. *J. Chem. Phys.* 151, 164307(2019)
$C_5H_4O_3$	itaconic anhydride	D. A. Obenchain S. Herbers C. M. Höhne P. Buschmann D. McNaughton[k] C. Höhne P. Buschmann D. McNaughton[k]	rot. spec., cd analysis in progress
$C_5H_4O_3$	methyl succinic anhydride	D. A. Obenchain S. Herbers C. M. Höhne P. Buschmann Y. Schmitt D. McNaughton[k]	rot. spec., cd, lam assignment completed
$C_5H_8O_2$	acetylacetone	W. Caminati[g], H. G. Kjaergaard[c] P. Buschmann K. G. Lengsfeld	lam, enolic shape deuterated species in progress
$C_5H_{10}O_3$	methyl methacrylate …water	S. Herbers K. Lengsfeld J. Wang P. Buschmann S. Genuit	lam, conformation assignment in progress
$C_5H_{12}OS_2$	diethyl disulfide …formaldehyde	X. Li[b] T. Lu[b] D. A. Obenchain J. Zhang[b] S. Herbers	conf. *Angew. Chem. Int. Ed.* , in press(2021).

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{13}NOS_2$	diethyl disulfide …formamide	X. Li[b] T. Lu[b] D. A. Obenchain J. Zhang[b] S. Herbers	conf. *Angew. Chem. Int. Ed.* , in press(2021).
$C_5H_{16}SiSn$	dimethylsilyl-trimethylstannane	J. T. Hougen[a], M. Schnell	lam assignment in progress
$C_6H_3F_3O$	3,4,5-trifluoro-phenol	K.P.R. Nair P. Buschmann D. A. Obenchain K. G. Lengsfeld	rot. spec., cd, r_s-structure ms in preparation
$C_6H_3F_3O$	2,3,4-trifluoro-phenol	K.P.R. Nair P. Buschmann D. A. Obenchain K. G. Lengsfeld	rot. spec., cd, r_s-structure analysis completed
$C_6H_4F_2O$	2,5-difluoro - phenol	K.P.R. Nair H. V. L. Nguyen[m]	rot. spec., cd, r_s-structure spectrum assigned
$C_6H_4F_2O$	3,4-difluoro - phenol	K.P.R. Nair H. V. L. Nguyen[m]	rot. spec., cd, r_s-structure spectrum assigned
$C_6H_4F_2O$	3,5-difluoro - phenol	D. Dewald P. Buschmann K. G. Lengsfeld	lam ms in preparation
$C_6H_4N_2$	2-cyano pyridine	D. Prudenzano, D. Wachsmuth, M. K. Jahn, D. McNaughton[k]	2x N nq-hfs, r_s-structure ms in preparation
$C_6H_4N_2$	3-cyano pyridine	D. Prudenzano, D. Wachsmuth, M. K. Jahn, D. McNaughton[k]	2x N nq-hfs, r_s-structure ms in preparation
C_6H_5BrO	ortho-bromo-phenol	K.P.R. Nair K. G. Lengsfeld P. Buschmann J. Wang	Br nq-hfs, r_s-structure assignment completed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_6H_5ClO	ortho-chloro-phenol	K.P.R. Nair K. G. Lengsfeld P. Buschmann J. Wang	Cl nq-hfs, r_s-structure assignment completed
C_6H_5ClO	meta-chloro-phenol	P. Buschmann K. G. Lengsfeld S. Herbers S. Genuit C. M. Höhne	conformations, Cl nq-hfs *J. Mol. Struct.* 1217, 128224(2020).
C_6H_5ClO	para-chloro-phenol	P. Buschmann K. G. Lengsfeld S. Herbers S. Genuit C. M. Höhne	extended Townes-Daily, Cl nq-hfs *J. Mol. Struct.* 1217, 128224(2020).
C_6H_5BrO	para-bromo-phenol	P. Buschmann K. G. Lengsfeld K.P.R. Nair	lam, Br nq-hf analysis in progress
C_6H_5IO	ortho-iodo-phenol	K.P.R. Nair K. G. Lengsfeld P. Buschmann J. Wang	I nq-hfs, r_s-structure assignment completed
C_6H_7N	4-picoline	S. Herbers M. K. Jahn D. Wachsmuth J. Matysik[i] V. V. Ilyushin[p] W. Caminati[g] P. Buschmann K. G. Lengsfeld	lam, N nq-hfs analysis in progress
C_6H_7NO	2-methoxypyridine	W. Cheng[b] J. Zhang[b]	conformation *Spectrochim. Acta A.* 239, 118434(2020).
$C_6H_8O_2$	cyclopentene …carbon dioxide	J. Wang S. Herbers	r_s-structure ms in preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_8O_2$	3-methylcyclo-pentane-1,2-dione	J. Wang S. Herbers P. Buschmann	lam, structure ms in preparation
$C_6H_8O_7$	citric acid	C. M. Höhne P. Buschmann K. G. Lengsfeld	rot. spec., cd analysis in progress
$C_6H_9NO_2$	2-methoxypyridine …water	W. Cheng[b] J. Zheng[b]	conformation accepted *Spectrochim. Acta A.*
$C_6H_{10}O_3$	3-methylcyclo-pentane-1,2-dione …water	J. Wang S. Herbers P. Buschmann	lam, structure ms in preparation
$C_6H_{11}NO$	ε-caprolactam	D. Wachsmuth M. Vallejo[e] P. Buschmann K. G. Lengsfeld	pseudo-rot., N nq-hfs ms in preparation
$C_6H_{12}O$	oxepane	J. Borter, D. Wachsmuth, A. Lesarri[e] P. Buschmann K. G. Lengsfeld	pseudo-rot. spectrum assigned
$C_6H_{12}O_3$	methyl methacrylate …methanol	S. Herbers K. G. Lengsfeld J. Wang P. Buschmann S. Genuit	lam, conformation assignment in progress
$C_6H_{13}N$	azepane	D. Wachsmuth, M. Vallejo[e] P. Buschmann K. G. Lengsfeld	pseudo-rot., N nq-hfs ms in preparation
$C_7H_5F_3$	2,4,5-trifluoro-toluene	K. P. R. Nair S. Herbers	lam, r_s-structure *Can. J. Phys.* 98, 543(2020).
$C_7H_5F_3$	2,3,4-trifluoro-toluene	K. P. R. Nair S. Herbers	lam, r_s-structure *Can. J. Phys.* 98, 543(2020).

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_7H_6FCl	2-Chloro-4-fluoro-toluene	K. P. R. Nair S. Herbers A. Lesarri[e] H. V. L. Nguyen[m]	lam, nq-hfs *Spectrochim. Acta A.*, in press(2021).
C_7H_7Br	ortho-bromo-toluene	K. P. R. Nair S. Herbers, J. Wang, P. Buschmann K. G. Lengsfeld	lam, Br nq-hfs *Phys. Chem. Chem. Phys.* 22, 11490(2020).
C_7H_7Br	meta-bromo-toluene	K. Lengsfeld P. Buschmann H. V. L. Nguyen[m,q]	lam, Br nq-hfs assignment in progress
C_7H_7Cl	ortho-chloro-toluene	K. P. R. Nair S. Herbers, J. Wang, P. Buschmann K. G. Lengsfeld	lam, Cl nq-hfs *Phys. Chem. Chem. Phys.* 22, 11490(2020).
C_7H_7Cl	para-chloro-toluene	K. P. R. Nair V. V. Ilyushin[p] H. V. L. Nguyen[m]	lam, Cl nq-hfs ms in preparation
C_7H_7F	ortho-fluoro-toluene	K. P. R. Nair S. Herbers, J. Wang, P. Buschmann K. G. Lengsfeld	lam, substituent effects *Phys. Chem. Chem. Phys.* 22, 11490(2020).
C_7H_7F	meta-fluoro-toluene	K. P. R. Nair S. Herbers H. V. L. Nguyen[m]	lam, r_s-structure *Spectrochim. Acta A.* 242, 118709(2020).
C_7H_7I	ortho-iodo-toluene	K. P. R. Nair S. Herbers J. Wang P. Buschmann K. G. Lengsfeld	lam, I nq-hfs *Phys. Chem. Chem. Phys.* 22, 11490(2020).

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_7H_7N	phenylmethanimine	A. Melli[x] S. Herbers L. Spada[x] K. G. Lengsfeld P. Buschmann P. G. Cozzi[g]	isomers, N nq-hfs *Chem. - Eur. J.* 26, 15016(2020).
C_7H_{12}	cycloheptene	D. Wachsmuth P. Buschmann K. G. Lengsfeld	rot. spec., cd, structure ms in preparation
$C_7H_{12}O$	cycloheptanone	D. Wachsmuth, M. K. Jahn P. Buschmann K. G. Lengsfeld	pseudo-rot. spectrum assigned
$C_8H_4N_2$	1,2-dicyano-benzene	E. Locatelli D. Dewald M. K. Jahn K. G. Lengsfeld P. Buschmann D. A. Obenchain D. McNaughton[k]	N nq-hfs, cd, structure ms submitted
$C_8H_4N_2$	1,3-dicyano-benzene	D. Dewald M. K. Jahn M. Jüstel/Vogt K. G. Lengsfeld P. Buschman D. A. Obenchain F. Lovas[a] D. McNaughton[k]	N nq-hfs, cd, structure ms submitted
$C_8H_6F_4O$	benzaldehyde …tetrafluoromethane	H. Wang[b] W. Caminati[g]	structure, 1 conformer ms completed
C_8H_8O	para-tolualdehyde	W. Caminati[g] A. Hight-Walker [a] J. T. Hougen [a] I. Kleiner[q] J. Gauß[h] H. Saal	int. rot. potential ab-initio tors. analysis ms in preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_8H_{11}N$	2-ethylaniline	J. Wang S. Herbers, P. Buschmann K. G. Lengsfeld	N nq-hfs, cd *Chin. J. Chem. Phys.* 33, 119(2020).
$C_8H_{11}N$	3-ethylaniline	J. Wang S. Herbers, P. Buschmann K. G. Lengsfeld	N nq-hfs, cd *Chin. J. Chem. Phys.* 33, 119(2020).
$C_8H_{11}N$	4-ethylaniline	J. Wang S. Herbers, P. Buschmann K. Lengsfeld	N nq-hfs, cd in press *Chin. J. Chem. Phys.*
$C_8H_{12}N$	cyanocycloheptane	D. Wachsmuth A. Lesarri[e] P. Buschmann K. G. Lengsfeld	lam, N nq-hfs, conformation ms in preparation
$C_9H_6N_2$	3-cyanoindole	K. P. R. Nair P. Buschmann K. G. Lengsfeld J. Wang S. Herbers D. McNaughton[k] M. Schmitt[r]	r_s structure, N nq-hfs Spectrum assigned
$C_9H_6N_2$	4-cyanoindole	K. P. R. Nair P. Buschmann K. G. Lengsfeld J. Wang S. Herbers D. McNaughton[k] M. Schmitt[r]	r_s structure, N nq-hfs Spectrum assigned
$C_9H_6N_2$	5-cyanoindole	K. P. R. Nair P. Buschmann K. G. Lengsfeld J. Wang S. Herbers D. McNaughton[k] M. Schmitt[r]	r_s structure, N nq-hfs Spectrum assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_9H_6N_2$	6-cyanoindole	K. P. R. Nair P. Buschmann K. G. Lengsfeld J. Wang S. Herbers D. McNaughton[k] M. Schmitt[r]	r_s structure, N nq-hfs Spectrum assigned
$C_9H_6N_2$	7-cyanoindole	K. P. R. Nair P. Buschmann K. G. Lengsfeld J. Wang S. Herbers D. McNaughton[k] M. Schmitt[r]	r_s structure, N nq-hfs Spectrum assigned
$C_9H_6O_2$	coumarin	H. V. L. Nguyen[m]	rot. spec., cd, structure *ChemPhysChem* 21, 1243(2020).
C_9H_7NO	8-hydroxy-quinoline	D. Wachsmuth, S. Herbers, J. Wang, P. Kraus, D. A. Obenchain D. McNaughton[k]	rot. spec., cd, N nq.hfs r_e structure heavy atom species assigned ms completed
$C_9H_8O_2$	2,3-Benzofuran …formaldehyde	X. Li K. G. Lengsfeld P. Buschmann L. Spada[x]	structure, 1 conformer ms in preparation
$C_9H_8O_3$	acetophenone ⋯carbon dioxide	M. Li[b] J. Lei[b]	structure *Spectrochim. Acta A.* 238, 118424(2020).
$C_{10}H_{10}O$	4-Phenyl-3-buten-2-on	P. Buschmann A. Sander S. Herbers K. G. Lengsfeld	lam, s-cis, s-trans, r_s-structure ms in preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{11}H_{15}NO_2$	butamben	M. Vallejo[e], W. Caminati[g] E. J. Cocinero[o] A. Lesarri[e]	conformation(s), r_s-structure *Chem. Comm*. 56, 6094(2020).
$C_{11}H_{15}NO_2$	isobutamben	M. Vallejo[e], W. Caminati[g] E. J. Cocinero[o] A. Lesarri[e]	conformation(s), r_s-structure *Chem. Comm*. 56, 6094(2020).
$ClFLi_2$	dilithium chloride fluoride	R. J. Mawhorter[l]	structure measurement in progress
ClRb	rubidium chloride	R. J. Mawhorter[l]	isotopologues, fs/hfs assignment completed
CsF_2Li	lithium caesium difluoride	R. J. Mawhorter[l]	structure measurement in progress
CuI	copper iodide	L. Bizzocchi[g], B. M. Giuliano[g]	nq-hfs, spin-spin coupling, v = 1, in progress
FHf^+	hafnium fluoride ion	R. J. Mawhorter[l], E. A. Cornell[aa]	isotopologues, fs/hfs measurement in progress
FK	potassium fluoride	R. J. Mawhorter[l]	isotopologues, fs/hfs assignment completed
FPb	lead fluoride	R. J. Mawhorter[l] T. J. Sears[s] A. N. Petrov[z] P. M. Rupasinghe[q]	Zeeman effect, g-factor *Phys. Rev. A* , in revision (2021).
FPb	lead fluoride	R. J. Mawhorter[l] T. J. Sears[s]	isotopologues, fs/hfs v > 0, measurement in progress
FRb	rubidium fluoride	R. J. Mawhorter[l]	isotopologues, fs/hfs assignment completed
FYb	ytterbium flouride	R. J. Mawhorter[l], T. C. Steimle[u]	isotopologues, fs/hfs measurement in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
F_2KLi	lithium potassium difluoride	R. J. Mawhorter[l]	structure assignment completed
F_2LiRb	lithium rubidium difluoride	R. J. Mawhorter[l]	structure measurement in progress
HOYb	ytterbium hydoxide	R. J. Mawhorter[l], T. C. Steimle[u] N. R. Hutzler[y]	isotopologues, fs/hfs measurement in progress
IK	potassium iodide	R. J. Mawhorter[l]	isotopologues, fs/hfs assignment completed
IRb	rubidium iodide	R. J. Mawhorter[l]	isotopologues, fs/hfs assignment completed
NTa	tantalum nitride	R. J. Mawhorter[l], T. C. Steimle[u]	isotopologues, fs/hfs measurement in progress

The Hannover FTMW spectrometer control & analysis software is available at:
http://www.pci.uni-hannover.de/~lgpca/spectroscopy/ftmw (temporarily down)
https://1drv.ms/u/s!AioD2HdE1Y6jgfRVP7VADSexL3pZWw?e=9CXTkm (temporarily up)

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FORMULA	NAME OF COMPOUND	INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_6O	dimethyl ether-1,1-d_2 (CHD_2OCH_3)	Richard,[a] Motiyenko,[b] Margulès,[b] Jørgensen[c]	ERHAM fit 2 conformers manuscript accepted by A&A
C_2H_7P	ethylphosphine		ERHAM analysis for doublets or quartets in vib exc states

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Slack Smitty Grubbs
Facebook Smitty Grubbs (but reach out via email to connect)

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_6F_2Si$	1,1-Difluorosilacyclopent-2-ene	T. McFadden[2], F. Marshall[1], E. Ocola[3], G. Guirgis[2], J. Laane[3], G. Grubbs II[1]	*J. Phys Chem A*. **124** (2020) 8254-8262.
EXPERIMENTAL	Multiple Antennae Design CP-FTMW (MAD-CP-FTMW)	A. Duerden[1], F. Marshall[1], N. Moon[1], C. Swanson[1], K. Donnell[1], G. Grubbs II[1]	*J. Mol. Spectrosc.* **376** (2021) 111396.
EXPERIMENTAL	Low-Cost Balle-Flygare FTMW Experiment	A. Duerden[1], N. Moon[1], G. Grubbs II[1]	*J. Chem. Educ.* **98** (2021) 1008-1016
ANALYSIS/DATABASE	Rotational Spectroscopy Teaching Laboratory	A. Duerden[1], N. Moon[1], G. Grubbs II[1]	*J. Chem. Educ.* **98** (2021) 1008-1016
$AgClD_2$ AgClDH (D_2-AgCl and HD-AgCl)	Deuterium-Silver Chloride complex	D. Obenchain[4], G. Grubbs II[1], D. Frank[4], H. Pickett[4], S. Novick[4]	Manuscript in Prep.
BaS	Barium Monosulfide	G. Grubbs II[1], C. Dewberry[5], K. Etchison[6], S. Cooke[7]	Manuscript in Prep.
CF_2I_2	Difluorodiiodomethane	G. Grubbs II[1], S. Novick[4], S. Cooke[7]	Assignments in Progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CO_3S	Oxygen-Carbonyl Sulfide vdW Complex	A. Duerden[1], S. Blanco[8], B. Howard[9], F. Marshall[1], T. Persinger[1], G. Grubbs II[1]	Assignments in Progress
C_3ClF_5O	Chloropentafluoroacetone	S. Cooke[7] and G. Grubbs II[1]	Manuscript in Prep. with $C_3Cl_2F_4O$
$C_3Cl_2F_4O$	1,3-Dichloro-1,1,3,3-tetrafluoroacetone	W. Bailey[10], S. Cooke[7], G. Grubbs II[1]	Manuscript in Prep. with C_3ClF_5O
$C_3H_2ClF_3O$	1-Chloro-3,3,3-trifluoroacetone	W. Bailey[10], S. Cooke[7], G. Grubbs II[1]	Manuscript in Prep.
C_3H_5ClO	Chloroacetone	F. Marshall[1], S. Cooke[7], G. Grubbs II[1]	Assignments in Progress
$C_3H_7F_5O_5$	Perfluoropropionic Acid Trihydrate Complex	G. Grubbs II[1], D. Obenchain[4], S. Cooke[7], S. Novick[4], A. Serrato III[11], W. Lin[11]	Assignments in Progress
$C_3H_{10}Si_2$	1,5-Disilapentane	N. Moon[1], L Nguyen[12], I. Kleiner[12], T. McFadden[2], G. Guirgis[2], G. Grubbs II[1]	Assignments in Progress
$C_4H_6F_2Si$	1,1-Difluorosilacyclopent-3-ene	T. McFadden[2], N. Moon[1], F. Marshall[1], A. Duerden[1], E. Ocola[3], J. Laane[3], G. Guirgis[2], R. Dawes[1], G. Grubbs II[1]	Manuscript to be Submitted to *PCCP* with C_4H_8Si
$C_4H_6F_3I$	3-Iodo-1,1,1-Trifluorobutane	J. Isert[1], F. Marshall[1], G. Grubbs II[1]	Assignments in Progress
$C_4H_8F_2Si$	1,1-Difluorosilacyclopentane	N. Moon[1], F. Marshall[1], T. McFadden[2], G. Guirgis[2], G. Grubbs II[1]	Manuscript to be Submitted to *J. Mol. Struct.*
C_4H_8Si	Silacyclopent-3-ene	T. McFadden[2], N. Moon[1], F. Marshall[1], A. Duerden[1], E. Ocola[3], J. Laane[3], G. Guirgis[2], R. Dawes[1], G. Grubbs II[1]	Manuscript to be Submitted to *PCCP* with $C_4H_6F_2Si$

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_8O_2$	Cyclobutanecarboxylic Acid	J. Baltierrez[11], M. Carrillo[11], J. Isert[1], N. Moon[1], W. Lin[11], G. Grubbs II[1]	Experiments in Progress
$C_5H_8Cl_2Si$	1,1-Dichloro-silacyclohex-2-ene	T. McFadden[2], A. Duerden[1], N. Moon[1], G. Guirgis[2], N. Seifert[13], G. Grubbs II[1]	Assignments in Progress
$C_5H_{10}ClFSi$	1-Fluoro-1-chloromethylsilacyclopentane	F. Marshall[1], T. Pulliam[1], T. McFadden[2], G. Guirgis[2], G. Grubbs II[1]	Manuscript in Prep.
$C_5H_8F_2Si$	1,1-Difluoro-silacyclohex-2-ene	T. McFadden[2], A. Duerden[1], N. Moon[1], N. Seifert[13], G. Guirgis[2], G. Grubbs II[1]	Assignments in Progress
$C_5H_{10}Si$	Silacyclohex-2-ene	T. McFadden[2], A. Duerden[1], N. Moon[1], N. Seifert[13], G. Guirgis[2], G. Grubbs II[1]	Assignments in Progress
$C_5H_{12}Si$	Cyclopentylsilane	N. Moon[1], L. Licaj[2], N. Seifert[13], G. Guirgis[2], G. Grubbs II[1]	Assignments in Progress
$C_6H_{10}O_2$	Cyclopentanecarboxylic Acid	J. Baltierrez[11], M. Carrillo[3], N. Moon[1], W. Lin[3], G. Grubbs II[1]	Experiments in Progress
$C_{10}H_{14}O$	Carvone Additional Isotopologues and Conformers Observed	N. Moon[1], G. Grubbs II[1]	Assignments in Progress
$C_{10}H_{18}O$	Endo-(-)-Borneol	G. Sedo[14], A. Duerden[1], N. Moon[1], G. Grubbs II[1]	1 Conformer Assigned
$C_{11}H_{18}O$	Nopol	F. Marshall[1], A. Duerden[1], N. Moon[1], G. Sedo[14], G. S. Grubbs II[1]	Manuscript in Prep.
$C_{14}H_{20}O$	Verbenone-3-butyn-2-ol vdW Complex (chiral tag)	L. Evangelisti[15], K. Mayer[16], M. Holdren[16], T. Smart[16], C. West[16], B. Pate[16], G. Sedo[14], F. Marshall[1], G. Grubbs II[1]	Assignments in Progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$ClCuH_2$	Hydrogen-Copper Chloride complex	D. Obenchain[4], G. Grubbs II[1], H. Pickett[4], S. Novick[4]	Manuscript in Prep.
$ClHO_2$	Oxygen-Hydrogen Chloride vdW Complex	A. J. Duerden[1], F. Marshall[1], D. Gillcrist[1], N. Moon[1], T. Persinger[1], G. S. Grubbs II[1]	Assignments in Progress
ClU	Uranium Chloride	J. Isert[1], A. Duerden[1], N. Moon[1], S. Cooke[7], G. Grubbs II[1]	Experiments in Progress
ClPb	Lead Monochloride	G. Grubbs II[1], R. Dawes[1], B. Long[17], C. Dewberry[5], S. Cooke[7]	Assignments in Progress
H_2O_3	Oxygen-Water vdW Complex	A. Duerden[1], F. Marshall[1], N. Moon[1], T. Persinger[1], G. Grubbs II[1]	Assignments in Progress
EXPERIMENTAL	M3WM with 2 AWGs	N. Moon[1], G. Grubbs II[1]	Manuscript to be Submitted to *Symmetry*
EXPERIMENTAL	Phase Correlation in MAD-CP-FTMW	C. Swanson[1], A. Duerden[1], N. Moon[1], G. Grubbs II[1]	Experiments/ Analyses in Progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_3	Vinyl H_2CCH	K. Tanaka Y. Endo	Proton tunneling P-branch transition was observed by FTMW spectroscopy.
C_2D_3	Vinyl D_2CCD	M. Ohtsuki H. Matsubayashi	Proton tunneling transitions assigned and analyzed. Manuscript in preparation.
CCoO	Cobalt carbonyl CoCO	T. Hikida M. Hayashi	Rotational spectrum in the Ω = 3/2 and 5/2 spin states and vibrationally excited states assigned and analyzed. Manuscript in preparation.
FeNO	Iron nitrosyl	M. Nakashima S. Ikeda	Rotational spectrum in the ground and vibrationally excited states assigned.
$C_7H_6O_2$	Tropolone $C_7H_5O_2D$	H. Matsumoto	Pure rotational transitions. Manuscript in preparation.
$C_7H_6O_2$	Tropolone $C_7H_5O_2D$	K. Tanaka Y. Endo	FTMW spectra of tunneling rotation transitions. Manuscript in preparation.
$C_7H_6O_2$	Tropolone $^{13}CC_6H_6O$	K.Tanaka Y. Endo	Pure rotational and tunneling rotation transitions of ^{13}C isotopic substituted species. Manuscript in preparation.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_7H_6O_2$	Tropolone $C_6H_6{}^{16}O^{18}O$ $C_6H_6{}^{18}O_2$	K.Tanaka Y. Endo	Pure rotational and tunneling rotation transitions of ^{18}O isotopic substituted species.
$C_3H_4O_2$	Malonaldehyde	T. Baba K. Tanaka	Proton tunneling spectrum. Collaboration with Dr. K.M.T. Yamada (NIRE).
CHHeN	Helium-hydrogen cyanide complex He-HCN	K. Harada K. Tanaka	Millimeterwave spectrum of internal rotation hot band and intermolecular stretching band. Rotational predissociation was detected. Manuscript in preparation.
CDHeN	Helium-hydrogen cyanide complex He-DCN	K. Harada M. Takagi M. Takamori A. Tsukamoto	Millimeterwave spectrum of internal rotation fundamental and hot bands.
CHNNe	Neon-hydrogen cyanide complex Ne-HCN	K. Harada A. Okumura K. Hagi	Millimeterwave spectrum of internal rotation bands. Manuscript in preparation.
CDNNe	Neon-hydrogen cyanide complex Ne-DCN	M. Takagi N. Oyamada	Millimeterwave spectrum of internal rotation bands.
CHArN	Argon-hydrogen cyanide complex Ar-HCN	S. Matsushita	Millimeterwave spectrum of the j=3-2 internal rotation band.
CDArN	Argon-hydrogen cyanide complex Ar-DCN	R. Watanabe	Millimeterwave spectrum of the j=2-1 internal rotation band.
CH_3N	Hydrogen-hydrogen cyanide complex H_2-HCN	K. Hagi R. Yamanaka M. Ishiguro K. Harada K. Tanaka	Millimeterwave absorption spectrum of internal rotation band observed and assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2DN	Hydrogen-hydrogen cyanide complex H_2-DCN	M. Ishiguro K. Harada K. Tanaka T. Tanaka M. Nakajima Y. Sumiyoshi Y. Endo	FTMW and MMW spectra have been observed and analyzed. Manuscript in preparation.
H_3Cl	Hydrogen-hydrogen chloride complex H_2-HCl	M. Ishiguro	Pure rotational spectrum assigned and analyzed.
DH_2Cl	Hydrogen-hydrogen chloride complex H_2-DCl	K. Nagata	Pure rotational spectrum observed and analyzed.
H_3F	Hydrogen-hydrogen fluoride complex HF and DF	T. Moriyama Y. Iwasaki	Pure rotational spectrum
$CHFO_2$	Carbon dioxide-hydrogen fluoride complex OCO-HF OCO-DF	K. Harada M. Ishiguro C. Whitham	Millimeterwave spectrum of vdw bend band.
H_4O	Hydrogen-water complex H_2-H_2O H_2-D_2O	K. Harada C. Whitham Y. Iwasaki T. Giesen K. Tanaka	Pure rotational millimeterwave spectrum observed. Manuscript in preparation.
$C_2H_2N_2$	Hydrogen cyanide Dimer HCN-DCN DCN-HCN DCN-DCN	K. Harada M. Shirasaka K. Tanaka	Millimeterwave spectrum of high-*J* rotational lines. Manuscript in preparation.
C_2H_2N	Cyanomethyl radical CH_2CN	M. J. Tsuchiya	Spectrum in excited vibrational states observed.
Cl_2Sn	Tin dichloride	K. Uemura	Spectrum assigned.
FGe^+	Germanium fluoride ion GeF^+	K. Tanaka	In progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_6	Cyclopropane	K. Tanaka	Centrifugal distortion induced transitions.
C_3H_4	Allene	K. Tanaka	Vibrationally induced transitions. Manuscript in preparation.
F_3OP	Phosphoryl fluoride POF_3	K. Someya	LMDR in excited states in progress.
F_3HSi	Trifluorosilane $HSiF_3$ and $DSiF_3$	K. Harada	LMDR Manuscript in preparation.
CH_3F	Methyl fluoride CH_3F and CD_3F	K. Harada	LMDR Manuscript in preparation.
CH_3I	Methyl iodide	K. Harada	LMDR in progress.
C_2HF	Fluoroacetylene HCCF	Y. Nakahara	LMDR in progress.
C_2H_3N	Methyl cyanide CH_3CN	T. Oyama	LMDR in progress.
C_2H_3N	Methyl isocyanide CH_3NC	T. Oyama	LMDR Manuscript in preparation.
C_3HN	Cyanoacetylene DCCCN	K. Tanaka	LMDR in progress.
CFN	Cyanogen fluoride FCN	S. Matsuba	LMDR in progress.
ClF_5S	Sulfur chloride pentafluoride	K. Harada	LMDR in progress.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_{10}S$	7-Thiabicyclo [2.2.1]heptane	K. Irie	Work in progress.
HNO	Nitroxyl	K. Takagi[b] S. Saito[c]	Manuscript in preparation.
ClOS[ClSO]	ClSO radical	S. Saito[c]	Work almost completed.
CH_3O_2[CH_3OO]	Methyl peroxide	K. Katoh[d] Y. Endo[d] E. Hirota	Manuscript in preparation.
$C_4H_6D_2$	Cyclobutane-1,2-d_2	E. Hirota	*cis*, *trans*, work completed.
$C_4H_4D_4$	Cyclobutane-1,1,3,3,-d_4	E. Hirota	Work completed.
KO	Potassium monoxide	C. Yamada	$^2\Pi$, $^2\Sigma^+$, work almost completed.
BH_4N	Aminoborane	W. Lewis-Bevan	Work almost completed.
BH_4Li	Lithium tetrahydroborate	Y. Kawashima[a]	Excited vibrational states, work in progress.
BH_4K	Potassium tetrahydroborate	Y. Kawashima[a]	Excited vibrational states, work almost completed.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_6N_2O$ $[N_2\text{-}(CH_3)_2O]$	Dinitrogen-dimethyl ether	Y. Kawashima[a] E. Hirota	Spectra assigned for N_2, $N^{15}N$, $^{15}N_2$ species.
$C_3H_6N_2O_2$ $[NH_2COCH_2CONH_2]$	Malonamide	T. Usami[a] Y. Kawashima[a] R. D. Suenram[e] E. Hirota	Manuscript prepared.
C_3H_6O $[CH_3CH(O)CH_2]$	Propylene oxide	E. Hirota Y. Kawashima[a]	Work completed.
$C_3H_6O_2S$ $[CO_2\text{-}(CH_3)_2S]$	Carbon dioxide-dimethyl-sulfide	S. Iwano[a] Y. Kawashima[a] E. Hirota	Work in progress, two states assigned.
C_3H_7NO $[HCONHCH_2CH_3]$	*N*-Ethylformamide	K. Ohba[a] T. Usami[a] Y. Kawashima[a] E. Hirota	Second conformer assigned.
C_3H_8OS $[OHCH_2CH_2CH_2SH]$	3-Mercapto-1- propanol	Y. Tanaka[a] Y. Kawashima[a] E. Hirota	Five rotamers assigned.
$C_4H_6O_2$ $[CO\text{-}CH_3CH(O)CH_2]$	Carbon monoxide -propylene oxide	H. Mizuno[a] Y. Kawashima[a] E. Hirota	*Anti* form: normal, ^{13}CO, $C^{18}O$ species, assigned.
$C_4H_6O_3$ $[CH_3CH(CO_3)CH_2]$	Propylene carbonate	T. Kinjo[a] Y. Kawashima[a] E. Hirota	Normal, ^{13}C (4 species), ^{18}O (3 species) assigned.
$C_4H_7NO_2$ $[(CH_3CO)_2NH]$	Diacetamide	Y. Kawashima[a] R. D. Suenram[e] E. Hirota	*A* state and *E* state assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_8N_2O_2$ [$CH_3CONHCH_2CONH_2$]	N_α-Acetylglycinamide	Y. Kawashima[a] R. J. Lavrich[e] R. D. Suenram[e] E. Hirota	*A* state assigned, *E* state assignment in progress.
C_4H_9NO [$CH_3CONHCH_2CH_3$]	*N*-Ethylacetamide	Y. Kawashima[a] T. Usami[a] K. Ohba[a] R. D. Suenram[e] E. Hirota	Manuscript prepared.
$C_4H_{10}O$ [$CH_3CH_2CH_2CH_2OH$]	*n*-Butanol	T. Uzuyama[a] Y. Kawashima[a] E. Hirota	Seven rotamers assigned.
$C_4H_{10}O$ [$CH(CH_3)_2CH_2OH$]	Isobutanol	T. Uzuyama[a] Y. Kawashima[a] E. Hirota	Four rotamers assigned.
$C_4H_{10}S$ [$CH_3CH_2CH_2CH_2SH$]	*n*-Butanethiol	Y. Tanaka[a] Y. Kawashima[a] E. Hirota	Seven rotamers, one for SD assigned.
$C_4H_{10}S$ [$CH(CH_3)_2CH_2SH$]	Isobutanethiol	Y. Tanaka[a] Y. Kawashima[a] E. Hirota	Three rotamers, ^{34}S, ^{13}C species assigned.
$C_5H_{10}O$ [$CH_2CH_2CH_2CH_2CHOH$]	Cyclopentanol	Y. Kawashima[a] E. Hirota B. Carroll[f] G. Blake[f]	Work in progress
$C_5H_{12}O$ [$CH_3CH_2CH_2CH_2CH_2OH$]	*n*-pentanol	Y. Komamine[a] Y. Kawashima[a] E. Hirota	Six isomers assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{12}O$ [$H_3CCH_2CH(CH_3)CH_2OH$]	2-Methyl-1-butanol	Y. Kawashima[a] N. Koshimae[a] Y. Tanimoto[a] E. Hirota	Three conformers assigned.
$C_5H_{12}S$ [$(CH_3)_3CSCH_3$]	*Tert*-butyl methyl sulfide	R. Watanabe[a] Y. Kawashima[a] E. Hirota	Normal, ^{34}S, ^{13}C species assigned.
C_6H_{10} [$CH{=}CHCH_2CH_2CH_2CH_2$]	Cyclohexene	Y. Kawashima[a] E. Hirota	Isotopomer assigned.
$C_6H_{10}O$ [$CH_3CH_2CH_2CH{=}CHCHO$]	*Trans*-2-hexenal	R. Yokoyama[a] Y. Kawashima[a] E. Hirota	Four conformers assigned
$C_6H_{14}O$ [$CH_3CH_2CH_2CH_2CH_2CH_2OH$]	*n*-Hexanol	Y. Hosoya[a] Y. Kawashima[a] E. Hirota	Three conformers assigned
C_8H_{12} [$CH{=}CHCH_2CH(CH{=}CH_2)CH_2CH_2$]	4-Vinyl-1-cyclohexene	Y. Nakanishi[a] Y. Kawashima[a] R. J. Lavrich[e] R. D. Suenram[e] E. Hirota	Two conformers assigned.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_7H_7Cl	p-chlorotoluene $CH_3C_6H_4Cl$	Ilyushin V.[a,b]	FTMW spectrum of the ^{35}Cl and ^{37}Cl isotopologues, analysis in progress
$C_3H_4O_3$	Pyruvic acid $CH_3COCOOH$	Ilyushin V.[a,c] Alekseev E.	Measurements in the 49-149 GHz range; gs + v_t=1 state assigned, v_{24} in progress.
C_2H_5NO	Acetamide CH_3CONH_2	Ilyushin V.[d]	Measurements in the 49-660 GHz range; analysis of v_t=0,1,2 up to J=60 in progress.
$C_3H_6O_2$	Propanoic acid C_2H_5COOH	Ilyushin V.[e]	Microwave spectrum in the 150 – 540 GHz range, v_t=0,1 spectrum assigned, ms accepted by J. Mol. Spectrosc.
CH_3D_2N	deuterated methylamine CH_3ND_2	Ilyushin V.[e] Alekseev E.	Measurements in the 50-950 GHz range, spectrum assigned, analysis in progress.
$C_5H_6O_2$	2-furan-methanol	Alekseev E.[e] Dyubko S.	Microwave spectrum in 5 – 210 GHz frequency range, analysis in progress
$C_5H_4O_3$	2-furan-carboxylic acid	Alekseev E.[e]	Microwave spectra in the 5 - 240 GHz, analysis in progress
C_3H_7NO	Propionamide $CH_3CH_2CONH_2$	Ilyushin V.[e] Alekseev E.	MM+SMM spectra, internal rotation, gs and first excited skeletal torsion, ms submitted to ApJ.
$C_2H_4O_2$	Methylformate $HCOOCH_3$	Ilyushin V.[e]	gs and first excited torsional state, 34-950 GHz, v_t=2 analysis in progress
C_4H_4O	2-butynal CH_3CCCHO	Ilyushin V.[e]	Measurements in the 3-215 GHz range, analysis in progress

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
CHD_3O	deuterated methanol CD_3OH	Ilyushin V.[d]	Measurements in the 34 – 1100 GHz range, v_t=0,1 torsional states ms in preparation.
CH_3DO	deuterated methanol CH_3OD	Ilyushin V.[d]	Measurements in the 34 – 1030 GHz range, v_t=0,1,2 torsional states, analysis in progress.
C_2H_4O	Acetaldehyde CH_3CHO	Ilyushin V.[e,c]	Analysis of the ν_{10}=1 and v_t=3,4 torsional states in the 49 – 960 GHz range is in progress.
CH_4S	methyl mercaptan CH_3SH	Ilyushin V.[d]	Measurements in the 49 – 500 GHz range, v_t=3,4 and CS stretch + ∠CSH bend MW spectra analysis in progress
C_2H_4OS	O-methyl thioformate $HSCOCH_3$	Ilyushin V.[e]	gs and first excited torsional state, 150-650 GHz, analysis in progress.
C_2H_5N	Ethanimine CH_3CHNH	Ilyushin V.[e]	Measurements in the 75 – 650 GHz range, analysis of E and Z conformers in the v_t=0,1,2 torsional states in progress
C_2H_6O	Dimethylether $(CH_3)_2O$	Ilyushin V.[f] Alekseev E.	Measurements in the 34–180 GHz and 265–400 GHz, v_t=0,1,2 assigned up to J=60, ms in preparation.
$C_2H_4O_2$	Acetic acid CH_3COOH	Ilyushin V.	New measurements in the 145–183 GHz and 265–400 GHz, analysis of the v_t=3,4 states in progress.

[a] In collaboration with Z. Kisiel, Institute of Physics, Polish Academy of Sciences, Poland
[b] In collaboration with J.-U. Grabow, Institut für Physikalische Chemie und Elektrochemie, Wilhelm-Gottfried-Leibniz-Universität Hannover, Germany
[c] In collaboration with I. Kleiner, H.V.L. Nguyen, LISA CNRS, Université Paris 12 et Paris 7, France
[d] In collaboration with H.S.P. Müller, S. Schlemmer, I. Physikalisches institut universität zu Köln, Germany
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Social Media Handles and Platforms:

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_2N_2O	dihydrogen – nitrous oxide (*o*H_2-, *p*H_2-, *p*D_2-N_2O)	J. N. Landry	Manuscript in preparation.[1]
$H_{2N}N_2O$	$(dihydrogen)_N$ – nitrous oxide, *N*=2-12 (*o*H_2; *p*H_2; ^{15}N)	J. N. Landry	Manuscript in preparation.
H_3NNe	neon – ammonia (inversion transitions)	J. M. Michaud L. E. Downie P. Raston	Spectra collected; assignment in progress.
CFHeN	helium – fluorine cyanide	M. Morissey C. Knapp	PES calculated; spectra collected.
$C_2H_6O_6$	oxalic acid – $(water)_2$	E. Schnitzler	Manuscript near completion.
$C_2H_{10}O_5$	acetic acid – $(water)_3$	E. Schnitzler N. Seifert	ab initio calculations completed; assignment in progress.
$C_3H_2F_6N_2O$	hexafluoro-2-propanol – N_2	S. Oswald N. Seifert B. Wu	Spectra assigned; hyperfine analyses completed; ms near completion.[2,4]
$C_3H_3F_5O$	pentafluoro-1-propanol	B. Wu S. Oswald N. Seifert	Detailed fits in progress.[2]
$C_3H_3F_5NeO$	pentafluoro-1-propanol – Ne	B. Wu S. Oswald N. Seifert	Tunneling splittings observed; fits in progress.[2]
$C_3H_4F_6O$	hexafluoro-2-propanol – H_2O	B. Wu N. Seifert S. Oswald	new conformer assigned. HOD/DOH/D_2O analyses completed.[2]

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_5F_5O_2$	pentafluoro-1-propanol – water	B. Wu N. Seifert S. Oswald	Two conformers assigned; isotopic analyes completed; manuscript in preparation.[2]
$C_3H_8O_2$	acetone – water	J. Gao J. Thomas	Manuscript near completion.[2]
$C_3H_8O_3$	hydroxyacetone – water	E. Schnitzler N. Seifert J. Thomas	ab initio calculations completed; assignment in progress.
$C_4H_4N_2O$	4-hydroxypyrimidine	J. Gao	Two tautomers identified.
$C_4H_4O_2$	2-furanol	X. Dong N. Seifert	ab initio calculations completed; assignment in progress.
$C_4H_6N_2O_2$	4-hydroxypyrimidine – water	J. Gao	ab initio calculations completed; assignment in progress.
$C_4H_6O_3$	2-furanol – water	X. Dong N. Seifert	ab initio calculations completed; assignment in progress.
$C_4H_9F_3O_2$	4,4,4-trifluorobutanol – water	T. Lu F. Xie	Two conformers assigned; others in progress.[2]
$C_4H_{11}F_3O_3$	4,4,4-trifluorobutanol – $(water)_2$	T. Lu F. Xie	Four conformers assigned; others in progress.[2]
$C_4H_{13}F_3O_4$	4,4,4-trifluorobutanol – $(water)_3$	T. Lu F. Xie	Two conformers assigned; others in progress.[2]
$C_4H_{15}F_3O_5$	4,4,4-trifluorobutanol – $(water)_4$	T. Lu F. Xie	Two conformers assigned; others in progress.[2]
$C_4H_{17}F_3O_6$	4,4,4-trifluorobutanol – $(water)_5$	T. Lu F. Xie	Conformational search complete; Assignment in progress.[2]
$C_5H_5He_NN$	pyridine – He_N (N=1-19)	A. Hazrah N. Seifert	Spectra assigned; manuscript in preparation.[5]
$C_5H_5N_3$	pyridine – nitrogen	C. Tanjaroon	Manuscript in preparation.
C_5H_7N	pyridine – hydrogen	C. Tanjaroon	Manuscript in preparation.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{10}O_3$ ($C_5H_8O_2$-H_2O)	acetylacetone – water	J. Gao	ab initio calculations completed; partial assignment.
$C_5H_{11}N$	2-methylpyrrolidine	T. Lu A. Harah	Two conformers assigned; ab initio calculations completed.
$C_5H_{13}NO$ ($C_5H_{11}N$-H_2O)	2-methylpyrrolidine – water	T. Lu A. Harah	Spectral assignment underway; ab initio calculations completed.
$C_6H_6F_6O_2$ $(C_3H_3F_3O)_2$	Trifluoromethyl oxirane dimer	H. Leung M. Marshall N. Seifert	Spectra assigned; manuscript in preparation.[2,6]
$C_6H_6F_{10}O_2$ $(C_3H_3F_5O)_2$	pentafluoro-1-propanol dimer	S. Oswald B. Wu N. Seifert	Five dimers assigned; manuscript in preparation.[2]
$C_6H_{10}O_3$ ($C_6H_8O_2$-H_2O)	1,3-cyclohexanedione – H_2O	J. Gao	ab initio calculations completed; assignment in progress.
$C_6H_{12}O_4$ $((C_3H_6O_2)_2)$	$(hydroxyacetone)_2$	E. Schnitzler N. Seifert J. Thomas	ab initio calculations completed; assignment in progress.
$C_6H_{16}O_6$ $((C_3H_8O_3)_2)$	glycerol dimer $(propane\text{-}1,2,3\text{-}triol)_2$	J. Ma F. Xie N. Seifert	Several dimers assigned.[2]
$C_7H_5He_NN$ (N=1-8) (C_7H_5N-He_N)	benzonitrile – He_N (N=1-8)	A. Hazrah N. Seifert	Spectra assigned; manuscript in preparation.[5]
$C_7H_8O_2$	3-methylcatechol	A. Hazrah	ab initio calculations completed; two monomers assigned.
$C_7H_{10}O_3$ ($C_7H_8O_2$-H_2O)	3-methylcatechol – water	A. Hazrah	ab initio calculations completed; monohydrate assigned.
$C_7H_{12}O_2$	cyclohexanecarboxylic acid	T. Lu A. Hazrah F. Xie	One conformer assigned; others in progress.[2,7]
$C_7H_{14}O_3$ ($C_7H_{12}O_2$)-H_2O	cyclohexanecarboxylic acid – water	T. Lu A. Hazrah F. Xie	One conformer assigned; others in progress.[2,7]
$C_8H_8O_4$	vanillic acid	M. Al-Jabiri	Spectra assigned; ab initio calculations completed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_8H_{10}O_3$	*m*-toluic acid – water	E. Schnitzler N. Seifert M. Al-Jabiri	ab initio calculations completed; assignment in progress.
$C_8H_{10}O_5$	vanillic acid – water	M. Al-Jabiri	Spectra assigned; ab initio calculations completed.
$C_8H_{11}NO_3$	methyl salicylate – ammonia	J. Thomas	ab initio calculations completed; assignment in progress.[2]
$C_8H_{12}F_{12}O_4$	trifluoroethanol tetramer	J. Thomas N. Seifert	Assignment in progress.[2]
$C_8H_{14}F_6O_2$	4,4,4-trifluorobutanol dimer	T. Lu F. Xie	Five conformers assigned; manuscript near completion.[2]
$C_9H_{10}O_4$	3,4-dimethoxybenzoic acid (veratric acid)	M. Al-Jabiri	Spectra assigned; ab initio calculations completed.
$C_9H_{12}O_5$	veratric acid – water	M. Al-Jabiri	Spectra assigned; ab initio calculations completed.
$C_{10}H_8O$	2-naphthalenethiol	A. Hazrah R. Speelman	Two conformers assigned; manuscript in preparation
$C_{10}H_8O$	1-, 2-naphtol	A. Hazrah N. Seifert	Manuscript near completion.
$C_{10}H_8NeO$	1-, 2-naphtol – Ne	A. Hazrah N. Seifert	ab initio calculations completed; assignment completed.
$C_{10}H_{10}O_2$	1-, 2-naphtol – water	A. Hazrah N. Seifert	ab initio calculations completed; assignment completed.
$C_{10}H_{16}O$	carveol	A. Hazrah	Six conformers assigned.
$C_{10}H_{18}O$	α-pinene – water	A. Hazrah	Manuscript complete.
$C_{10}H_{18}O_2$	Carveol - water	A. Hazrah	Three conformers assigned.
$C_{10}H_{18}O_2$	perillyl alcohol – water	F. Xie N. Seifert	Assignment in progress.[2]

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{10}H_{18}O_4$	pinonic acid – water	A. Hazrah E. Schnitzler	Monomer assigned.
$C_{12}H_{14}O_4$	diethyl phthalate	R. Speelman A. Hazrah H. T. Tran N. Seifert	Four conformers assigned.
$C_{20}H_{22}O_3$	Avobenzone	M. Al-Jabiri	ab initio calculation completed.

[1] In collaboration with Professor Yasuki Endo, National Chiao Tung University, Taiwan.
[2] In collaboration with Professor Yunjie Xu, University of Alberta, Canada.
[3] In collaboration with Dr. Isabelle Peña, Universidad de Valladolid, Spain.
[4] In collaboration with Professor Martin Suhm, University of Göttingen, Germany.
[5] In collaboration with Professor Paul Raston, James Madison University, USA.
[6] In collaboration with Professor Helen Leung and Professor Mark Marshall, Amherst College, USA.
[7] In collaboration with Professor Q. Gou and Professor G. Feng, Chongqing University, China.
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Social Media Handles and Platforms:

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2F_6O_2$	Bis(trifluoromethyl) peroxide	Kang; Novick	Presentation in ISMS
	^{13}C isotopologue	Kang; Novick	Searching for ^{18}O-iso
C_2F_2N	1,1-difluorocyanomethyl radical	Kang; Novick	Spectrum assigned Presentation in ISMS
C_3F_6O	Hexafluoropropylene	Kang; Shipman; Pate	Spectrum assigned Presentation in ISMS
C_4DNO_2	Deuterated T-shaped carbon dioxide cyanoacetylene complex	Kang; Novick; Kukolich	Transitions observed working on hf structures
C_3HN_3	Linear nitrogen-cyanoacetylene complex	Kang; Novick	Spectrum assigned working on hf structures
C_6HDN_2	HCCCN---DCCCN complex	Kang; Niovick; Kukolich	Spectrum assigned working on hf structures
C_6HDN_2	DCCCN---HCCCN complex	Kang; Novick; Kukolich	Spectrum assigned working on hf structures
$C_6D_2N_2$	DCCCN dimer complex	Kang; Novick; Kukolich	Spectrum assigned working on hf structures
C_3F_6O	Perfluoromethylvinylether	Kang; Brown; Pate	Spectrum assigned
$C_7H_3F_5O$	2,3,4,5,6-perfluoroansiol	Kang; Pate	Spectrum assigned
$C_3H_{10}Si$	Trimethylsilane	Kang; Novick	Spectrum assigned Manuscript in preparation
$C_5H_{10}Si$	Trimethylsilylacetylene	Kang; Novick	Spectrum assigned Presentation in ISMS Manuscript in preparation
$C_7H_{10}Si$	Trimethylsilyldiacetylene	Kang; Novick	Spectrum assigned Presentation in ISMS Manuscript in preparation
C_6H_9NSi	Trimethylsilylacetylene cyanide	Kang; Novick	Spectrum assigned Presentation in ISMS Manuscript in preparation
C_3H_3NSi	Silylacetylene cyanide	Kang; Novick	Spectrum observed Work in progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
BH_4Li	Lithium tetrahydroborate $LiBH_4$	Y. Kawashima E. Hirota[a]	Excited vibrational states, work in progress.
BH_4K	Potassium tetrahydroborate KBH_4	Y. Kawashima E. Hirota[a]	Excited vibrational states, work almost completed.
CH_6O	Methane-water CD_4--H_2O CD_4--HDO CD_4--D_2O	Y. Kawashima L.H.Coudert[c]	Manuscript prepared
$C_2H_6N_2O$	Dinitrogen-dimethyl ether N_2-$(CH_3)_2O$	Y. Kawashima E. Hirota[a]	Spectra assigned for N_2, $N^{15}N$, $^{15}N_2$ species.
C_3H_5NO	Acrylamide CH_2=$CHCONH_2$	T. Usami Y. Kawashima	Isotopomers assigned
$C_3H_6N_2O_2$	Malonamide $NH_2COCH_2CONH_2$	T. Usami E. Hirota[a] R. D. Suenram[b]	Manuscript prepared.
C_3H_6O	Propylene oxide $CH_3CH(O)CH_2$	E. Hirota[a] Y. Kawashima	Work completed.
$C_3H_6O_2S$	Carbon dioxide-dimethyl-sulfide CO_2-$(CH_3)_2S$	Y. Kawashima S. Iwano E. Hirota[a]	Work in progress, two states assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_7NO	*N*-Ethylformamide $HCONHCH_2CH_3$	K. Ohba T. Usami Y. Kawashima E. Hirota[a]	Second conformer assigned.
C_3H_8OS	3-Mercapto-1- propanol $OHCH_2CH_2CH_2SH$	Y. Tanaka Y. Kawashima E. Hirota[a]	Six rotamers assigned.
$C_4H_6O_2$	Carbon monoxide -propylene oxide $CO\text{-}CH_3CH(O)CH_2$	Y. Kawashima H. Mizuno E. Hirota[a]	*Anti* form: normal, ^{13}CO, $C^{18}O$ species, assigned.
$C_4H_6O_3$	Propylene carbonate $CH_3CH(CO_3)CH_2$	T. Kinjo Y. Kawashima E. Hirota[a]	Normal, ^{13}C (4 species), ^{18}O (3 species) assigned.
$C_4H_7NO_2$	Diacetamide $(CH_3CO)_2NH$	Y. Kawashima R. D. Suenram[b] E. Hirota[a]	*A* state and *E* state assigned.
$C_4H_8N_2O_2$	N_α-Acetylglycinamide $CH_3CONHCH_2CONH_2$	Y. Kawashima R. J. Lavrich[d] R. D. Suenram[b] E. Hirota[a]	*A* state assigned, *E* state assignment in progress.
C_4H_9NO	*N*-Ethylacetamide $CH_3CONHCH_2CH_3$	T. Usami K. Ohba Y. Kawashima R. D. Suenram[b] E. Hirota[a]	Manuscript prepared.
$C_4H_{10}O$	*n*-Butanol $CH_3CH_2CH_2CH_2OH$	T. Uzuyama Y. Kawashima E. Hirota[a]	*J. Phys. Chem. A* **125** (2021) 1166.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_{10}O$	Isobutanol $CH(CH_3)_2CH_2OH$	T. Uzuyama Y. Kawashima E. Hirota[a]	*J. Phys. Chem. A* **125** (2021) 1166.
$C_4H_{10}S$	*n*-Butanethiol $CH_3CH_2CH_2CH_2SH$	Y. Tanaka Y. Kawashima E. Hirota[a]	*J. Phys. Chem. A* **125** (2021) 1166. assigned.
$C_4H_{10}S$	Isobutanethiol $CH(CH_3)_2CH_2SH$	Y. Tanaka Y. Kawashima E. Hirota[a]	*J. Phys. Chem. A* **125** (2021) 1166.
$C_5H_{10}O$	Cyclopentanol $CH_2CH_2CH_2CH_2CHOH$	Y. Kawashima E. Hirota[a] B. Carroll[f] G. Blake[f]	Work in progress
$C_5H_{12}O$	*n*-pentanol $CH_3CH_2CH_2CH_2CH_2OH$	Y. Kawashima Y. Komamine E. Hirota[a]	Six isomers assigned.
$C_5H_{12}O$	2-Methyl-1-butanol $H_3CCH_2CH(CH_3)CH_2OH$	Y. Kawashima N. Koshimae Y. Tanimoto E. Hirota[a]	Three conformers assigned.
$C_5H_{12}S$	*Tert*-butyl methyl sulfide $(CH_3)_3CSCH_3$	Y. Kawashima R. Watanabe E. Hirota[a]	Normal, ^{34}S, ^{13}C species assigned.
C_6H_6O	Dipropargyl ether $(HCCCH_2)_2O$	T. Usami Y. Kawashima	Work almost completed
C_6H_6S	Thiophenol C_6H_5SH	R. Jono[e] A. Hino[e] M. Onda[e] Y. Kawashima	Normal, D, ^{34}S, ^{13}C species assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_6H_{10}	Cyclohexene $CH{=}CHCH_2CH_2CH_2CH_2$	Y. Kawashima E. Hirota[a]	Isotopomer assigned.
$C_6H_{10}O$	*Trans*-2-hexenal $CH_3CH_2CH_2CH{=}CHCHO$	R. Yokoyama Y. Kawashima E. Hirota[a]	Four conformers assigned
$C_6H_{10}O_2$	γ-Hexanolactone $O(CO)CH_2CH_2CH(CH_2CH_3)$	T. Takimoto[e] N. Kuze[e] Y. Kawashima	Three conformers assigned
$C_6H_{14}O$	*n*-Hexanol $CH_3CH_2CH_2CH_2CH_2CH_2OH$	Y. Hosoya Y. Kawashima E. Hirota[a]	Three conformers assigned
C_8H_{12}	4-Vinyl-1-cyclohexene $CH{=}CHCH_2CH(CH{=}CH_2)CH_2CH_2$	Y. Nakanishi Y. Kawashima R. J. Lavrich[d] R. D. Suenram[b] E. Hirota[a]	Two conformers assigned.

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[b] National Institute of Standards and Technology
[c] Universite Paris-Sud
[d] United States Environmental Protection Agency
[e] Sophia University
[f] California Institute of Technology

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FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
BrH_3O	Water...hydrogen bromide (H_2O...HBr)	BP, OD, LP, ZK, *Bri*	FTMW: isotopic work+dipole moment - completed, ms. in prep.
$Cl_2H_6O_2$	Water...hydrogen chloride (2/2) $(H_2O)_2(HCl)_2$	*Vir*, ZK	Assigned in chirped pulse FTMW, ms. in prep.
ClH_7O_3	Water...hydrogen chloride (3/1) $(H_2O)_3HCl$	*Vir*, ZK	Assigned in chirped pulse FTMW, ms in prep.
$H_{12}O_6$	Water hexamer $(H_2O)_6$	*Vir*, ZK	All 64 combinations of $^{16}O/^{18}O$ for each of three hexamer conformers observed and analysed.
FH_3O	Water...hydrogen fluoride (H_2O...HF)	ZK, *NN*	MMW spectrum, new analysis
$ArClH_3O$	(Water...hydrogen chloride)...argon (H_2O...HCl)...Ar	EBJ, ZK, LP, *Vir*	FTMW (Balle-Flygare and chirped pulse): parent+D+^{37}Cl+^{18}O, dipole moment, ms. in prep.
CH_4N_2O	Urea $(NH_2)_2C=O$	*Koln*, *Wri*, ZK	Lab spectroscopy of g.s.+ excited vibrational states, in prep.
C_4H_7Cl	1,3-butadiene...hydrogen chloride (C_4H_6...HCl)	ZK, *Bri*	FTMW: partial assignment
$C_5H_8N_2O$	2-aminopyridine...H_2O cyclic dimer	AK, EBJ, ZK, LP,*Rennes*	FTMW: nearing completion, more isotopic species measured
C_2Cl_3N	Trichloroacetonitrile Cl_3CCN	ZK, LP, EBJ	FTMW: hyperfine from 4 nuclei resolved and fitted
$C_2Cl_4F_2$	CFC-112a (Cl_3CCClF_2)	*Bilbao*, EBJ, ZK	Chirped pulse+cavity FTMW, 4xCl hyperfine and isotopic species analysed
C_2H_3NO	Methyl isocyanate CH_3NCO	*Val*, *Rennes*, ZK	Work continuing.

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
C_2H_3NS	Methyl isothiocyanate CH_3NCS	*Ohio*, ZK	FASSST spectrum + MME partially analysed
$C_2H_6N_2O$	Glycine amide $H_2NCH_2CONH_2$	ZK, LP, *Rennes, Val*	MMW, inversion, vibr.satellites: ms in prep.
C_3H_3N	Acrylonirile $H_2C=CHCN$	*Par*, ZK, LP	FTIR+MMW+SMM, excited vibr. states >600 cm^{-1}, ms in prep.
C_3H_5N	Ethyl cyanide Propionitrile C_2H_5CN	ZK, *Goddard*	MMW+SMM, $\nu_{13}\leftrightarrow\nu_{21}$ perturbations, Titan observations, *JMS* **372**, 111324 (2020)
C_2H_7N	Ethylamine $C_2H_5NH_2$	*Ohio*, AK, ZK, *Koln*	Spectrum up to 1 THz, torsion + inversion analysis in prog.
$C_3H_8O_4$	LacticAcid+H_2O	*Vir*, ZK,EBJ	Chirped pulse FTMW: clusters of lactic acid with H_2O and two lactide conformers, ms. in prep.
$C_3H_{10}O_5$	LacticAcid+$(H_2O)_2$	*Vir*, ZK,EBJ	Chirped pulse FTMW: clusters of lactic acid with H_2O and two lactide conformers, ms. in prep.
$C_3H_{12}O_6$	LacticAcid+ $(H_2O)_3$	*Vir*, ZK,EBJ	Chirped pulse FTMW: clusters of lactic acid with H_2O and two lactide conformers, ms. in prep.
$C_6H_8O_4$	Lactide	*Vir*, ZK,EBJ	Chirped pulse FTMW: clusters of lactic acid with H_2O and two lactide conformers, ms. in prep.
C_3H_8O	*n*-propanol $CH_3CH_2CH_2OH$	ZK, *Ohio*, *JPL*	*T* series of conformers: in progress
CH_2Cl_2	Methylene chloride	OD, ZK, *Bold*	FTMW: dipole moment from Stark effect under resolved hfs from two quadrupolar nuclei
C_3H_2ClN	2-chloroacrylonitrile	OD, ZK, *Bold*	FTMW: dipole moment from Stark effect under resolved hfs from two quadrupolar nuclei
$C_4H_4N_2$	Pyrimidine	OD, ZK, *Bold*	FTMW: dipole moment from Stark effect under resolved hfs from two quadrupolar nuclei
$C_5H_6N_2$	2-Aminopyridine	ZK, LP	MMW+FTMW: c.d., hyperfine, g.s. + inversion satellite
C_5H_8	Isoprene	ZK, LP, *JPL, Par, Har*	MMW+FTMW+FTIR: parent+satellites, ms in prep.

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_5H_{12}O$	Neopentyl alcohol $(CH_3)_3CCH_2OH$	LP, ZK, *Goet*	MMW+FTMW: two conformers assigned
$C_6H_4Cl_2$	1,2-dichlorobenzene	ZK, LP, EBJ, *CQ*	Chirped pulse FTMW+MMW, g.s.+isotopes+satellites+structure, *JMS* **374**, 111380 (2020)
C_7H_5N	Benzonitrile	*Wisc*, ZK	SEcond quanta of the lowest vibrational modes, MMW + WG FTMW, in prog.
C_7H_7Cl	p-chlorotoluene	*Kha*, *Han*, ZK,	Low-barrier sixfold internal rotation with hyperfine, in prog.
C_8H_7N	p-Cyanotoluene	EBJ, ZK, LP	Cavity, chirped and WG FTMW:+ MMW, ms in prep,
$C_{10}H_{16}O$	Thujone	*Hamb*, ZK	Chirped pulse FTMW, heavy atom molecular backbones from ^{13}C and ^{18}O in natural abundance. Several cluster conformers assigned.
$C_{10}H_{18}O_2$	Thujone+H_2O	*Hamb*, ZK	Chirped pulse FTMW, heavy atom molecular backbones from ^{13}C and ^{18}O in natural abundance. Several cluster conformers assigned.
$C_{10}H_{20}O_3$	Thujone+$(H_2O)_2$	*Hamb*, ZK	Chirped pulse FTMW, heavy atom molecular backbones from ^{13}C and ^{18}O in natural abundance. Several cluster conformers assigned.
$C_{10}H_{15}F$	1-fluoro-adamantane	BP, ZK, LP, *Bri*	MMW + FTMW, electric dipole moment, completed
$C_{10}H_{15}Cl$	1-chloro-adamantane	BP, ZK, LP, *Bri*	MMW + FTMW, electric dipole moment, completed
$C_{10}H_{15}Br$	1-bromo-adamantane	BP, ZK, LP, *Bri*	MMW + FTMW, electric dipole moment, completed
$C_{10}H_{15}I$	1-iodo-adamantane	BP, ZK, LP, *Bri*	MMW + FTMW, electric dipole moment, completed
$ClNO_3$	Chlorine nitrate $ClONO_2$	*Ohio*, ZK, EBJ	FASSST spectrum: further vibrational satellites in prog.
HN_3	Hydrazoic acid	*Pra, Wisc*, ZK	Broadband MMW+SMM: analysis of higher states in prog.
ANALYSIS/DATABASE	Programs for ROtational SPEctroscopy- PROSPE **http://info.ifpan.edu.pl/~kisiel/prospe.htm**		

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
ANALYSIS/DATABASE	Worked examples of various fitting programs: **http://info.ifpan.edu.pl/~kisiel/data.htm**		

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_4O	Methanol (CH_3OH, $^{13}CH_3OH$ $CH_3{}^{18}OH$, CH_3OD)	F. Matsushima K. Kobayashi	ground and CO stretching vibrational state, far infrared spectrum and Zeeman effect Manuscript on the Zeeman effect (J. Mol. Spectroscop. 377, 111420 (2021))
CH_4S	Methanethiol (CH_3SH, CD_3SH)	K. Kobayashi	mm-wave spectrum 1st and 2nd excited torsional states assigned
CH_5N	Methylamine (CH_3NH_2)	K. Kobayashi	mm-wave spectrum prep. spectrum atlas
$C_2H_4O_2$	Methyl formate ($HCOOCH_3$, $DCOOCH_3$, $H^{13}COOCH_3$ $HCOO^{13}CH_3$)	K. Kobayashi[1,2]	$HCOOCH_3$, two new vibrational states (one state was assigned to ν_{12}) assigned far-infrared spectrum
C_2H_6O	Ethanol (C_2H_5OH)	K. Kobayashi	spectrum assigned
C_2O	Ketenylidene (^{13}CCO, $C^{13}CO$, $^{13}C^{13}CO$, $CC^{18}O$)	K. Kobayashi[3]	normal species extended to 715 GHz spectrum assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_3NO	Isoxazole Oxazole	K. Kobayashi[4]	ground state assigned in preparation of the manuscript
C_3H_3NS	Isothiazole	K. Kobayashi[4]	ground state assigned
C_3H_5N	Ethyl cyanide (CH_3CH_2CN)	Y. Fukuyama[5] K. Kobayashi H. Odashima6	prep. spectrum atlas
$C_3H_6O_2$	Methyl Acetate (CH_3COOCH_3)	K. Kobayashi[6] I. Kleiner[7]	mm-wave spectrum
C_3H_8O	Ethyl methyl ether ($CH_3OC_2H_5$)	K. Kobayashi[1,2]	mm-wave spectrum ground and excited states assigned (skeletal torsion vt = 3) Manuscript on the $\nu_{30} = 2$ state was accepted to J. Mol. Spectroscop. (doi.org/10.1016/j.jms.2021.111443)
C_4H_4S	Thiophene	K. Kobayashi[4]	40-170 GHz spectrum assigned
CaH	Calcium Monohydride	F. Matsushima, K. Kobayashi	Terahertz spectra assigned
H_2N	Amidogen (NHD)	K. Kobayashi[8]	Terahertz spectra in preparation of the manuscript

1. In collaboration with M. Fujitake and N. Ohashi (Kanazawa University, Japan).
2. In collaboration with D. W. Tokaryk (University of New Brunswick, Canada) and Brant E. Billinghurst (Canadian Light Source. Inc., University of Saskatchewan, Canada).
3. In collaboration with T. Furuya and S. Saito (Fukui University, Japan) for mm spectrum and with Y. Sumiyoshi and Y. Endo (University of Tokyo, Japan) for FT−MW spectrum.
4. In collaboration with B. J. Esselman (University of Wisconsin-Madison, Madison, USA.).
5. SPring-8/JASRI, Sayo-cho, Sayo-gun, Hyogo, 679-5148, Japan.
6. Department of Physics, Meizi University, Mita Kawasaki 214-8571, Japan.
7. In collaboration with S. Shipman (New College of Florida, USA).
8. Laboratoire Interuniversitaire des Systemes Atmospheriques (LISA), Creteil, France.
9. In collaboration with H. Ozeki (Toho University, Japan)

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FORMULA	**NAME OF COMPOUND**	**NAMES OF INVESTIGATORS**	**PRESENT STAGE OF PROGRESS**
$C_2H_6N_2O_6$	^{15}N Formamidinium Formate	Z. Zhou, C. Peureux, R. A. Aitken, and S. G. Kukolich	*J. Mol. Spectrosc*. **378**, 111478 (2021)
$C_5H_6N_2$	2-aminopyridine	Z. Zhou, A. Daly, and S. G. Kukolich	*J. Mol. Spectrosc*. **378**, 111457 (2021)
$C_6H_3MnO_6$	Methylmanganese Pentacarbonyl	C. Tanjaroon, D. D. Mills, C. A. Jiménez Hoyos, S. G. Kukolich	Chem Phys Letters **762**, 138151 (2021)
$C_2H_6N_2O_6$	Formamidinium Formate	C. A. Jiménez Hoyos, Z. Zhou, S. G. Kukolich	*J. Mol. Spectrosc.* **372**, 11131, July 1 (2020)
$C_6H_3MnO_6$	Methylmanganese Pentacarbonyl	C. Tanjaroon, Z. Zhou, D. Mills, K. Keck, and S. G. Kukolich	*Inorganic Chemistry* **59**, 9, 6432–6438
$C_2H_6N_2O_6$	Formamidinium Formate	Z. Zhou, R. Aitken, C. Cardinaud, A. Slawin, H. Wang, A. Daly, M. Palmer, S. Kukolich	*J. Chem. Phys.* **150**, 094305 (2019)
$C_5H_7NO_3$	2-hydroxy pyridine – Formic acid dimer	Z. Zhou, A. Daly, and S. G. Kukolich	New calculations and spectra measured and analysis in progress.
$C_{10}H_8O_4$	Benzoic Acid - propiolic Acid –Dimer	Lily Taylor, Adam Daly	Scanning in progress Measured lines

FORMULA	NAME OF COMPOUND	NAMES OF INVESTIGATORS	PRESENT STAGE OF PROGRESS
$C_9H_{12}FeO$	Dibutadiene Iron carbonyl	David Mills, Stephen G. Kukolich	Scanning in progress Measured lines
CH_5O_4Re	Methyltrioxorhenium Water	Zunwu Zhou, Adam Daly, Stephen Kukolich	New calculations and spectra measured and analysis in progress.
$C_8H_7FO_4$	4-Fluorobenzoic Acid Formic Acid dimer	Zunwu Zhou, Adam Daly, Stephen Kukolich	New calculations and spectra measured and analysis in progress.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CF_2NOPS	Difluorothiophosphoryl isocyanate	S. Watanabe N. Kuze	Spectrum assigned.
CF_2NPS_2	Difluorothiophosphoryl isothiocyanate	S. Watanabe N. Kuze	Spectrum assigned.
C_2H_5NO	Acetaldehyde oxime	O. Ohashi N. Kuze	Observation of hyper-fine structure
$C_2H_3N_3O_2$	Methyl azidoformate	S. Watanabe N. Kuze	Spectrum assigned.
$C_3H_3NO_3$	Methoxycarbonyl isocyanate	S. Watanabe N. Kuze	Manuscript in prep.
C_3H_5NO	Ethyl cyanate	T. Sakaizumi N. Kuze	Manuscript in prep.
C_3H_5NO	1–Nitrosopropene	T. Sakaizumi N. Kuze	V_3 (v=1) determined. Manuscript in prep.
C_4H_7NO	2–Pyrrolidone	N. Kuze	Manuscript in prep.
C_4H_7NO	Cyclobutanone oxime	E. Sato N. Kuze	Manuscript in prep.
C_4H_9NO	*n*-Butyraldehyde oxime	O. Ohashi N. Kuze	Observation of hyper-fine structure
$C_5H_{12}S$	1-Pentanethiol	N. Kuze	Spectrum assigned. Normal and *d*-species

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_{11}NO$	*ε*-Caprolactam	N. Kuze	Manuscript in prep.
$C_6H_{10}O$	*cis*-3-hexenal	R. Ozawa	Spectrum assigned.
$C_6H_{10}O$	*trans*-3-hexenal	R. Ozawa	Spectrum assigned.
$C_6H_{12}O_2$	Methyl Trimethylacetate	N. Kuze	Spectra for ^{13}C species were assigned.
$C_6H_{11}NO$	*γ*-Hexanolactone	T. Takimoto	Spectrum assigned.
$C_9H_{10}O_2$	Benzyl acetate	N. Kuze	Spectrum assigned.

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FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
AuH_3IN	$H_3N\cdots Au–I$	D. Bittner, S.L. Stephens*	Spectrum assigned.
BrH_3O	$H_2O\cdots H–Br$	A. P. Suckley	*Chem. Phys. Lett.*, **150**, 153 (1988). Further work: Z. Kisiel.
CClFPt	FCPtCl	D. Bittner, G. Cooper, C. Medcraft*	Spectra of isotopologues assigned.
CF_2Pt	FCPtF	D. Bittner, G. Cooper, C. Medcraft*	Spectra of isotopologues assigned.
CH_3F_3IP	$H_3P\cdots I–CF_3$	S. L. Stephens*	Spectrum assigned.
CH_5F	$CH_4\cdots H–F$	D.G. Lister	With F.J. Lovas at NIST.
C_2H_2AgI	$C_2H_2\cdots Ag–I$	S. L. Stephens*	Spectrum assigned.
C_2H_2CuF	$C_2H_2\cdots Cu–F$	S. L. Stephens, D. P. Zaleski*	Spectrum assigned, isotopic work
C_2H_2CuI	$C_2H_2\cdots Cu–I$	S. L. Stephens, D Bittner*	Spectrum assigned.
C_2H_4AuI	$C_2H_4\cdots Au–I$	S. L. Stephens, M. Sprawling, D. P.Zaleski*	Spectra of isotopologues assigned
C_2H_4CuF	$C_2H_4\cdots Cu–F$	S. L. Stephens*	Spectrum assigned.
C_2H_4CuI	$C_2H_4\cdots Cu–I$	S. L. Stephens*	Spectrum assigned.
C_2H_5BrS	$(CH_2)_2S\cdots H–Br$	S. Batten	^{13}C and ^{34}S species assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_4ArN_2$	Imidazole···Ar	E. Gougoula*	Manuscript in preparation
C_3H_9AgIN	$(CH_3)_3N$···Ag–I	D. Bittner, S. L. Stephens*	Assigned. Manuscript in preparation
$C_3H_9F_6NS$	$(CH_3)_3N$···SF_6	D. Bittner*	Spectrum assigned.
C_4H_6O	$(CH_2)_2O$···HC≡CH	S. Batten	All singly substituted ^{13}C species assigned
$C_4H_8N_4O$	Urea···imidazole	S. Blanco (Valladolid), J. C. Mullaney, C. Medcraft*	Assigned, isotopic work.
$C_4H_9NS_2$	$(CH_3)_3N$···S=C=S	E. Gougoula, C. Medcraft*	Spectra of isotopologues assigned
FIPt	FPtI	D. Bittner, G. Cooper, C. Medcraft*	Spectra of isotopologues assigned.
H_3IS	H_2S···H–I	A.P. Suckley	*J.Chem.Phys,*,**153**, 204301 (2020).

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FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_3H_2O_5S$	Propiolic Sulfuric Anhydride ($HC{\equiv}C\text{-}COO\text{-}SO_2OH$)	C.J. Smith A.K. Huff R.M. Ward K.R. Leopold	*J. Phys. Chem. A* **2020**, 124, 601. (Also contains statistical thermodynamics and a review of carboxylic sulfuric anhydrides
$C_{10}H_{18}O_3$	Pivalic Anhydride $(CH_3)_3CCOOCOC(CH_3)_3$	N. Love A.K. Huff K.R. Leopold	*J. Mol. Spectrosc*. **2020**, 370, 111294.
O_5S_2	SO_3-SO_2 complex	A.K. Huff R.M. Ward K.R. Leopold	*J. Mol. Spectrosc.* **2020**, 371, 111327.
$C_4H_{10}F_3NO_3S$	Trimethylammonium Triflate Ion Pair	N. Love A.K. Huff K.R. Leopold	Submitted, *J. Phys. Chem. A*
CHF_3O_3S	Triflic Acid	A.K. Huff C.J. Smith N. Love K. R. Leopold	Parent, ^{34}S, D isotopologues; Tunneling states observed; Manuscript in preparation.
$CH_3F_3O_4S$	Triflic acid - water complex	A.K. Huff N. Love K.R. Leopold	Parent, ^{34}S, D_2O, DOH; D-triflic-DOH Tunneling states observed; Manuscript in preparation
$CH_5O_5F_3S$	Triflic acid – $(H_2O)_2$ Complex	A.K. Huff N. Love K.R. Leopold	Parent; ^{34}S; $(D_2O)_2$.
$CH_7F_3O_6S$	Triflic acid – $(H_2O)_3$ Complex	A.K. Huff N. Love K.R. Leopold	Spectrum assigned and fit.

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_2HF_6NO_4S_2$	Trifluoromethane-sulfonimide	N. Love K.R. Leopold	Spectrum assigned and fit.
CH_4O_3S	Methanesulfonic acid	A.K. Huff K.R. Leopold	Parent, ^{34}S and OD isotopologue observed and fit.
CH_6O_4S	Methanesulfonic Acid – H_2O Complex	A.K. Huff N. Love K.R. Leopold	Parent, D_2O, d-MSA-D_2O complex.
$C_2H_6O_2S$	Thioacetic acid – water complex	A.K. Huff C.J. Smith K.R. Leopold	Three isotopologues; Manuscript in preparation.
$C_4H_6O_3$	Acetic anhydride	N. Love K.R. Leopold	*trans* conformer observed and fit; two V_3 barriers determined
$C_4H_2F_6O_4$	Trifluoroacetic Anhydride – Water Complex	N. Love A.K. Huff K.R. Leopold	Parent, D_2O and HDO assigned and fit.
$C_7H_9F_3O_3$	Pivalic Trifluoro-Acetic Anhydride	N. Love A.K. Huff K.R. Leopold	10 Isotopologues observed and fit
$C_7H_{11}F_3O_4$	Pivalic Trifluoro-Acetic Anhydride-H_2O–Complex	N. Love A.K. Huff K.R. Leopold	Parent, HDO, and D_2O isotopologues assigned and fit. 2 states.
$C_{10}H_{20}O_4$	Pivalic Anhydride – Water Complex	N. Love A.K. Huff K.R. Leopold	Parent, HDO, and D_2O; isotopologues assigned and fit. 2 states.
$C_9H_5F_3O_3$	Benzoic Trifluoro-Acetic Anhydride	N. Love A.K. Huff M.A Dvorak K.R. Leopold	Parent assigned and one ^{13}C isotopologue fit.
$C_5H_{10}O_2$	Pivalic Acid	A.K. Huff N. Love K.R. Leopold	Parent assigned and fit.
C_5H_7ON	Pyridine – Water complex (HOD)	R.B. Mackenzie C.T. Dewberry C.J. Smith R.D. Corneilus, K.R. Leopold	Spectra assigned and fit for both HOD and DOH species.

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_6H_5NS_2$	$C_5H_5N{-}CS_2$ (pyridine-CS_2 complex)	B. Timp, S. Iyer, K.R. Leopold	Spectra observed.
$C_7H_5F_2N$	2,6-difluoropyridine-HCCH complex	C.T. Dewberry R.B. Mackenzie K.R. Leopold	HCCH, DCCD, and HCCD isotopologues; Manuscript in preparation.
$C_3H_9ArNO_3S$	$(CH_3)_3N{-}SO_3{-}Ar$ complex	C.T. Dewberry R.B. Mackenzie B.A. Timp K.R. Leopold	Spectra observed.
$ArHNO_3$	Nitric acid – Argon complex	J.L. Doran G. Sedo K.R. Leopold	Spectrum observed, rotational assignments.
$C_5H_{11}N_3$	$(CH_3)_3N$-HCN-HCN complex	M. Craddock C.S. Brauer K.R. Leopold	11 isotopologues assigned and analyzed.
$C_3H_{11}F_2N$	$(CH_3)_3N$-HF-HF complex	C.S. Brauer M. Craddock G. Sedo S. W. Hunt K.R. Leopold	8 isotopologues assigned and analyzed Manuscript in preparation.
$C_7H_6O_2$	CO_2-Benzene complex	J.L. Doran K.R. Leopold	Spectrum observed; not assigned.
BF_3H_2O	H_2O-BF_3 complex	D.L. Fiacco S.W. Hunt K. J. Higgins M.E. Ott K.R. Leopold	6 isotopologues observed; Internal motion
CH_3BF_4	methyl fluoride-BF_3 complex	J.A. Phillips M. Canagaratna M.E. Ott K.R. Leopold	Spectra observed for ^{10}B and ^{11}B species with CH_3F and $^{13}CH_3F$; two internal rotor states.
$C_6H_{18}GaN$	$(CH_3)_3Ga$-$N(CH_3)_3$ complex	S.W. Hunt D.L. Fiacco K.R. Leopold	^{14}N and ^{15}N species observed.
ClH_2NO_3	HCl-nitric acid complex	M.E. Ott K.R. Leopold	a-type spectrum for ^{35}Cl, ^{37}Cl, ^{14}N, and ^{15}N and DNO_3 species.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_8OS_3	$(H_2S)_3 \cdots H_2O$ Water ··· Hydrogen sulfide Complexes	Saragi, Pérez,[a] Pinacho,[a] Schnell[a]	Assigned
$H_{12}O_3S_3$	$(H_2S)_3 \cdots (H_2O)_3$ Water ··· Hydrogen sulfide Complexes	Saragi, Pérez,[a] Pinacho,[a] Schnell[a]	Assigned
CN_2O_2	$N_2O \cdots CO$ Nitrous oxide ··· Carbon monoxide	Demaison,[b] Vogt,[b] Jin,[c] Saragi, Juanes, Lesarri	*JCP*, 2021, in press
$C_2H_3OF_5$	$CF_3CF_2H \cdots H_2O$ Pentafluoroethane ··· Water	Feng,[c] Caminati,[d] Grabow[e]	Manuscript
$C_2H_2F_4S_3$	$C_2F_4S_2 \cdots H_2S$ 2,2,4,4-Tetrafluoro- 1,3-dithiethane ··· Hydrogen sulfide	Jin,[c] Feng,[c] Saragi	Assigned
$C_4H_6F_4S_3$	$C_2F_4S_2 \cdots C_2H_6S$ 2,2,4,4-Tetrafluoro- 1,3-dithiethane ··· Dimethylsulfide	Obenchain,[a,e] Spada,[f] Juanes, Grabow[e]	Assigned
$C_4H_{10}S_2$	2,3-Butanedithiol	Juanes	In preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_{12}OS$	CH_3CH_2OH-CH_3CH_2SH Ethanol ··· Ethanethiol	Jin,[c] Zhang,[c] Li,[c] Feng[c]	Assigned
$C_4H_{12}S_2$	$(CH_3CH_2SH)_2$ Ethanethiol dimer	Zhang,[c] Li,[c] Feng[c]	Assigned
$C_4H_5F_3O_2$	$C_3H_3F_3O$-CH_2O 1,1,1-trifluoroacetone ··· Formaldehyde	Jin,[c] Feng,[c] Grabow[e]	Assigned
C_4H_5NOS	C_3H_3NS ··· H_2CO Thiazole ··· Formaldehyde	Li,[c] Chen,[c] Feng,[c] Gou[c]	Assigned
$C_4H_{10}O_2S_2$	Dithioerythritol	Juanes	Assigned
C_5H_7NO	Furfuryl amine	Juanes	Assigned
C_5H_6OS	Thenyl alcohol	Juanes, Saragi	*PCCP*, 2020, in press
$C_5H_6S_2$	Thenyl mercaptan	Juanes, Saragi	*PCCP*, 2020, in press
C_5H_7NS	Thenyl amine	Juanes	Assigned
$C_5H_9NO_2$	C_5H_7NO ··· H_2O Furfuryl amine ··· Water	Juanes, Saragi	Assigned
$C_5H_8O_2S$	C_5H_6OS ··· H_2O Thenyl alcohol ··· Water	Juanes, Saragi, Pinacho, Rubio	*PCCP*, 2020, 22, 12412
$C_5H_8OS_2$	$C_5H_6S_2$ ··· H_2O Thenyl mercaptan ··· Water	Juanes, Saragi, Pinacho, Rubio	*PCCP*, 2020, 22, 12412
C_6H_6Se	Benzeneselenol	Juanes	Assigned
C_6H_6OS	3-Mercaptophenol	Juanes	Assigned
C_6H_7NO	3-Aminophenol	Juanes	Assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_6H_7NS	3-Mercaptoaniline	Juanes	Assigned
C_6H_8OS	2-Thiopheneethanol	Juanes	Assigned
C_6H_8OS	3-Thiopheneethanol	Juanes	Assigned
C_6H_9NS	2-Thiopheneethyl-amine	Juanes	Assigned
C_6H_8OSe	$C_6H_6Se \cdots H_2O$ Benzeneselenol ⋯ Water	Juanes	Assigned
C_6H_8SSe	$C_6H_6Se \cdots H_2S$ Benzeneselenol ⋯ Hydrogen sulfide	Juanes	Assigned
$C_6H_8O_2S$	$C_6H_6OS \cdots H_2O$ 3-Mercaptophenol ⋯ Water	Juanes	Assigned
$C_6H_9NO_2$	$C_6H_7NO \cdots H_2O$ 3-Aminophenol ⋯ Water	Juanes	Assigned
C_6H_9NOS	$C_6H_7NS \cdots H_2O$ 3-Mercaptoaniline ⋯ Water	Juanes	Assigned
C_6H_8OS	$C_6H_6O \cdots H_2S$ Benzofuran ⋯ Hydrogen sulfide	Jin,[c] Feng,[c] Saragi	Assigned
$C_6H_6O_3S$	$C_6H_6O \cdots SO_2$ Benzofuran ⋯ Oxygen disulfide	Jin,[c] Feng,[c] Saragi	Assigned
$C_6H_{10}O_2S$	$C_6H_8OS \cdots H_2O$ 2-Thiopheneethanol ⋯ Water	Juanes	Assigned
$C_6H_{10}O_2S$	$C_6H_8OS \cdots H_2O$ 3-Thiopheneethanol ⋯ Water	Juanes	Assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_2F_5NO$	$C_5F_5N \cdots H_2C{=}O$ Pentafluoropyridine ··· Formaldehyde	Gou,[c] Feng,[c] Juanes	Spectrum recorded
$C_6H_{12}S$	Cyclohexanethiol	Juanes, Lesarri, Evangelisti[d]	Assigned
$C_6H_{13}N$	Cyclohexylamine	Juanes	Assigned
$C_6H_{14}OS$	$C_6H_{12}S \cdots H_2O$ Cyclohexanethiol ··· Water	Juanes, Evangelisti[d]	Assigned
$C_6H_{14}S_2$	$C_6H_{12}S \cdots H_2S$ Cyclohexanethiol ··· Hydrogen sulfide	Juanes, Lesarri, Evangelisti[d]	Assigned
$C_6H_{15}NO$	$C_6H_{13}N \cdots H_2O$ Cyclohexylamine ··· Water	Juanes	Assigned
$C_6H_{15}NS$	$C_6H_{13}N \cdots H_2S$ Cyclohexylamine ··· Hydrogen sulfide	Juanes	Assigned
$C_6H_{11}NO$	ε-Caprolactam	Wachsmuth,[e] Vallejo, Grabow[e]	Assigned
$C_6H_{12}O$	Oxepane	Borter,[e] Wachsmuth,[e] Cocinero,[g] Grabow[e]	Assigned
$C_6H_{12}O_3S$	$C_6H_{12}O{\cdots}SO_2$ Cyclohexanol ··· Oxygen disulfide	Jin,[c] Saragi, Juanes, Feng[a]	*PCCP*, 2021, In press
$C_6H_{13}N$	Azepane	Wachsmuth,[e] Vallejo, Grabow[e]	Assigned
$C_6H_5ClF_3N$	$C_5H_5N{\cdots}CF_3Cl$ Pyridine ···Trifluoromethane	Gou,[c] Vallejo, Spada,[f] Staffolani,[d] Lesarri, Cocinero,[g] Caminati[d]	*JMSy*, 2020, 371, 111323

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_7H_6ClF	2-Chloro-4-fluoro toluene	Nair,[e] Herbers,[e] Obenchain,[e] Grabow,[e] Nguyen	*SAA*, 2021, 247, 119120
$C_7H_{14}S$	Cyclohexyl-methanethiol	Jin,[c] Saragi, Feng[c]	Assigned
$C_7H_{10}O_2$	$C_7H_8O \cdots H_2O$ Benzyl alcohol ⋯ Water	Saragi	Assigned
$C_7H_{12}O_3$	$C_7H_8O \cdots (H_2O)_2$ Benzyl alcohol ⋯ $(Water)_2$	Saragi	Assigned
$C_7H_8O_3$	$C_7H_6O_2 \cdots H_2O$ Phenyl formate ⋯ Water	Juanes, Das[h]	Assigned
$C_7H_{10}OS$	$C_7H_8S \cdots H_2O$ Benzyl mercaptan ⋯ Water	Saragi	Assigned
$C_7H_{15}NO_2$	Jaspine B3 ((2S,3S,4S) -4-amino-2-propylte-trahydro-furan-3-ol)	Saragi	Submitted
$C_7H_{17}NO_3$	$C_7H_{15}NO_2 \cdots H_2O$ Jaspine B3 ((2S,3S,4S) -4-amino-2-propylte-trahydro-furan-3-ol) ⋯ Water	Saragi	Submitted
$C_8H_{10}O$	1-Phenylethylalcohol	Saragi, Juanes	Assigned
$C_8H_{10}S$	1-Phenylethyl mercaptan	Saragi	Assigned
$C_8H_{12}N$	1-Phenylethanamine	Saragi, Juanes	Assigned
$C_8H_{16}O$	Cyclohexyl ethanol	Jin,[c] Saragi, Gang[c]	Assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_8H_{13}NO$	$C_8H_{13}NO \cdots H_2O$ 1-Phenylethanamine ··· Water	Saragi, Juanes	Assigned
$C_8H_{12}N$	Cyanocycloheptane	Wachsmuth,[e] Grabow[e]	In preparation
$C_8H_{16}O_2$	$(C_4H_8O)_2$ Tetrahydrofuran Dimer	Saragi, Pérez,[a] Pinacho,[a] Schnell[a]	Assigned
$C_8H_{12}O_2$	$C_8H_{10}O \cdots H_2O$ 2-Phenylethyl alcohol ··· Water	Saragi	Assigned
$C_8H_{12}OS$	$C_8H_{10}S \cdots H_2O$ 2-Phenylethyl mercaptan ··· Water	Saragi	Assigned
$C_8H_{14}O_3$	$C_8H_{10}O \cdots (H_2O)_2$ 2-Phenylethyl alcohol ··· $(Water)_2$	Saragi	Assigned
$C_9H_{18}O_3$	1,7-dioxaspiro[5.5] Undecane··· Water	Saragi, Juanes	Assigned
$C_9H_{13}NO_3$	$C_9H_{11}NO_2 \cdots H_2O$ Benzocaine ··· Water	Lesarri, Shipman,[i] Pate[j]	Assigned
$C_{10}H_8S$	2-Naphtalenethiol	Juanes, Saragi	Submitted
$C_{10}H_{12}O_4$	$(C_5H_6O_2)_2$ Furfuryl alcohol dimer	Juanes, Saragi	Submitted
$C_{10}H_{12}O_2S_2$	$(C_5H_6OS)_2$ Thenyl alcohol dimer	Juanes, Saragi	Submitted
$C_{10}H_{16}O$	2-adamantanol	Juanes, Saragi	Assigned
$C_{10}H_{18}O_2$	$C_{10}H_{16}O \cdots H_2O$ 2-adamantanol ··· Water	Juanes, Saragi	Assigned
$C_{10}H_{18}OS$	8-Mercapto menthone	Saragi, Juanes	Assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{10}H_{12}O_3$	$HOC_6H_3(OCH_3)C_2H_2CH_2OH$ Coniferyl alcohol	Cocinero,[g] Lesarri	In preparation
$C_{10}H_{14}O_3$	$HOC_6H_3CH_2CH_2CH(CO)CH_3$ Zingerone	Cocinero,[g] Lesarri, Caminati[c]	In preparation
$C_{11}H_{15}NO_2$	$NH_2C_6H_4COO(CH_2)_3CH_3$ Butamben	Vallejo, Caminati,[d] Grabow[e] Lesarri, Cocinero,[g]	*CC*, 2020, 56, 6094
$C_{11}H_{15}NO_2$	$NH_2C_6H_4COOCH_2CH(CH_3)_2$ Isobutamben	Vallejo, Caminati,[d] Grabow[e] Lesarri, Cocinero,[g]	*CC*, 2020, 56, 6094
$C_{12}H_{22}S_2$	Dicyclohexyl disulfide	Saragi, Demaison,[b]	Assigned
$C_{12}H_{12}S_2$	$(C_6H_6S)_2$ Thiophenol dimer	Saragi, Juanes, Pérez,[a] Pinacho, Caminati, Schnell,[a] Lesarri	*JPCL*, 2021, 12, 1367
$C_{12}H_{24}O_3$	Tetrahydrofuran trimer	Saragi, Pérez,[a] Pinacho[a] Schnell[a]	Assigned
$C_{12}H_{16}O_2S_2$	$(C_6H_8OS)_2$ 2-Thiopheneethanol Dimer	Juanes	Assigned
$C_{12}H_{16}O_2S_2$	$(C_6H_8OS)_2$ 3-Thiopheneethanol Dimer	Juanes	Assigned
$C_{12}H_{24}O_2$	$(C_6H_{12}O)_2$ Cyclohexanol dimer	Juanes, Usabiaga,[g] León, Evangelisti[d] Fernández,[g] Lesarri	*ACIE*, 2020, 59, 14081
$C_{12}H_{26}N_2$	$(C_6H_{13}N)_2$ Cyclohexyl amine dimer	Juanes	Assigned
$C_{12}H_{22}S_2$	Dicyclohexyl disulfide	Saragi, Juanes	Assigned
$C_{12}H_{13}N$	1-(1-Naphthyl)ethyl Amine	Saragi, Juanes	Assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{14}H_{16}O_2$	$(C_7H_8O)_2$ Benzyl alcohol Dimer	Saragi, Pinacho,[a] Schnell,[a] Fernández	Manuscript
$C_{14}H_{16}O_2$	$(C_7H_8O)_2$ Benzyl alcohol Dimer	Saragi, Pinacho,[a] Schnell,[a] Fernández[g]	Manuscript
$C_{14}H_{16}S_2$	$(C_7H_8S)_2$ Benzyl mercaptan Dimer	Saragi	Manuscript
$C_{14}H_{28}S_2$	$(C_7H_{14}S)_2$ Cyclohexyl-methanethiol dimer	Jin,[c] Saragi, Feng[c]	Assigned
$C_{15}H_{24}N_2O$	Matrine	Juanes, Saragi	*JOC*, 2021, 86, 1861
$C_{16}H_{20}O_2$	$(C_8H_{10}O)_2$ 1-Phenylethanol Dimer	Juanes	Assigned
$C_{16}H_{20}S_2$	$(C_8H_{10}S)_2$ Phenylethyl mercaptan dimer	Saragi	Manuscript
$C_{16}H_{32}O_2$	$(C_8H_{16}O)_2$ Cyclohexyl ethanol dimer	Jin,[c] Saragi, Feng[c]	Assigned
$C_{20}H_{16}S_2$	$(C_{10}H_8S)_2$ 2-Naphtalenethiol Dimer	Juanes, Saragi	Assigned
$C_{20}H_{32}O_2$	$(C_{10}H_{16}O)_2$ 2-adamantanol Dimer	Juanes, Saragi	Assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2HClF_2	(*E*)-1-chloro-1,2-difluoroethylene (*E*)-$CF^{35}ClCHF$, (*E*)-$CF^{37}ClCHF$, (*E*)-$^{13}CF^{35}ClCHF$, (*E*)-$CF^{35}Cl^{13}CHF$	Helen O. Leung Mark D. Marshall	Spectrum assigned. Manuscript in prep.
$C_2H_2ClF_3$	hydrogen fluoride–(*E*)-1-chloro-1,2-difluoroethylene HF–(*E*)-$CF^{35}ClCHF$, HF–(*E*)-$CF^{37}ClCHF$, DF–(*E*)-$CF^{35}ClCHF$, DF–(*E*)-$CF^{37}ClCHF$	Helen O. Leung Mark D. Marshall	Spectrum assigned. Manuscript in prep.
$C_4H_3ClF_2$	acetylene–(*E*)-1-chloro-1,2-difluoroethylene HCCH–(*E*)-$CF^{35}ClCHF$, HCCH–(*E*)-$CF^{37}ClCHF$, $H^{13}CCH$–(*E*)-$CF^{35}ClCHF$, $HC^{13}CH$–(*E*)-$CF^{35}ClCHF$	Helen O. Leung Mark D. Marshall	Spectrum assigned. Manuscript in prep.
$C_2HArClF_2$	argon–(*E*)-1-chloro-1,2-difluoroethylene Ar–(*E*)-$CF^{35}ClCHF$, Ar–(*E*)-$CF^{37}ClCHF$, Ar–(*E*)-$^{13}CF^{35}ClCHF$, Ar–(*E*)-$CF^{35}Cl^{13}CHF$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_2H_3ClF_2$	hydrogen chloride–*cis*-1,2-difluoroethylene $H^{35}Cl$–*cis*-CHFCHF, $H^{37}Cl$–*cis*-CHFCHF, $H^{35}Cl$–*cis*-$^{13}CHFCHF$	Helen O. Leung Mark D. Marshall	Spectrum assigned. Manuscript in prep.
$C_2H_2DF_3$	deuterium fluoride–*cis*-1,2-difluoroethylene DF–*cis*-CHFCHF, DF–*cis*-$^{13}CHFCHF$, DF–*cis*-$CHF^{13}CHF$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
C_2H_3ArCl	argon–vinyl chloride; Ar–$CH_2CH^{35}Cl$, Ar–$CH_2CH^{37}Cl$	Helen O. Leung Mark D. Marshall	Spectrum assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_4Cl_2$	hydrogen chloride−vinyl chloride $H^{35}Cl–CH_2CH^{35}Cl$, $H^{35}Cl–CH_2CH^{37}Cl$, $H^{37}Cl–CH_2CH^{35}Cl$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_2H_3Cl_2F$	hydrogen chloride−(*Z*)-1-chloro-2-fluoroethylene; $H^{35}Cl–(Z)$-$CHFCH^{35}Cl$, $H^{37}Cl–(Z)$-$CHFCH^{35}Cl$, $H^{35}Cl–(Z)$-$CHFCH^{37}Cl$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
C_2H_2ArClF	argon−1-chloro-1-fluoroethylene $Ar–CH_2CF^{35}Cl$, $Ar–CH_2CF^{37}Cl$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_2H_3Cl_2F$	hydrogen chloride−1-chloro-1-fluoroethylene $H^{35}Cl–CH_2CF^{35}Cl$, $H^{35}Cl–CH_2CF^{37}Cl$, $H^{37}Cl–CH_2CF^{35}Cl$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_2H_2Cl_2$	*cis*-1,2-dichloroethylene $CH^{35}ClCH^{35}Cl$, $CH^{35}ClCH^{37}Cl$, $CH^{37}ClCH^{37}Cl$, $CH^{35}Cl^{13}CH^{35}Cl$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_2H_2ArCl_2$	argon−*cis*-1,2-dichloroethylene $Ar–CH^{35}ClCH^{35}Cl$, $Ar–CH^{35}ClCH^{37}Cl$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
C_2H_2BrF	1-bromo-1-fluoroethylene; $CH_2C^{79}BrF$ $CH_2C^{81}BrF$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_{11}H_{11}F_3O_2$	2-(trifluoromethyl)-oxirane−styrene oxide $CH_2CH(CF_3)O–CH_2CH(C_6H_5)O$	Helen O. Leung Mark D. Marshall Sérgio Domingos Cristóbal Pérez Melanie Schnell	*Chem. Sci.* **11,** 10863 (2020).
$C_6H_6F_6O_2$	2-(trifluoromethyl)-oxirane dimer $CH_2CH(CF_3)O–CH_2CH(CF_3)O$	Helen O. Leung Mark D. Marshall Nathan Seifert Yunjie Xu Wolfgang Jäger Anna Krin Sergio Domingos Melanie Schnell	Spectrum assigned. Manuscript in prep.
$C_3H_2F_4O$	*cis*-1,3,3,3-tetrafluoro-1,2-epoxypropane *cis*-$CHFCH(CF_3)O$, *cis*-$^{13}CHFCH(CF_3)O$, *cis*-$CHF^{13}CH(CF_3)O$, *cis*-$CHFCH(CF_3)^{18}O$, *cis*-$CHFCH(^{13}CF_3)O$	Helen O. Leung Mark D. Marshall	Spectrum assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_2ArF_4O$	argon–*cis*-1,3,3,3-tetrafluoro-1,2-epoxy-propane; *cis*-$CHFCH(CF_3)O$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_3H_2F_4O$	*trans*-1,3,3,3-tetrafluoro-1,2-epoxypropane *trans*-$CHFCH(CF_3)O$, *trans*-$^{13}CHFCH(CF_3)O$, *trans*-$CHF^{13}CH(CF_3)O$, *trans*-$CHFCH(CF_3)^{18}O$, *trans*-$CHFCH(^{13}CF_3)O$	Helen O. Leung Mark D. Marshall	Spectrum assigned. Manuscript in prep.
$C_3H_2ArF_4O$	argon–*trans*-1,3,3,3-tetrafluoro-1,2-epoxy-propane; Ar–*trans*-$CHFCH(CF_3)O$, Ar–*trans*-$^{13}CHFCH(CF_3)O$, Ar–*trans*-$CHF^{13}CH(CF_3)O$, Ar–*trans*-$CHFCH(^{13}CF_3)O$	Helen O. Leung Mark D. Marshall	Spectrum assigned. Manuscript in prep.
$C_3H_6ArO_2$	argon–oxiranylmethanol Ar–$CH_2CH(CH_2OH)O$	Helen O. Leung Mark D. Marshall	J. Mol. Spectrosc. **375,** 111407 (2021)
$C_6H_{10}F_2O_2$	2-(fluoromethyl)-oxirane dimer $CH_2CH(CFH_2)O–CH_2CH(CFH_2)O$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_6H_8F_4O_2$	2-(difluoromethyl)-oxirane dimer $CH_2CH(CF_2H)O–CH_2CH(CF_2H)O$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
C_4H_6O	2-vinyloxirane; $CH_2CH(CHCH_2)O$, $^{13}CH_2CH(CHCH_2)O$, $CH_2{}^{13}CH(CHCH_2)O$, $CH_2CH(^{13}CHCH_2)O$, $CH_2CH(CH^{13}CH_2)O$, $CH_2CH(CHCH_2)^{18}O$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
C_4H_6ArO	argon–2-vinyloxirane Ar–$CH_2CH(CHCH_2)O$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_3H_3ClF_4$	hydrogen chloride–2,3,3,3-tetrafluoropropene $H^{35}Cl–CH_2CFCF_3$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_3H_2ClF_3$	2-chloro-3,3,3-trifluoropropene $CH_2C^{35}ClCF_3$, $^{13}CH_2C^{35}ClCF_3$, $CH_2{}^{13}C^{35}ClCF_3$, $CH_2C^{35}Cl^{13}CF_3$, $CH_2C^{37}ClCF_3$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_3H_2ArClF_3$	argon–2-chloro-3,3,3-trifluoropropene Ar–$CH_2C^{35}ClCF_3$, Ar–$CH_2C^{37}ClCF_3$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_3H_2ClF_3$	(*Z*)-1-chloro-3,3,3-trifluoropropene (*Z*)-$CH^{35}ClCHCF_3$, (*Z*)-$^{13}CH^{35}ClCHCF_3$, (*Z*)-$CH^{35}Cl^{13}CHCF_3$, (*Z*)-$CH^{35}ClCH^{13}CF_3$, (*Z*)-$CH^{37}ClCHCF_3$	Helen O. Leung Mark D. Marshall	Spectrum assigned.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_2ArClF_3$	argon–(*Z*)-1-chloro-3,3,3-trifluoropropene Ar–(*Z*)-$CH^{35}ClCHCF_3$, Ar–(*Z*)-$CH^{37}ClCHCF_3$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_5H_4ClF_3$	acetylene–(*Z*)-1- chloro-3,3,3-tri-fluoropropene; HCCH–(*Z*)-$CH^{35}ClCHCF_3$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_3H_2ClF_3$	(*E*)-1-chloro-3,3,3-trifluoropropene (*E*)-$CH^{35}ClCHCF_3$, (*E*)-$^{13}CH^{35}ClCHCF_3$, (*E*)-$CH^{35}Cl^{13}CHCF_3$, (*E*)-$CH^{35}ClCH^{13}CF_3$, (*E*)-$CH^{37}ClCHCF_3$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_3H_2ArClF_3$	argon–(*E*)-1-chloro-3,3,3-trifluoropropene Ar–(*E*)-$CH^{35}ClCHCF_3$, Ar–(*E*)-$CH^{37}ClCHCF_3$	Helen O. Leung Mark D. Marshall	Spectrum assigned.
$C_3H_2F_4$	(*E*)-1,3,3,3-tetrafluoropropene (*E*)-$CHFCHCF_3$, (*E*)-$^{13}CHFCHCF_3$, (*E*)-$CHF^{13}CHCF_3$, (*E*)-$CHFCH^{13}CF_3$	Helen O. Leung Mark D. Marshall	J. Mol. Spectrosc. **374,** 111379 (2020)
$C_3H_2ArF_4$	argon–(*E*)-1,3,3,3-tetrafluoropropene Ar–(*E*)-$CHFCHCF_3$, Ar–(*E*)-$^{13}CHFCHCF_3$, Ar–(*E*)-$CHF^{13}CHCF_3$, Ar–(*E*)-$CHFCH^{13}CF_3$	Helen O. Leung Mark D. Marshall	J. Mol. Spectrosc. **374,** 111379 (2020)

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_4I_2$	1,1-diiodoethane CHI_2CH_3	Michael J. Carrillo, Wei Lin, Yasuki Endo[9]	JMS, In press
$C_3H_2F_4O_2$	2,3,3,3-tetrafluoropropionic acid; $CF_3CFHCOOH$	Dan A. Obenchain[1], Jianming Wu[6], Xin Xu[6], Will Orellana[1], Stephen A. Cooke[4], Stewart E. Novick[1], Wei Lin	To be submitted
$C_3H_4F_4O_3$	Water-2,3,3,3-tetrafluoropropionic acid; H_2O-$CF_3CFHCOOH$	Dan A. Obenchain[1], Jianming Wu[6], Xin Xu[6], Will Orellana[1], Stephen A. Cooke[4], Stewart E. Novick[1], Wei Lin	To be submitted
C_5H_8Ne	Neon-Methylene Cyclobutane $Ne\text{-}CH_2{=}c\text{-}CCH_2CH_2CH_2$	Andrea Minei[2], Wei Lin, Lu Kang[3], Wallace C. Pringle[1], Stewart E. Novick[1]	Manuscript to be submitted
C_2H_4I	1-Iodoethyl radical $CHI\text{-}CH_3$	Michael J. Carrillo, Wei Lin, Yasuki Endo[9]	Assignment in progress
C_2H_4Cl	2-Chloroethyl radical $CH_2Cl\text{-}CH_2$	Michael J. Carrillo, Wei Lin, Yasuki Endo[9]	Assignment in progress
C_2H_4F	2-Fluoroethyl radical $CH_2F\text{-}CH_2$	Michael J. Carrillo, Wei Lin, Yasuki Endo[9]	Assignment in progress
$C_4H_3F_5O_4$	Formic acid-Pentafluoropropionic acid; $HCOOH\text{-}CF_3CF_2COOH$	Dan A. Obenchain[1], Stephen A. Cooke[4], Stewart E. Novick[1], Wei Lin	Spectrum assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_{10}O$	Water propane (C^{13} isotopomers) H_2O-$CH_3CH_2CH_3$	Dan A. Obenchain[1], Wei Lin, Karen Peterson[8], Richard J. Saykally[5], Stewart E. Novick[1]	Spectrum assigned
$C_5H_8O_2$	Cyclobutanecarboxylic acid c-$CH_2CH_2CH_2CHCOOH$	Michael J. Carrillo, Nicole Moon[7], Zunwu Zhou[10], Shervin Fatehi, Stephen K. Kukolich[10], G. S. Grubbs[7], Wei Lin	Spectrum measured
$C_6H_{10}O_2$	Cyclopentanecarboxylic acid c-$CH_2CH_2CH_2CH_2CHCOOH$	Michael J. Carrillo, Nicole Moon[7], Shervin Fatehi, G. S. Grubbs[7], Wei Lin	Spectrum measured

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_mH_{3m+2n}N_mO_{m+n}$	formamide-water complexes $(CH_3NO)_m$-$(H_2O)_n$	Susana Blanco Juan C. López Pablo Pinacho Brooks Pate´s Group[1]	Spectra assigned
$C_2H_{5+2n}NO_{2+n}$	Methyl carbamate (Urethylane) water complexes $C_2H_5NO_2$-$(H_2O)_n$	Susana Blanco Pablo Pinacho Juan C. López Z. Kisiel[2]	Manuscript in preparation
$C_4H_6O_3$	beta-propiolactone-formaldehyde complex $C_3H_4O_2$-CH_2O	Juan C. López Susana Blanco	Spectrum assigned Work in progress
$C_3H_{5+2n}NO_{1+n}$	2-azetidinone-water complexes C_3H_5NO-$(H_2O)_n$	Pablo Pinacho Susana Blanco Juan C. López	Spectrum observed Work in progress
$C_3H_7NO_2$	Ethyl carbamate (Urethane) water complexes $C_3H_7NO_2$-$(H_2O)_n$	Susana Blanco Pablo Pinacho Juan C. López Z. Kisiel[2]	*PCCP, 22, 18351,* ***2020***
$C_3H_7NO_3$	Isoserine (3-amino-2-hydroxypropanoic acid)	Juan C. López Susana Blanco Alberto Macario	Work in progress
$C_4H_7NO_2S$	L-Thioproline	Juan C. López Susana Blanco Alberto Macario	Spectrum assigned
$C_5H_{12}O$ $C_5H_{12+2n}O_{1+n}$ $C_5H_{12}ArO$	3-methyl-butanol and water complexes and Ar complex $C_5H_{12}O$ $C_5H_{12}O$-$(H_2O)_n$ $C_5H_{12}O$-Ar	Juan C. López Susana Blanco Alberto Lesarri	Spectra assigned Work in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_2F_5NO$	Pentafluropyridine-formaldehyde complex C_5F_5N-CH_2O	Alberto Macario Juan C. López Susana Blanco Assimo Maris[5]	Manuscript in preparation
$C_5H_9NO_2$	Pyridine-(water)$_2$ complex C_5H_5N-$(H_2O)_2$	Juan C. López Susana Blanco	Manuscript in preparation
$C_5H_{11}NO_3$	Pyridine-(water)$_3$ complexes C_5H_5N-$(H_2O)_3$	Juan C. López Susana Blanco	Manuscript in preparation
$C_5H_{11}NO_3$	Pyridine-(water)$_4$ complexes C_5H_5N-$(H_2O)_4$	Juan C. López Susana Blanco	Manuscript in preparation
$C_7H_5F_5O$	pentafluorotoluene-water $C_7F_5H_3$-H_2O	Juan C. López Susana Blanco	Spectrum assigned Work in progress
$C_6H_4F_6O_2$	Hexafluorobenzene-(water)$_2$ complex; C_6F_6-$(H_2O)_2$	Juan C. López Susana Blanco	Spectrum assigned Work in progress
$C_5H_4F_5NO_2$	Pentafluoropyridene-(water)$_2$ complex; C_5F_5N-$(H_2O)_2$	Juan C. López Susana Blanco	Spectrum assigned Work in progress
$C_6H_8N_2O$	Pyridine-formamide complex C_5H_5N-CH_3NO	Susana Blanco Cristina Puzzarini[3] Juan C. López Lorenzo Spada[3]	Spectrum assigned
$C_7H_{10}N_2O$	Pyridine-N-Methylformamide complex C_5H_5N-C_2H_5NO	Lorenzo Spada[3] Juan C. López Cristina Puzzarini[3] Susana Blanco	Spectrum assigned
$C_8H_{11}NO$	Pyridine-acetone complex C_5H_5N-C_3H_6O	Juan C. López Susana Blanco	Manuscript in preparation
$C_9H_{13}NO$	Pyridine-2 butanone complex C_5H_5N-C_4H_8O	Juan C. López Susana Blanco	Manuscript in preparation
$C_4H_{10}O_2$	2-butanone-water complex C_4H_8O-H_2O	Juan C. López Susana Blanco	Manuscript in preparation
$C_{12}H_{11}NO$	Pyridine-Benzaldehyde complex C_5H_5N-C_7H_6O	Susana Blanco Juan C. López	Spectrum assigned Work in progress
$C_5H_7NO_3$	Pyroglutamic acid	Juan C. López Susana Blanco Alberto Macario	Work in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_8O_3$	Levulinic acid	Juan C. López Susana Blanco Alberto Macario	Spectrum observed
$C_6H_{13}NO_2$	Norleucine	Juan C. López Susana Blanco Alberto Macario	Work in progress
$C_7H_2F_6O$	Hexafluorobenzene-formaldehyde Complex C_6F_6-CH_2O	Susana Blanco Juan C. López Alberto Macario	Spectra assigned Work in progress
$C_{11}H_5F_6N$	Hexafluorobenzene-pyridine Complex C_6F_6-C_5H_5N	Susana Blanco Juan C. López	Spectra assigned Work in progress
$C_7H_6O_2$	Gallic acid	Alberto Macario Susana Blanco Juan C. López	Spectrum observed
$C_7H_{6+2n}O_{3+n}$	Salicylic acid-water complexes $C_7H_6O_3$-$(H_2O)_n$	Susana Blanco Juan C. López Alberto Macario	Manuscript in preparation
$C_7H_{7+2n}NO_{2+n}$	Phenyl carbamate-water complexes $C_7H_7NO_2$-$(H_2O)_n$	Pablo Pinacho Susana Blanco Juan C. López	Spectrum observed Work in progress
$C_8H_5F_5O$	Pentafluorotoluene-formaldehyde complex; $C_7F_5H_3$-CH_2O	Susana Blanco Juan C. López	Spectra assigned Work in progress
$C_{14}H_{16}O_4$	Guaiacol dimer $(C_7H_8O_2)_2$	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectra assigned Work in progress
$C_7H_{8+2n}O_{2+n}$	Guaiacol complexes with water $C_7H_8O_2$-$(H_2O)_n$	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectra assigned Work in progress
$C_{7+2n}H_{8+6n}O_{2+n}$	Guaiacol complexes with ethanol $C_7H_8O_2$-$(ethanol)_n$	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectra assigned Work in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{7+n}H_{8+4n}O_{2+n}$	Guaiacol complexes with methanol $C_7H_8O_2$-$(methanol)_n$	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectra assigned Work in progress
$C_{7+6n}H_{8+6n}O_2$	Guaiacol complexes with benzene $C_7H_8O_2$-$(benzene)_n$	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectra assigned Work in progress
$C_{13}H_{18}O_2$	Guaiacol complex with cyclohexene $C_7H_8O_2$-cyclohexene	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectra assigned Work in progress
$C_9H_{14}O_4$	Guaiacol complex with ethanediol $C_7H_8O_2$-(ethanediol)	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectra assigned Work in progress
$C_7H_{12}O_4$	Pimelic acid	Juan C. López Susana Blanco Alberto Macario	Work in progress
$C_8H_8O_2$	*m*-Anisaldehyde	Juan C. López Susana Blanco Alberto Macario	Manuscript in preparation
$C_8H_{8+2n}O_{2+n}$	*m*-Anisaldehyde water complexes $C_8H_8O_2$-$(H_2O)_n$	Juan C. López Susana Blanco Alberto Macario	Manuscript in preparation
$C_8H_8O_3$	4-Hydroxyphenylacetic acid	Juan C. López Susana Blanco Alberto Macario	Work in progress
$C_8H_8O_3$	Mandelic acid	Pablo Pinacho Susana Blanco Juan C. López	Spectra observed
$C_8H_{8+2n}O_{3+n}$	Mandelic acid water complexes $C_8H_8O_3$-$(H_2O)_n$	Pablo Pinacho Susana Blanco Juan C. López	Spectra observed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_8H_9NO_2$	Benzyl carbamate	Pablo Pinacho Juan C. López Susana Blanco	Spectrum observed Work in progress
$C_8H_{9+2n}NO_{2+n}$	Benzyl carbamate-water complexes $C_8H_9NO_2$-$(H_2O)_n$	Pablo Pinacho Juan C. López Susana Blanco	Spectrum observed Work in progress
$C_8H_{10}O$	4-ethylphenol	Susana Blanco Juan C. López	Spectra assigned Work in progress
$C_8H_{10+2n}O_{1+n}$	4-ethylphenol-water complexes $C_8H_{10}O$-$(H_2O)_n$	Susana Blanco Juan C. López	Spectra assigned Work in progress
$C_8H_{10}O_2$	Dimethoxybenzene	Assimo Maris[5] Susana Blanco Juan C. López	Spectrum observed
$C_8H_{10+2n}O_{2+n}$	Dimethoxybenzene-water complexes $C_8H_{10}O_2$-$(H_2O)_n$	Assimo Maris[5] Susana Blanco Juan C. López	Spectrum observed
$C_8H_{10}O_2$	Tyrosol	Juan C. López Susana Blanco Alberto Macario	Spectrum assigned Work in progress
$C_8H_{10+2n}O_{2+n}$	Tyrosol-water complexes $C_8H_{10}O_2$-$(H_2O)_n$	Juan C. López Susana Blanco Alberto Macario	Spectrum assigned Work in progress
$C_8H_{10}O_3$	Hydroxytyrosol	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectrum assigned Work in progress
$C_8H_{10+2n}O_{3+n}$	Hydroxytyrosol-water complexes $C_8H_{10}O_3$-$(H_2O)_n$	Alberto Macario Susana Blanco Juan C. López Melanie Schnell´s Group[4]	Spectrum assigned Work in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_8H_{10}N_4O_2$	Caffeine	Susana Blanco Juan C. López	Spectrum observed
$C_8H_{17}NO_3$	1-aza-12-crown-4	Susana Blanco Juan C. López	Spectrum assigned Work in progress
$C_9H_8O_4$	Caffeic acid	Alberto Macario Susana Blanco Juan C. López	Spectrum observed
$C_9H_{10}O_3$	Methyl 2-methoxybenzoate	Susana Blanco Juan C. López Alberto Macario	Manuscript in preparation
$C_9H_{10+2n}O_{3+n}$	Methyl 2-methoxybenzoate-water complexes $C_9H_{10}O_3$-$(H_2O)_n$	Susana Blanco Juan C. López Alberto Macario	Manuscript in preparation
$C_{10}H_{12}O_5$	Methyl 2-methoxybenzoate-formic acid complex $C_9H_{10}O_3$-(HCOOH)	Susana Blanco Juan C. López Alberto Macario	Manuscript in preparation
$C_9H_{12}O_2$	4-Ethylguaiacol	Susana Blanco Juan C. López Alberto Macario	Manuscript in preparation
$C_9H_{12+2n}O_{2+n}$	4-Ethylguaiacol-water complexes $C_9H_{12}O_2$-$(H_2O)_n$	Susana Blanco Juan C. López Alberto Macario	Manuscript in preparation
$C_9H_{18}O_6$	Triacetone triperoxide (TATP)	Susana Blanco Alberto Macario Juan C. López	*Chem. Eur. J. 27, 1680,* ***2021***
$C_{10}H_{8+2n}N_2O_n$	2,2'-Bipyridine-water complexes $C_{10}H_8N_2$-$(H_2O)_n$	Susana Blanco Juan C. López Alberto Macario	Spectra assigned Work in progress
$C_{10}H_{10}O_3$	3-Methoxycinnamic acid	Alberto Macario Juan C. López Susana Blanco	Spectra observed Work in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{10}H_{10+2n}O_{3+n}$	3-Methoxycinnamic acid-water Complexes $C_{10}H_{10}O_3$-$(H_2O)_n$	Alberto Macario Juan C. López Susana Blanco	Spectra observed Work in progress
$C_{10}H_{16}O$	Verbenol	Assimo Maris[5] Susana Blanco Juan C. López	*PCCP, 22, 5729,* ***2020***
$C_{10}H_{16+2n}O_{1+n}$	Verbenol-water complexes $C_{10}H_{16}O$-$(H_2O)_n$	Assimo Maris[5] Susana Blanco Juan C. López	*PCCP, 22, 5729,* ***2020***
$C_{10}H_{21}NO_4$	1-aza-15-crown-5	Susana Blanco Juan C. López	Spectrum observed
$C_{11}H_9N$	2-Phenylpyridine	Alberto Macario Juan C. López Susana Blanco	Manuscript in preparation
$C_{11}H_{9+2n}NO_n$	2-Phenylpyridine-water complexes $C_{11}H_9N$-$(H_2O)_n$	Alberto Macario Juan C. López Susana Blanco	Manuscript in preparation
$C_{11+2n}H_{9+6n}NO_n$	2-Phenylpyridine-ethanol complexes $C_{11}H_9N$-$(ethanol)_n$	Alberto Macario Juan C. López Susana Blanco	Manuscript in preparation
$C_{13}H_9N$	Acridine	Juan C. López Susana Blanco Alberto Macario	Manuscript in preparation
$C_{13}H_{9+2n}NO_n$	Acridine-water complexes $C_{13}H_9N$-$(H_2O)_n$	Juan C. López Susana Blanco Alberto Macario	Manuscript in preparation
$C_{13}H_{10}N_2O_4$	Thalidomide	Juan C. López Susana Blanco Alberto Macario	Manuscript submitted
$C_{13}H_{13}NO$	4-(4-methoxyphenyl)aniline	Susana Blanco Juan C. López	Spectra assigned
$C_{14}H_{20}O_5$	Benzo-5-crown-5	Susana Blanco Juan C. López	Spectra observed Work in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{15}H_{10}O_2$	Flavone	Susana Blanco Juan C. López	Manuscript in preparation
$C_{15}H_{10+2n}O_{2+n}$	Flavone-water complexes $C_{15}H_{10}O_2$-$(H_2O)_n$	Susana Blanco Juan C. López	Manuscript in preparation
$C_{15}H_{12}O_2$	Flavanone	Susana Blanco Juan C. López	Manuscript in preparation
$C_{15}H_{12+2n}O_{2+n}$	Flavanone-water complexes $C_{15}H_{12}O_2$-$(H_2O)_n$	Susana Blanco Juan C. López	Manuscript in preparation
$C_{15}H_{13}FO_2$	Flurbiprofen	Juan C. López Susana Blanco Alberto Macario	Work in progress

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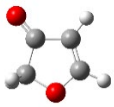
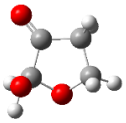
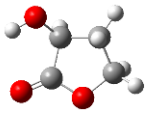
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_3N	Methyleneimine CH_2NH	Scherschligt[1], Douglass[1], Plusquellic[2], Lovas[1]	Spectrum measured near 550 GHz
CH_5N	Methylamine CH_3NH_2	Scherschligt[1], Douglass[1], Plusquellic[2], Lovas[1]	Spectrum measured 530 to 600 GHz
CH_5NO_2	Formic acid-ammonia HCOOH-NH_3	Grabow[3], Lovas[1], Fraser[1]	Spectrum assigned For normal species
C_2H_5NO	Methanol-hydrogen cyanide CH_3OH-HCN	Lovas[1], Sobhanadri[4]	Spectrum assigned for 4 isotopomers **See Researchgate**[a]
C_3H_2O (HCCCHO)	Propynal	Plusquellic[2], Lovas[1], Scherschligt[1], Douglass[1],	mm spectrum assigned
$C_3H_3F_5O$	2,2,2-Trifluoroethyl difluoromethyl ether $CF_3CH_2OCHF_2$ [RE245]	Lovas[1], Suenram[5], Hight Walker[1], Dixon[1,6]	Lowest energy conformer, *anti-anti*, assigned.
C_3H_4O (CH_2=CHCHO)	Propenal	Plusquellic[2], Lovas[1], Scherschligt[1], Douglass[1]	mm spectrum assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_4O_2$	3(2H)-furanone 	Lovas[1], Plusquellic[2], Suenram[1,5], Pate[7], Neill[8], Muckle[8]	Cavity & broadband spectrum assigned, manuscript in prep.
$C_4H_6O_3$	Dihydro-2-hydroxy-3(2H)-furanone 	Lovas[1], Plusquellic[2], Suenram[1,5], Pate[7], Neill[8], Muckle[8]	Cavity & broadband spectrum assigned , manuscript in prep.
$C_4H_6O_3$	Dihydro-3-hydroxy-2(3H)-furanone 	Lovas[1], Plusquellic[2], Suenram[1,5], Pate[7], Neill[8], Muckle[8]	Cavity & broadband spectrum assigned , manuscript in prep.
$C_6H_{15}O_2N$	*N*-ethyl diethanol amine $C_2H_5N(CH_2CH_2OH)_2$	Xu[9], Liu,[9] Lovas[1], Suenram[5], Fraser[1], Jensen[10], Samuels[10]	3 Conformers assigned
$C_{12}H_{10}O$	Biphenyl ether C_6H_5-O-C_6H_5	Onda[11], Schnell[12], Plusquellic[2], Lovas[1]	Spectrum assigned
H_4OS	Hydrogen sulfide - water dimer H_2O-H_2S	Lovas[1], Suenram[5]	Nine isotopic forms assigned, **See Reseaechgate**[a]

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{11}H_{18}O$	Nopol	G. Sedo[1], F. E. Marshall[2], G. S. Grubbs II[2]	Manuscript in Preparation
$C_{10}H_{18}O$	Endo-(-)-Borneol	G. Sedo[1], A. J. Duerden[2], N. Moon[2], G. Grubbs II[2]	Experiments Completed; parent species assigned

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Formula	**Name of Compound**	**Investigator**	**Present Stage of Progress**
CCl^+	chloromethyli-dynium	O. Asvany, S. Thorwirth et al.	mmW; ApJ **910** (2021) 15.
C_3HN	cyanoacetylene	L. Bizzocchi,[1] M. Melosso,[2] L. Dore,[2] C. Degli Esposti,[2] F. Tamassia,[3] H. Spahn, *et al.*	submmW and IR; ongoing; see MPE entry
C_3H_6O	Acetone $CH_3C(O)CH_3$	L. Bonah, O. Zingsheim, *et al.*	measurements and analysis of $^{13}C_1$ started
C_5H_9N	2-cyanobutane	K. Borisov, H. S. P. Müller, et al.	search for excited vibrational states; one found
C_3H_2O	Cyclopropenone *c*-C_3H_2O	A. Brahmi, J.-C. Guillemin,[4] et al.	Isotopic species and structure. A&A **647** (2021) A179.
C_2H_6O	dimethyl ether $(CH_3)_2O$	C. P. Endres, B. Drouin,[5] V. V. Ilyushin,[6] *et al.*	$v_{t1} + v_{t2} = 1$ ms. near subm.; higher-v ongoing
CO	carbon monoxide	R. Gendriesch, F. Lewen, G. Klapper, H. S. P. Müller	full ms. in prep.
HC_5N	Cyanodiacetylene	T. F. Giesen, J.-U. Grabow,[7] *et al.*	*J. Mol. Spectrosc.* **371** (2020) Art. No. 111303.
C_2H_5NO	Acetamide $CH_3C(O)NH_2$	V. V. Ilyushin[6] *et al.*	≤ 660 GHz; analysis ongoing
CH_4S	CH_3SH	V. V. Ilyushin[6] et al.	≤ 1.5 THz, main species, higher v ongoing.
CH_2S	Thioformaldehyde H_2CS	H. S. P. Müller, A. Maeda,[8] *et al.*	≤ 1.4 THz; various vib. states; measurements completed
O_2S	sulfur dioxide	H. S. P. Müller	$v_2 = 2$, $v_1 = 1$, $v_3 = 1$; ≤ 1.5 THz; ongoing
BrF	bromine monofluoride	H. S. P. Müller, S. Thorwirth, *et al.*	$J'' = 0, 1$, $v \leq 30$; preliminary analysis completed

Formula	Name of Compound	Investigator	Present Stage of Progress
FI	iodine monofluoride	H. S. P. Müller, S. Thorwirth, *et al.*	$J'' = 0, 1$, $v \leq 30$; preliminary analysis completed
O_2Ti	titanium dioxide	H. S. P. Müller, S. Brünken, *et al.*	full manuscript on 7 isotopic species in preparation
C_2H_3N	methyl cyanide CH_3CN	H. S. P. Müller, B. J. Drouin,[5] K. Sung,[5] *et al.*	inclusion of $v_4 = 1$: J. Mol. Spectrosc., in press; doi: 10.1016/j.jms.2021.111449 further states ongoing
NH_2	Amidogen	H. S. P. Müller, B. J. Drouin[5]	around 2.6 THz at JPL
CH_6N^+	protonated methyl-amine $CH_3NH_3^+$	P. Schmid et al.	rot.; mearements completed; manuscript in preparation
H_3HeN	ammonia vdW compl. with helium $He\cdots NH_3$	L. A. Surin, S. Schlemmer, M. Hermanns	MW; search for inv. and rot.-inv. trans. of $He\cdots oNH_3$, $He\cdots pNH_3$
H_5N	ammonia vdW compl. with hydrogen $H_2\cdots NH_3$	I. Tarabukin,[9] L. A. Surin, M. Hermanns, S. Schlemmer	$H_2\cdots NH_3$, with D_2 or D_3; J. Mol. Spectrosc. 377 (2021) 111442
H_3NNe	ammonia vdW compl. with neon $Ne\cdots NH_3$	I. Tarabukin,[9] L. A. Surin, M. Hermanns, S. Schlemmer	MW; search for rot. trans. of $Ne\cdots pNH_3$
H_3N_3	ammonia vdW compl. with nitrogen $N_2\cdots NH_3$	I. Tarabukin,[9] L. A. Surin, M. Hermanns, S. Schlemmer	J. Chem. Phys. **152** (2020) Art. No. 234304
C_4H_7N	*n*-propyl cyanide *n*-C_3H_7CN	A. Walters,[10] et al.	search for higher vib. states of *gauche* and *anti* conformers; ongoing
$C_2H_2O_3$	formic acid anhydride	A. Walters,[10] J.-C. Guillemin,[4] et al.	measurements and analyses advanced
C_5H_9N	3-methylbutyronitrile	N. Wehres, et al.	≤ 405 GHz; search for excited states ongoing; some found
CH_4O	CH_3OD	L.-H. Xu,[11] R. M. Lees,[11] V. V. Ilyushin,[6] et al.	≤ 1.34 THz, $v_t \leq 2$; ongoing
CH_4O	$^{13}CH_3OD$	L.-H. Xu,[11] R. M. Lees,[11] et al.	≤ 510 GHz, $v_t \leq 2$; submitted to J. Mol. Spectrosc.

Formula	Name of Compound	Investigator	Present Stage of Progress
CH_4O	CD_3OH	H. S. P. Müller, V. V. Ilyushin,[6] et al.	≤ 1.1 THz, $v_t \leq 2$; analysis advanced
CH_4O	CH_3OH etc.	H. S. P. Müller, V. V. Ilyushin,[6] et al.	measurements underway
C_3H_6O	*gauche*-propanal	O. Zingsheim et al.	analyses complete; manuscript in preparation
C_3H_6O	*syn*-propanal	O. Zingsheim et al.	analyses nearing completion
ANALYSIS/ DATABASE	Cologne Database for Molecular Spectroscopy: http://cdms.astro.uni-koeln.de/		

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[3]Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Italy
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[5]Jet Propulsion Laboratory, Pasadena, CA, USA
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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_7N	Dimethyl amine CH_3NHCH_3	C. Gutlé[1] K. Koziol,[2] W. Stahl[2]	Manuscript in Preparation
$C_3H_3D_3O_2$	Methyl acetate-D_3 & Methyl-D_3 acetate CD_3COOCH_3	I. Kleiner[1] L.W. Sutikdja[2,*]	Assignments Completed
C_3H_7NO	N-Methylacetamide $CH_3(CO)NHCH_3$	I. Kleiner[1] S. Khemissi[1]	mmw-spectrum, Assignments in Progress
C_3H_9N	Ethyl methyl amine $C_2H_5NHCH_3$	K. Koziol[2]	*J. Chem. Phys.* **153**, 184308 (2020).
C_4H_5NS	n-Methylthiazol n = 4, 5	K. Koziol[2]	n = 4, 5: Fits in Progress
C_4H_7NO	*N*-Vinylacetamide $CH_3(CONH)C_2H_3$	I. Kleiner[1] R. Kannengießer[2,*]	A Species Assignments Completed, E Species in Progress
$C_4H_8O_2$	Ethyl acetate $CH_3COOC_2H_5$	L. Nguyen	*gauche* Conformer: Assignments in Progress
C_4H_8OS	Ethyl thioacetate $CH_3(C=O)SC_2H_5$	L. Nguyen	Assignments in Progress
$C_4H_{10}S$	Methyl propyl sulfide $CH_3SC_3H_7$	L. Tulimat[2,*]	*J. Mol. Spectrosc.* **373**, 111356 (2020).

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_6N_2$	n-Methylpyrimidine n = 2, 4, 5	T. Nguyen[1], I. Kleiner[1], W.Stahl[2]	Assignments Completed, Fits in Progress
C_5H_4OS	2-Thiophene- carboxaldehyde	H. Mouhib[3] R. Hariki[3,4*]	*Mol. Phys.* **118**, e1728406 (2020).
C_5H_5ClS	2-Chloro-3- Methylthiophene	K. Koziol[2]	Assignments Completed, Fits in Progress
C_5H_5ClS	2-Chloro-5- Methylthiophene	K. Koziol[2]	Assignments Completed, Fits in Progress
$C_5H_6O_2$	Methyl-2-butynoate $CH_3C{\equiv}CCOOCH_3$	I. Kleiner[1] K. Eibl[2,*]	Manuscript in Preparation
C_5H_6S	2-Methylthiophene	K. Koziol[2]	Manuscript in Preparation
C_5H_7N	n-Methylpyrrole n = 2, 3	T. Nguyen[1] I. Kleiner[1]	n = 2: *Mol. Phys.* **118**, 1668572 (2020). n = 3: *J. Mol. Spectrosc.* **372**, 111351 (2020).
C_5H_7NS	4,5-Dimethylthiazole	T. Nguyen, [1] I. Kleiner,[1] W. Stahl[2], V. Van[2,*]	*J. Mol. Struct.* **1207**, 127787 (2020).
C_5H_7NS	2,4-Dimethylthiazole	S. Khemissi,[1] I. Kleiner,[1] V. Van[2,*]	Assignments in Progress
C_5H_8O	3-Pentyn-2-ol $CH_3C{\equiv}CCH(OH)CH_3$	I. Kleiner[1] K. Eibl[2,*]	Manuscript in Preparation
C_5H_8O	3-Penten-2-one $CH_3COCH{=}CHCH_3$	M. Andresen[1,2,*]	Manuscript in Preparation
$C_5H_{10}O$	3-Methyl-2-butanone $CH_3COCH(CH_3)_2$	M. Andresen[1,2,*]	Manuscript in Preparation
C_5H_8O	Allyl acetate $CH_3COOCH_2CH{=}CH_2$	L. Nguyen	Higher Energy Conformers: Assignments in Progress
$C_5H_8O_2$	Coffee furanone	L. Nguyen, W. Stahl,[2] V. Van[2,*]	*Can. J. Phys.* **98**, 538 (2020).
$C_5H_9O_2N$	*N*-acetyl-*N*- methylacetamide	K. Eibl,[2,*] R. Kannengießer,[2,*]	Manuscript in Preparation
$C_5H_{11}NO$	*tert*-Butylformamide $H(CONH)C_4H_9$	R. Kannengießer[2,*]	Manuscript in Preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{13}N$	*N*-methyl-*tert*-butyl amine $(CH_3)_3CNHCH_3$	L. Nguyen	Assignments Completed, Fits in Progress
$C_6H_6O_2$	2-Acetylfuran	C. Dindic[2]	Manuscript under revision
C_6H_6OS	3-Methyl-2-thiophenecarboxaldehyde	C. Dindic[2]	Assignment in Progress
C_6H_6OS	2-Acetylthiophene	C. Dindic[2]	Manuscript in Preparation
C_6H_7NS	4-Methyl-5-vinylthiazole	S. Khemissi[1]	Manuscript in Preparation
C_6H_8O	2-Ethylfuran	L. Nguyen	*J. Mol. Struct.* **1208**, 127909 (2020).
C_6H_8O	2,3-Dimethylfuran	I. Kleiner[1] H. Mouhib,[3] R. Hariki[3,4*]	Assignment in Progress
$C_6H_8O_2$	Ethyl-2-butynoate $CH_3C{\equiv}CCOOCH_2CH_3$	I. Kleiner[1] K. Eibl[2,*]	Manuscript in Preparation
C_6H_9N	n,m-dimethylpyrrole n,m = 2,5	T. Nguyen[1], I. Kleiner[1]	Manuscript under Revision
C_6H_9N	n,m-dimethylpyrrole n,m = 2,4	L. Nguyen	Assignment in Progress
C_6H_9NS	2,4,5-trimethylthiazole	S. Khemissi[1]	Assignment in Progress
$C_6H_{10}O$	4-Methylpent-3-en-2-one $CH_3COC_4H_7$	H. Mouhib[3]	Two Tops Completed, 3rd Rotor in Progress
$C_6H_{12}O_2$	Ethyl butyrate $CH_3(CH_2)_2COOC_2H_5$	L.W. Sutikdja[2,*]	Manuscript in Preparation
$C_6H_{12}O_2$	*n*-Methyl pentanoate $C_4H_9COOCH_3$	M. Andresen[1,2,*]	*Phys. Chem. Chem. Phys.* **23**, 2930 (2021).
$C_6H_{13}OS$	4-Methoxy-2-methylbutane-2-thiol $CH_3O(CH_2)_2C_3H_6SH$	H. Mouhib[3]	Manuscript in Preparation
$C_6H_{17}NO$	Triethyl amine – water $(C_2H_5)_3N$-H_2O	R. Kannengießer[2,*]	Assignments in Progress
C_7H_8OS	2-Propionylthiophene	C. Dindic[2]	*Phys. Chem. Chem. Phys.* **22**, 19704 (2020).
C_7H_8OS	2-Acetyl-3-methylthiophene	C. Dindic[2]	Manuscript in Preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_7H_8OS	2-Acetyl-4-methylthiophene	C. Dindic[2]	Manuscript in Preparation
C_7H_8OS	2-Acetyl-5-methylthiophene	C. Dindic[2]	Assignment in Progress
$C_7H_{14}O_2$	*n*-Methyl hexanoate $C_5H_{11}COOCH_3$	N.N. Nguyen[5]	Manuscript in Preparation
$C_7H_{10}O_4$	Dimethyl-cyclopropane-1,1-dicarboxylate	V. Van,[2,*] W. Stahl[2] P. Groner[6]	Manuscript in Preparation
$C_7H_{11}N$	1,2,5-Trimethylpyrrole	V. Van,[2,*] W. Stahl[2]	Manuscript in Preparation
$C_8H_8O_2$	Phenyl acetate $CH_3COOC_6H_5$	L. Ferres[2,*]	Assignments Completed, Fit in Progress
C_8H_8OS	Phenylthioacetate $CH_3COSC_6H_5$	L. Ferres[2,*]	Assignments Completed, Fit in Progress
C_8H_9F	n,m-Dimethylfluorobenzene n,m = 2,3; 2,4; 2,5; 2,6; 3,4; 3,5 $F(C_6H_3)(CH_3)_2$	S. Khemissi[1]	3,5: Assignment in Progress 2,6: *ChemPhysChem* **21**, 1682-1687 (2020). 3,4: *Spectro. Chim. Acta A* **253**, 119564 (2021). 2,3;2,4;2,5: Manuscript in Preparation
$C_8H_{10}OS$	3-Acetyl-2,5-dimethylthiophene	C. Dindic[2]	Assignment in Progress
$C_8H_{12}S$	Tetramethylthiophene	V. Van[2,*]	Assignments Completed, Fits in Progress
$C_8H_{16}O$	Octen-3-ol CH_2=$CHCH(OH)C_5H_{11}$	H. Mouhib[3]	Manuscript in Preparation
$C_8H_{16}O$	Octan-2-one	M. Andresen[1,2,*]	*ChemPhysChem* **21**, 2206 (2020).
$C_9H_6O_2$	Coumarin	L. Nguyen, J.-U. Grabow[7]	*ChemPhysChem* **21**, 1243-1248 (2020).
$C_9H_{12}O$	n,m-Dimethylanisole n,m = 2,5; 2,6; 3,5	L. Ferres[2,*]	Fits Completed, Manuscript in preparation
$C_{10}H_{12}O$	Rose oxide	H. Mouhib[3] V. Van[2,*]	Manuscript in Preparation

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FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_3H_5F_5S$	propen-1-ylsulfur pentafluoride $CH_3CH{=}CH{-}SF_5$	W. Orellana, S. L. Stephens, W. C. Pringle, S. E. Novick, S. A. Cooke [p]	J. Mol. Spectrosc. **371**, 111300 (2020).
$C_4H_7F_5S$	buten-1-ylsulfur pentafluoride $CH_3CH_2CH{=}CH{-}SF_5$	W. Orellana, S. L. Stephens, W. C. Pringle, S. E. Novick, S. A. Cooke [p]	J. Mol. Spectrosc. **371**, 111300 (2020).
$C_3H_6NO_3$	n-propyl nitrate	W. Orellana, S. L. Stephens, S. E. Novick, S. A. Cooke,[p] C. Brauer,[d] T. A. Blake [d]	J. Mol. Spectrosc. **374**, 111376 (2020).
CBr_2F_2	dibromodifluoromethane	J. A. Signore, C. B. Falls, D. A. Obenchain,[ak] J-U Grabow,[ad] W. C. Pringle, S. A. Cooke,[p] S. E. Novick	manuscript in preparation
$C_4H_9NO_3$	n-butyl nitrate	S. L. Stephens,[ai] J. A. Signore, C. Brauer,[d] T. A. Blake [d], S. A. Cooke,[p] S. E. Novick	manuscript in preparation
C_7H_7I	3-iodotoluene	J. A. Signore, L. Nguyen,[ai] C. B. Falls, A. Seys, S. A. Cooke,[p] S. E. Novick	A state assigned, E state partially assigned
$C_5H_{11}I$	1-iodopentane	S. L. Stephens, J. A. Signore, D. A. Obenchain,[ah] L. Cheng,[af] W. C. Bailey,[ag] S. A. Cooke [p], S. E. Novick	manuscript in preparation
C_2F_2N	1,1-difluoro-2-nitrile-ethynyl radical; F_2CCN	L. Kang,[i] L. Nguyen,[ai] S. A. Cooke,[p] S. E. Novick	manuscript in preparation
$C_6H_{13}I$	1-iodohexane	S. L. Stephens, J. A. Signore, D. A. Obenchain,[ah] S. A. Cooke,[p] S. E. Novick	work in progress
C_6H_{12}	2-methyl-1-hexen-3-yne	S. L. Stephens, Z. Khanna, R. K. Bohn, S. E. Novick, S. A. Cooke [p]	work in progress
C_6H_8O	3-hexyne-2-one	S. L. Stephens, Z. Khanna, R. K. Bohn, S. E. Novick, S. A. Cooke [p]	work in progress
$C_4H_3F_5O_4$	perfluoropropionic acid formic acid; CF_3CF_2COOH HCOOH	D. A. Obenchain, W. Lin,[k] S. E. Novick, S. A. Cooke [p]	manuscript in preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$AgClD_2$	hydrogen silver chloride D_2 AgCl	D. A. Obenchain, G. S. Grubbs II,[x] D. S. Frank, H. M. Pickett, S. E. Novick	all *para* and *ortho* isotopologues assigned, manuscript in preparation
AgClDH	hydrogen silver chloride HD AgCl	D. A. Obenchain, G. S. Grubbs II,[x] D. S. Frank, H. M. Pickett, S. E. Novick	all *para* and *ortho* isotopologues assigned, manuscript in preparation
$C_3H_2F_4O_2$	2,3,3,3-tetrafluoropropionic acid; $CF_3CFHCOOH$	D. A. Obenchain,[ad] J. Wu,[ac] W. Orellana, X. Xu,[ac] S. A. Cooke,[p] S. E. Novick, W. Lin[k]	manuscript in preparation
$C_3H_4F_4O_3$	2,3,3,3-tetrafluoropropionic acid water complex $CF_3CFHCOOH\ H_2O$	D. A. Obenchain,[ad] J. Wu,[ac] W. Orellana, X. Xu,[ac] S. A. Cooke,[p] S. E. Novick, W. Lin[k]	manuscript in preparation
$C_3H_7F_5O_5$	pentafluoropropionic acid trihydrate $(H_2O)_3\ CF_3CF_2COOH$	G. S. Grubbs II,[x] D. A. Obenchain, D. S. Frank, S. E. Novick, S. A. Cooke,[p] A. Serrato III,[k] W. Lin[k]	spectrum assigned
$C_6H_5F_7O_2$	ethyl heptafluorobutyrate $CF_3CF_2CF_2COOCH_2CH_3$	B. E. Long, D. S. Frank, L. Hansen, D. Obenchain, R. K Bohn,[r] S. E. Novick	mostly assigned, multiple conformations, work in prog
$C_3H_{10}O$	water propane (^{13}C isotopomers) $H_2O\ CH_3CH_2CH_3$	D. A. Obenchain, W. Lin,[k] K. I. Peterson,[e] R. J. Saykally,[z] W. Lin[k]	assigned
$C_8H_{11}NO$	4-aminophenyl ethanol $NH_2C_6H_4CH_2CH_2OH$	C. Bray, C. R. Rivera, E. A. Arsenault, D. A. Obenchain, S. E. Novick, J. L. Knee	assigned
$C_6H_5F_5O_2$	allyl perfluoropropionate $CH_2CHCH_2OOCCF_2CF_3$	D. S. Frank, S. E. Novick, S. A. Cooke,[p] G. S. Grubbs II	assigned
$ClCuH_2$	hydrogen copper chloride H_2 CuCl	H. M. Pickett, D. A. Obenchain, G. S. Grubbs II, S. E. Novick	4 isotopologues of *p*-H_2 CuCl and 1 isotopologue of *o*-H_2 CuCl measured and assigned

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
C_3HF_3N	hexafluoroacetone imine	D. A. Obenchain, D. J. Frohman, G. S. Grubbs II, B. E. Long, W. C. Pringle, S.E. Novick, S. A. Cooke[p]	spectra assigned, manuscript in preparation
$C_5H_5F_5O_2$	ethyl pentafluoropropionate $CF_3CF_2COOCH_2CH_3$	D. A. Obenchain, B. E. Long, B. E. Baker, R. K. Bohn[r], S. E. Novick, S. A. Cooke[p]	work in progress, assigned
$C_5H_{10}O$	2-methyl-3-buten-2-ol	B. E. Long, D. A. Obenchain, S. E. Novick, S. A. Cooke[p]	work in progress, assigned
C_5H_8Ne	neon methylenecyclobutane Ne C_5H_8	A. J. Minei,[q] W. Lin,[k] L. Kang,[i] W. C. Pringle, S. E. Novick	^{20}Ne and ^{22}Ne isotopomers assigned
C_4H_9ArN	argon aminocyclobutane Ar $C_4H_7NH_2$	D. J. Frohman, W. C. Pringle, S. E. Novick	work in progress
C_5H_7NNe	neon cyanocylobutane Ne C_4H_7CN	D. J. Frohman, W. Ndugire, S. E. Novick, W. C. Pringle	work in progress
C_5H_7ArN	argon cyanocylobutane Ar C_4H_7CN	D. J. Frohman, D. A. Obenchain, S. E. Novick, W. C. Pringle	work in progress
C_4H_7N	3-pyrroline; 2,5-dihydropyrrole	W. Lin,[k] D. J. Frohman, S. E. Novick	work in progress
$C_6H_{10}O$	3-methylcyclopentanone	A. J. Minei,[q] W. C. Pringle, S. E. Novick	work in progress
$C_6H_{10}ArO$	argon 3-methylcyclopentanone Ar $C_6H_{10}O$	A. J. Minei,[q] W. C. Pringle, S. E. Novick	work in progress
C_6H_{10}	methylene cyclopentane	A. J. Minei,[q] W. C. Pringle, S. E. Novick	manuscript in preparation
$C_6H_{10}Ar$	argon methylene cyclopentane Ar C_6H_{10}	A. J. Minei,[q] W. C. Pringle, S. E. Novick	manuscript in preparation
$C_6H_{10}Ne$	neon methylene cyclopentane Ne C_6H_{10}	A. J. Minei,[q] W. C. Pringle, S. E. Novick	work in progress
$C_2F_6O_2$	bis[trifluoromethoxy]peroxide CF_3OOCF_3	L. Kang,[i] S. E. Novick	spectroscopy completed
C_4H_8ArO	argon cyclobutanol Ar C_4H_8O	W. Lin,[k] G. Lindeke, T.T.E. Mould, W. Ndugire, S. E. Novick, W. C. Pringle	work in progress
C_3H_6S	Thietane	D. McCamant, J. Schlier, S. E. Novick, W. C. Pringle	manuscript in preparation
C_3H_6ArS	argon thietane Ar C_3H_6S	D. McCamant, J. Schlier, S. E. Novick, W. C. Pringle	manuscript in preparation

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
C_5H_8Ar	argon cyclopentene Ar C_5H_8	K. Ngogodo, L. Kang, S. E. Novick, W. C. Pringle	manuscript in preparation
C_3DF_2	deuterodifluororopynyl radical F_2C-C≡CD	L. Kang,[i] S. E. Novick	work in progress
$C_3H_{10}Si$	Trimethylsilane $(CH_3)_3SiH$	L. Kang,[i] S. E. Novick	spectroscopy completed
$C_5H_{10}Si$	Trimethylsilylacetylene $(CH_3)_3SiC{\equiv}CH$	L. Kang,[i] S. E. Novick	spectroscopy completed
$C_7H_{10}Si$	Trimethylsilyldiacetylene $(CH_3)_3SiC{\equiv}C{-}C{\equiv}CH$	L. Kang,[i] S. E. Novick	spectroscopy completed
ClDSi	deuterated chlorosilylene DSiCl	L. Kang,[i] S. E. Novick	work in progress
$C_3H_{10}Ge$	trimethyl germane $(CH_3)_3GeH$	W. Lin,[k] L. Kang,[i] S. E. Novick	work in progress
ANALYSIS/DATABASE	Bibliography of Weakly Bound Complexes	**https://wesfiles.wesleyan.edu/home/snovick/SN_webpage/vdw.pdf**	updated sporadically

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
AgHO	Silver monohydroxide AgOH	H. Hashimoto H. Kubota	FTMW spectrum In progress
AgHS	Silver monohydrosulfide AgSH	H. Hashimoto H. Kubota	FTMW spectrum In progress
AuHO	Gold monohydroxide AuOH	H. Hashimoto T. Takahashi	FTMW and mmW spectra In progress
AuHS	Gold monohydrosulfide AuSH	H. Kubota S. Uchida T. Takahashi	FTMW and mmW spectra In progress
AuS	Gold monosulfide	S. Mizuno	mmW spectrum Manuscript in preparation
BrNi	Nickel monobromide NiBr	M. Tajima	Hyperfine structure In progress
CNPd	Palladium monocyanide PdCN	E. Y. Okabayashi Y. Kise	mmW spectrum In progress
ClNi	Nickel monochloride NiCl	E. Y. Okabayashi K. Murase	Excited electronic states In progress
ClPd	Palladium monochloride PdCl	Y. Kise	mmW spectrum In progress
FPd	Palladium monofluoride PdF	Y. Kise	mmW spectrum In progress
OPd	Palladium monoxide PdO	T. Kurahara	mmW spectrum In progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
PdS	Palladium monosulfide	S. Kiyose	mmW spectrum In progress
BrH_2N	Bromoamine	M. Tanaka	mmW spectrum In progress
C_2FI	Fluoroiodoacetylene[a] ICCF	Y. Shimoyama	FTMW spectrum In progress
C_5FN	Fluorocyanodiacetylene FC_5N	M. Hibi S. Matsumoto	FTMW spectrum In progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CHF_2	Difluoromethyl radical	H. Ozeki S. Saito[1]	Analysis completed Manuscripts in preparation
N_2O	Nitrous oxide	H. Ozeki S. Abe	isotopologues, pressure broadening measurements
O_3	Ozone	H. Ozeki S. Bailleux[2]	main and isotopologues at 600 GHz
CH_2	Methylene-d_2 CD_2	H. Ozeki S. Bailleux[2]	THz spectrum assigned manuscript in preparation
H_2N	Amidogen NHD	K. Kobayashi[3] H. Ozeki	THz spectrum manuscript in preparation
$C_2H_4N_2$	Aminoacetonitrile	H. Ozeki K. Kobayashi[3]	mmW-spectrum in the vibrational excited states assigned
$C_3H_4N_2O_2$	Hydantoin	H. Ozeki K. Kobayashi[3]	mmW-spectrum in the vibrational excited states assigned
$C_4H_6N_2O_2$	5-Methyl Hydantoin	H. Ozeki M. Awazu K. Kobayashi[3]	mmW-spectrum in the ground and vibrational excited states assigned manuscript in preparation
INO_2	Iodine nitrite	H. Watahiki H. Ozeki S. Bailleux[2]	Spectrum assigned.
ClH	Hydrogen Chloride	H. Ozeki	Pressure broadening measurements

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_4O_2$	Methyl formate	H. Ozeki K. Kobayashi[3] S. Kohjiro[4] K. Kikuchi[5]	Absolute intensity measurement

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FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_3H_6O_2S$	Dimethyl sulfide… carbon dioxide complex $(CH_3)_2S…CO_2$	M.M. Serafin	Numerous lines observed; Stark effect experiments in progress.
$C_5H_{10}O$	Dimethyl ether… propyne complex $(CH_3)_2O…HCCMe$	M.M. Serafin	Numerous lines observed; in progress.
$C_3H_7F_3O$	Dimethyl ether… fluoroform complex $(CH_3)_2O…HCF_3$	W. Caminati[a)]	Normal isotopologue assigned; dipole moment measured. Internal motion analysis.
$C_3H_3F_3$	Acetylene…fluoroform complex $HCCH…HCF_3$	M.M. Serafin	Normal, $H^{13}CCH…HCF_3$ and $DCCD…HCF_3$ spectra assigned; internal motion analysis.
$C_4H_{12}Si$	Diethylsilane $(C_2H_5)_2SiH_2$	A.L. Steber, D.A. Obenchain, G.A. Guirgis,[b)] J.L. Neill,[c)] M.T. Muckle,[c)] B.H. Pate[c)]	^{29}Si, ^{30}Si and ^{13}C analysis of *anti-anti*, *anti-gauche* and *gauche-gauche* conformers using CP-FTMW broadband data. Manuscript in preparation.
C_2HCl_2FOS	Dichlorofluoromethane… carbonyl sulfide complex $CHCl_2F…OCS$	A.L. Steber	Normal isotopologue assigned. Cl nuclear quadrupole hyperfine analysis in progress.
C_2HClF_2OS	Chlorodifluoromethane… carbonyl sulfide complex $CHClF_2…OCS$	A.L. Steber, M.D. Foellmer	Tentative assignment made.

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_2HClF_2O_2$	Chlorodifluoromethane… carbon dioxide complex $CHClF_2…CO_2$	A.L. Steber, M.D. Foellmer, J.L. Neill,[c] M.T. Muckle,[c] B.H. Pate[c]	Tentative assignment made of broadband spectrum. Nuclear quadrupole hfs analysis in progress.
$C_4H_{12}Ge$	Diethylgermane $(C_2H_5)_2GeH_2$	A.L. Steber, G.A. Guirgis, J.L. Neill,[c] M.T. Muckle,[c] B.H. Pate[c]	*Gauche-gauche*, *anti-gauche* and *anti-anti* conformers assigned using CP-FTMW data. ^{13}C spectra assigned for *gauche-gauche*, *anti-gauche* conformers.
$C_7H_3F_5$	Pentafluorotoluene $C_6F_5CH_3$	A.A. Elliott, J.M. Sexton, S.A. Cooke,[d] G.S. Grubbs II[e]	Substitution structure and dipole moment; internal motion. Manuscript in preparation.
C_6ClF_5	Chloropentafluorobenzene C_6F_5Cl	A.A. Elliott, J.L. Neill, [c] M.T. Muckle,[c] B.H. Pate[c] S. Melandri[a]	Structure, nuclear hyperfine analysis. Manuscript in preparation (with bromopentafluorobenzene)[a].
C_4H_9Br	2-bromobutane	D.A. Obenchain, Jung-Jin Oh,[f] Jihyun Kim[f] Heesu Jang[f] Soohyun Ka[f]	Three conformers assigned. ^{79}Br and ^{81}Br nuclear quadrupole hyperfine structure. Manuscript in preparation (*J. Mol. Spectrosc.*).
C_4H_7Br	2-bromo-1-butene	Jihyun Kim,[f] Jung-Jin Oh[f] Heesu Jang[f]	^{79}Br & ^{81}Br isotopologues assigned.
C_4H_7Br	2-bromo-2-butene	Jihyun Kim,[f] Jung-Jin Oh[f] Soohyun Ka[f]	^{79}Br, ^{81}Br assigned; 2 conformers; internal rotation analysis in progress.
C_4H_7Br	4-bromo-1-butene	Jung-Jin Oh[f] Heesu Jang[f] Soohyun Ka[f]	^{79}Br, ^{81}Br assigned for *ga* and *gg* conformers.
$C_8H_{14}O$	2-ethylcyclohexanone	Jihyun Kim,[f] Jung-Jin Oh[f]	Normal isotopologue assigned.
C_4H_8Si	Divinylsilane $(H_2C=CH)_2SiH_2$	D.A. Obenchain, G.A. Guirgis[b]	Three conformers assigned; dipole moments measured. Manuscript in preparation.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_6F_2Si$	Difluorodivinylsilane $(H_2C{=}CH)_2SiF_2$	D.A. Obenchain, G.A. Guirgis[b)]	Two conformers assigned. Manuscript in preparation.
CH_3BrF_2O	Bromodifluoromethane–water complex $CHBrF_2\ldots H_2O$	A.J. Thomas, D.A. Obenchain, A.L. Steber,[c)] J.L. Neill,[c)] B.H. Pate,[c)] P. Groner[g)]	Assigned ^{79}Br, ^{81}Br isotopologues; all transitions doubled by H_2O internal rotation. Internal rotation analysis in progress.
$C_3H_4F_2$	Difluoromethane… acetylene complex $CH_2F_2\ldots HCCH$	D.A. Obenchain, D.L. Jurkowski, A.J. Thomas	Normal isotopologue, $^{13}C_2H_2$, $^{13}CH_2F_2$ assigned; Dipole moment measured. Manuscript in preparation.
$C_3H_6F_2$	Difluoromethane… ethylene complex $CH_2F_2\ldots C_2H_4$	D.A. Obenchain	Normal isotopologue assigned; internal motion analysis.
C_3H_6ClF	Chlorofluoromethane… ethylene complex $CH_2ClF\ldots C_2H_4$	D.A. Obenchain C.L. Christenholz	^{35}Cl, ^{37}Cl isotopologues assigned; internal motion analysis in progress.
$C_2H_2ClFO_2$	Chlorofluoromethane… carbon dioxide complex $CH_2ClF\ldots CO_2$	D.A. Obenchain, C.L. Christenholz	^{35}Cl, ^{37}Cl isotopologues assigned; internal motion analysis in progress.
$C_3H_4F_4$	Trifluoromethane… vinyl fluoride complex $CHF_3\ldots C_2H_3F$	L.F. Elmuti, S.J. Stettner, R.E. Dorris	Normal isotopologue assigned; *A*, *E* states fit in progress using XIAM and BELGI.
C_4H_8O	1,2-epoxybutane	R.E. Dorris, C.L. Christenholz	Additional measurements 6–16 GHz. ^{13}C isotopologues identified.
C_8H_8	Benzene…acetylene complex $C_6H_6\ldots HCCH$	E.R. Webster, R.E. Dorris, B.E. Luce	DCCD and HCCD isotopologues. Excited vibrational state analysis in progress (with McMahon, UW-Madison and Moazzen-Ahmahdi, U. Calgary).
$C_3H_3BrO_2$	Vinyl bromide…carbon dioxide complex $C_2H_3Br\ldots CO_2$	A.M. Anderton	^{79}Br and ^{81}Br isotopologues assigned.
C_2HF_3Ne	Trifluoroethylene…neon complex $C_2HF_3\ldots Ne$	A.M. Anderton	^{20}Ne and ^{22}Ne isotopologues assigned; dipole moment.

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_2H_4Cl_2$	*gauche*-1,2-dichloroethane ClH_2CCH_2Cl	E.R. Webster A.S. Dikkumbura R.E. Dorris	($^{35}Cl_2$), ($^{37}Cl_2$), (^{35}Cl,^{37}Cl) species assigned; structure fit in progress.
$C_6H_4F_2Ne$	1,2-difluorobenzene… neon complex $C_6H_4F_2…Ne$	J.M. Kang[h)] M.L. Grant A.G. Akmeemana S.P. Kamari	^{20}Ne and ^{22}Ne isotopologue tentative assignments.
C_2H_4ClF	1-chloro-2-fluoroethane	A.S Dikkumbura	Normal, ^{37}Cl, ^{13}C isotopologues assigned for *gauche* conformer; structure fit for *gauche*; tentative assignment for *anti* conformer.
C_8H_5F	3-fluorophenylacetylene $F(C_6H_4)C{\equiv}CH$	Heesu Jang[f)] Soohyun Ka[f)] Jung-Jin Oh[f)]	Manuscript in preparation.
$C_3H_4Cl_2$	2,3-dichloropropene	A.S. Dikkumbura	Normal, ^{37}Cl and ^{13}C isotopologues assigned for *gauche* conformer. Normal and $^{35/37}Cl$ species for *anti* conformer; structure fit in progress.
C_3F_6	Perfluoropropene	E.N. Pinter A.L. Steber[i)] B. Arenas[i)] M. Schnell[i)]	Normal and ^{13}C isotopologues assigned 5–18 GHz; dipole moment. 75–110 GHz analysis in progress. Vibrationally excited states obs.
C_3ArF_6	Perfluoropropene…Ar Complex $C_3F_6…Ar$	R.E. Dorris	Normal isotopologue assigned.
$C_3H_2F_2O_2$	*cis*-1,2-difluoroethene…CO_2 complex $C_2H_2F_2…CO_2$	W.C. Trendell	Normal isotopologue assigned. Internal motion analysis in progress.
C_2H_3FNe	Vinyl fluoride…neon dimer $C_2H_3F…Ne$	P. Kannangara M.A. Martinez	^{20}Ne fit done; consistent with an effective planar structure. Structural analysis in progress.
$C_5H_3FO_6$	Vinyl fluoride…$(CO_2)_3$ tetramer $C_2H_3F…(CO_2)_3$	P. Kannangara	Normal isotopologue assigned; further analysis in progress.
$C_6H_9F_3$	Vinyl fluoride trimer $(C_2H_3F)_3$	P. Kannangara	Normal isotopologue assigned; further analysis in progress.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_9H_{12}F_4O_2$	(Vinyl fluoride)$_4$…CO_2 pentamer $(C_2H_3F)_4$…CO_2	P. Kannangara B.H. Pate[c)] C.T. West[c)]	Spectrum assigned; work to confirm cluster composition in progress.
$C_7H_9F_3O_2$	(Vinyl fluoride)$_3$…CO_2 tetramer $(C_2H_3F)_3$…CO_2	P. Kannangara	Spectrum assigned; work to confirm cluster composition in progress.
$C_8H_9F_3O_4$	(Vinyl fluoride)$_3$…$(CO_2)_2$ pentamer $(C_2H_3F)_3$…$(CO_2)_2$	P. Kannangara	Spectrum assigned; work to confirm cluster composition in progress.
$C_5H_6F_2O_2$	(Vinyl fluoride)$_2$…CO_2 trimer $(C_2H_3F)_2$…CO_2	P. Kannangara B.H. Pate[c)] C.T. West[c)]	Spectrum assigned; work to confirm cluster composition in progress.
$C_6H_6F_2O_4$	(Vinyl fluoride)$_2$…$(CO_2)_2$ tetramer $(C_2H_3F)_2$…$(CO_2)_2$	P. Kannangara B.H. Pate[c)] C.T. West[c)]	Spectrum assigned; work to confirm cluster composition in progress.
$C_8H_{12}F_4$	Vinyl fluoride tetramer $(C_2H_3F)_4$	P. Kannangara	Spectrum assigned; tentatively assigned to tetramer. Work to confirm composition ongoing.
$C_5H_6F_2NeO_2$	(Vinyl fluoride)$_2$…Ne…CO_2 tetramer? $(C_2H_3F)_2$…CO_2…Ne	P. Kannangara B.H. Pate[c)] C.T. West[c]	Two spectra assigned (^{20}Ne/^{22}Ne?); seems consistent with tetramer predictions; further work in progress.
$C_4H_2F_2O_4$	1,1-difluoroethylene…$(CO_2)_2$ trimer $C_2H_2F_2$…$(CO_2)_2$	T. Ariyaratne H.L. Fino	Normal isotopologue assigned; further analysis in progress.
$C_5H_2F_2O_6$	1,1-difluoroethylene…$(CO_2)_3$ tetramer $C_2H_2F_2$…$(CO_2)_3$	T. Ariyaratne H.L. Fino	Normal isotopologue assigned; further analysis in progress.
$C_6H_6F_6$	1,1-difluoroethylene trimer $(C_2H_2F_2)_3$	T. Ariyaratne	Normal isotopologue assigned; further analysis in progress.
ANALYSIS/DATABASE	Identification and assignment of cluster spectra in broadband scans using concentration dependence of intensities	P. Kannangara T. Ariyaratne H.L. Fino B.H. Pate[c)] C.T. West[c)]	Ongoing experiments utilizing Mathcad and Python to deconvolute individual spectra. Computational tools to assist identification of cluster composition and structure.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
D_2N	amidogen	M. Melosso[1], O. Pirali[4], M.A. Martin-Drumel[4], et al.	FIR revised + ν_2 band. Analysis completed
HDN	amidogen $HD^{15}N$	M. Melosso[1], L. Bizzocchi[3], O. Pirali[4], et al.	FIR assigned. Submm measurements ongoing
CN	cyano radical	M. Melosso[1], L. Bizzocchi[3], M.A. Martin-Drumel[4], et al.	Submm + FIR spectra assigned. Analysis completed
$C_2H_4N_2$	Aminoacetonitrile H_2NCH_2CN	M. Melosso[1], O. Pirali[4], M.A. Martin-Drumel[4], et al.	*A&A* (2020), **641**, A160
DH_2N	ammonia-d_1	M. Melosso[1], L. Dore[1], C. Puzzarini[1], et al.	*J. Mol. Spectr.* (2020), **370**, 111291
D_2HN	ammonia-d_2	M. Melosso[1], C. Puzzarini[1], L. Dore[1], et al.	*J. Mol. Spectr.* (2021), **377**, 111431
D_3N	ammonia-d_3	L. Dore[1], C. Puzzarini[1], M. Melosso[1], et al.	HFS analysis ongoing

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
ArH	Argonium ArH+	L. Dore[1], L. Bizzocchi[3], M. Melosso[1], et al.	Ar broadening + THz. Manuscript in preparation
CH_2DCl	chloromethane-d_1 $CH_2D^{37}Cl$	P. Stoppa[6], M. Melosso[1], F. Tamassia[2], et al.	ν_5, ν_6, and ν_9 bands. Submitted to *JQSRT*
CHD_2Cl	chloromethane-d_2	A. Pietropolli-Charmet[6], M. Melosso[1], F. Tamassia[2], et al.	mm-wave + IR spectra. Analysis on going
$C_6H_{10}N_2$	propargylamine dimer $(HCCCH_2NH_2)_2$	M. Melosso[1], L. Spada[3], A. Maris[1], et al.	MW spectrum. Analysis completed
C_3H_7NO	propargylamine – water complex $HCCCH_2NH_2 – H_2O$	M. Melosso[1], L. Spada[3], A. Maris[1], et al.	MW spectrum. Analysis completed
C_3H_5N	Propargylamine $HCCCH_2NH_2$	F. Tamassia[2], E. Canè[2], M. Melosso[1], et al.	FIR spectrum. Analysis completed.
C_3HNO	Cyanoketene OCCHCN	B. Ballotta[3], M. Melosso[1], L. Dore[1], et al.	Submm-wave spectrum. Manuscript submitted to *ACS Earth Space Chem.*
$C_2H_4N_2$	*N*-cyano-methylamine CH_3NHCN	L. Bizzocchi[3], M. Melosso[1], M. Carvajal[13], et al.	Assignment in progress.
C_3HN	cyanoacetylene	L. Bizzocchi[3], F. Tamassia[2], M. Melosso[1], et al.	Higher excited states (submm-wave + IR). Manuscript in preparation
C_3DN	*d*-cyanoacetylene	M. Melosso[1], L. Bizzocchi[3], F. Tamassia[2], et al.	*JQSRT* (2020), **254**, 107221
C_3DN	*d*-cyanoacetylene	N. Jiang[1], M. Melosso[1], F. Tamassia[2], et al.	*Front. Astron. Space Sci.*, DOI:10.3389/fspas.2021.656295

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_6O_2$	ethylene glycol $(CH_2OH)_2$	M. Melosso[1], M.A. Martin-Drumel[4], A. Melli[3], et al.	FIR + mm spectra recorded
C_4H_5N	cyclopropyl cyanide c-PrCN	M. Melosso[1], L. Bizzocchi[3], A. Steber[10], et al.	FIR + mm spectra. Analysis ongoing
C_7H_7N	Phenylmethanimine Ph-CH=NH	A. Melli[3], L. Spada[3], J. Grabow[9], et al.	Chem. Eu. J. (2020), **26**, 15016–15022
$C_4H_6S_3F_4$	2,2,4,4-tetrafluoro-1,3-dithiethane - dimethylsulfide complex $C_2F_4S_2$-C_2H_6S	L. Spada[3], D. A. Obenchain[9], M. Juanes[11], et al.	Structure Spectrum assigned
GeS	germanium sulfide	S. Thorwirth[12], C. Puzzarini[1], J. Gauss[8], et al.	Sub-mmw spectrum
C_2S	thioethenylidene	C. Puzzarini[1], J. Gauss[8], et al.	Sub-mmw spectrum manuscript in preparation
DHS	hydrogen sulfide-d1 HDS	C. Puzzarini[1], M. Melosso[1], J. Gauss[8], et al.	HFS analysis + THz + MARVEL Analysis Manuscript in preparation
CO	Carbon monoxide	C. Puzzarini[1], et al.	Self, N_2, O_2, H_2, He, Ar broadening
C_2ClF_3	trifluorochloro-ethylene	C. Puzzarini[1], N. Tasinato[3], P. Stoppa[6], et al.	^{35}Cl, ^{37}Cl: Manuscript in preparation
C_4H_6O	cyclopropane carboxaldehyde c-C_3H_5CHO	S. Alessandrini[3], M. Melosso[1], N. Jiang[1], et al.	mm spectrum + QM calculations. Manuscript in preparation
C_3H_5N	Allylimine CH_2=CH-CH=NH	D. Alberton[5], L. Bizzocchi[3], M. Melosso[1], et al.	Spectrum up to 300 GHz. Manuscript in preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_5N	2-azabutadiene CH_2=CH-N=CH_2	N. Jiang[1], M. Melosso[1], J-C. Guillemin, et al.	mm spectrum + QM calculations. Manuscript in preparation
C_5HN	Cyanodiacetylene HC_5N	A. Melli[3], M. Melosso[1], O. Pirali[4], et al.	FIR spectrum. Analysis ongoing
H_2O	^{17}O-water $H_2{}^{17}O$	M. Melosso[1], M. Diouf[14], C. Puzzarini[1], et al.	HFS in the overtone region + QM calculations. Manuscript in preparation
C_2H_3N	Methyl cyanoacetylene CH_3C_3N	N. Jiang[1], M. Melosso[1], O. Pirali[4], et al.	FIR + mm spectra. Analysis ongoing
C_5H_3NO	2- and 3-furonitrile c-C_4H_3O-CN	L. Spada[3], M. Melosso[1], Q. Gou[7], et al.	FTMW + mm. Analysis completed
$C_5H_5NO_2$	2-furonitrile - water complexes (c-C_4H_3O-CN)-H_2O	L. Spada[3], M. Melosso[1], Q. Gou[7], et al.	FTMW spectra of several conformers
C_3H_2O	Propadienone CH_2=C=C=O	M. Melosso[1], S. Alessandrini[3], C. Puzzarini[1], et al.	mm-wave spectrum. Manuscript in preparation
CH_2O	Formaldehyde H_2CO	A.R. Al-Derzi[15], N. Jiang[1], M. Melosso[1], et al.	*JQSRT* (2021), **266**, 107563

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{11}NO$	Prolinol	Loru, Sanz, Pérez[1], Evagelisti[1], Pate[1],Cocinero group[2]	Two conf. assigned structure determined Manuscript in prep.
$C_5H_{2n+11}NO_{n+1}$	Prolinol-$(H_2O)_n$ $C_5H_{11}NO\cdots(H_2O)_n$	Loru, Sanz, Pérez[1], Evagelisti[1], Pate[1], Cocinero group[2]	Several hydrates assigned Manuscript in prep.
$C_6H_{18}O_3$	Ethanol trimer	Murugachandran, Peña, Sanz, Lamsabhi[3],Yañez[3]	Four conf. assigned
$C_6H_{15}N$	Triethylamine	Peña, Sanz, Myllys[4]	Two new conf. assigned
$C_6H_{17}NO$	Triethylamine-H_2O	Peña, Sanz Myllys[4]	One conf. assigned
$C_7H_7NO_3$	Methylnitrophenol	Hussain, Burevschi, Sanz,Nguyen[5], Kleiner[5]	Analysis finished, manuscript in prep.
$C_7H_9NO_4$	Methylnitrophenol-$(H_2O)_{1,2}$ $C_7H_{11}NO_5$	Hussain, Saxena, Sanz, Nguyen[5] Kleiner[5]	Several species assigned
$C_7H_{10}O_2$	P-cresol-H_2O $C_7H_8O\cdots H_2O$	Saxena, Hussain, Burevschi, Sanz	Spectrum assigned
$C_9H_{2n+14}O_{n+1}$	Cyclooctanone-$(H_2O)_n$ $C_9H_{14}O\cdots(H_2O)_n$	Burevschi, Sanz	Several hydrates assigned, manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{10}H_6O_2$	Naphtoquinone	Sanz, Panchagnula, Saxena, Pérez[1], Evangelisti[1], Pate[1]	ChemPhysChem, 21, 2579-2584 (2020)
$C_{10}H_7NO_2$	Nitronaphthalene	Saxena,Sanz	Spectrum assigned
$C_{10}H_9NO_3$	Nitronaphthalene-H_2O	Saxena,Sanz	Spectrum assigned
$C_{10}H_8O_3$ $C_{10}H_{10}O_4$ $C_{10}H_{12}O_6$	Naphtoquinone-$(H_2O)_{1-3}$	Sanz, Saxena, Panchagnula,West[1], Pérez[1], Evangelisti[1], Pate[1]	Hydrates assigned manuscript in prep.
$C_{10}H_{10}O$ $C_{10}H_{12}O_2$	Azulene-$(H_2O)_{1,2}$	Saxena, Burevschi, Sanz,Gou[6],Zheng[6]	Hydrates assigned manuscript in prep.
$C_{10}H_{12}O_2$	Hinokitiol	Medcraft[7], Murugachandran, Sanz	Several conf. assigned
$C_{10}H_{14}O_3$	Hinokitiol-H_2O	Medcraft[7], Murugachandran, Sanz	Several isomers assigned
$C_{10}H_{18}O$	Limonene-H_2O	Murugachandran, Tang, Peña, Loru, Sanz	J. Phys. Chem. Lett. 12, 1081-1086 (2021)
$C_{10}H_{20}O_2$	Limonene-$(H_2O)_2$ $C_{10}H_{16}\cdots(H_2O)_2$	Murugachandran, Sanz	Several isomers assigned, manuscript in prep
$C_{10}H_{16}$	Alpha-phellandrene	Medcraft[7], Murugachandran, Sanz	Several conf. assigned
$C_{10}H_{16}O$	Dihydrocarvone	Tang, Loru, Sanz,	Four conf. assigned Manuscript in prep.
$C_{10}H_{16}O_2S$	Limonene-SO_2	Medcraft[7], Murugachandran, Sanz	Several isomers assigned
$C_{10}H_{16+2n}O_{n+1}$	Fenchone-$(H_2O)_n$ $C_{10}H_{16}O\cdots(H_2O)_n$	Loru,Burevschi,Sanz, Dréan[8],Chrayteh[8],Huet[8]	Several hydrates assigned,manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{10}H_{18}O$	Dihydrocarveol	Loru, Jarman, Sanz	Four conf. assigned Manuscript in prep.
$C_{10}H_{18}O$	Geraniol	Sanz group Mohaib[9], Kleiner[5]	Spectrum observed one conf. assigned
$C_{10}H_{18}O$	Alpha-phellandrene-H_2O $C_{10}H_{16}\cdots H_2O$	Medcraft[7], Murugachandran, Sanz	Several isomers assigned
$C_{11}H_{20}O$	Cycloundecanone	Burevschi, Sanz	Several conf. assigned
$C_{12}H_{20}O_2$ $C_{10}H_{14}O\cdots C_2H_6O$	Carvone-ethanol	Murugachandran, Sanz	Spectrum assigned
$C_{12}H_{22}O$	Cyclododecanone	Burevschi, Sanz	Seven conf. assigned Manuscript in prep.
$C_{12}H_{24}O_2$ $C_{12}H_{26}O_3$	Cyclododecanone-$(H_2O)_{1,2}$	Burevschi, Sanz	Several hydrates assigned
$C_{14}H_{24}O_4$	Cytronellyl ethyl oxalate	Burevschi, Sanz O'Hagan[10], He[10]	Spectrum assigned
$C_{15}H_{26}O$	Exaltenone	Burevschi, Sanz	Spectrum assigned
$C_{15}H_{26}O_4$	Romandolide	Burevschi, Sanz	Several conf. assigned, manuscript in prep.
$C_{15}H_{28}O_2$	Exaltolide	Burevschi, Sanz	Several conf. assigned
$C_{16}H_{22}O$	Fenchone-benzene $C_{10}H_{16}O\cdots C_6H_6$	Alonso, Burevschi, Sanz	Chem. Eur. J., 26, 11327-11333 (2020)
$C_{16}H_{22}O_2$	Fenchone-phenol $C_{10}H_{16}O\cdots C_6H_5OH$	Alonso, Burevschi, Sanz	Chem. Eur. J., 26, 11327-11333 (2020)
$C_{16}H_{30}O$	Muscone	Burevschi, Sanz	Manuscript in prep.
$C_{17}H_{32}O_3$	Helvetolide	Burevschi, Sanz	Spectrum assigned, manuscript in prep.
$C_{17}H_{30}O$	Civetone	Burevschi, Loru, Sanz	Conformers assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{18}H_{24}O_2$	Carvone-phenylethanol $C_{10}H_{14}O\cdots C_8H_{10}O$	Murugachandran, Sanz	Exp. completed, assign. in progress
$C_{20}H_{12}O_4$	Naphtoquinone dimer	Saxena, Sanz Pérez[1], West[1], Evangelisti[1], Pate[1]	Spectrum assigned
$C_{20}H_{16}$	Azulene dimer	Saxena, Burevschi, Sanz	Spectrum assigned
$C_{20}H_{18}O$	$(Azulene)_2$-H_2O $(C_{10}H_8O)_2\cdots H_2O$	Saxena, Sanz	Spectrum assigned
$C_{20}H_{20}O_2$	$(Azulene)_2$-$(H_2O)_2$ $(C_{10}H_8O)_2\cdots (H_2O)_2$	Saxena, Sanz	Spectrum assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2HClFN	Chlorofluoroacetonitrile	Wenhao Sun	Experiments Completed, Most Assignments Completed
C_2H_4ClFO	1-chloro-1-fluoroethanol	Wenhao Sun	Experiments Completed, Most Assignments Completed
$C_3H_2O_3$	Carbon dioxide and water complex $(CO_2)_3$-H_2O	Wenhao Sun	Experiments Completed, Most Assignments Completed
C_3H_4N	Ethyl cyanide	Benjamin E. Arenas, Sébastien Gruet, Amanda L. Steber	Experiments Completed: Most Assignments Completed
$C_3H_4N_2$	Imidazole	Benjamin E. Arenas, Gayatri Batra, Amanda L. Steber, B.M. Giuliano[1], L. Bizzocchi[1], B. J. Harris[2], B. H. Pate[2]	Manuscript on vibrationally excited states and isotopologues accepted in J. Mol. Spectrosc.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_4N_2O_2$	Hydantoin	Gayatri Batra, Benjamin E. Arenas, Amanda L. Steber	Isotopologues assigned for the inclusion in the imidazole manuscript (see above).
C_3H_6O	Propylene oxide	Benjamin E. Arenas, Pascal Stahl[3]	J. Mol. Spectrosc. 378 (2021) 111445. DOI: 10.1016/j.jms.2021.111445
$C_3H_6O_2$	Methyl acetate (75-110GHz)	Benjamin E. Arenas, Amanda L. Steber	Experiments Completed: Most Assignments Completed
$C_3H_7ClO_2$	3-Chloro-1,2-propanediol	Gayatri Batra, Beppo Hartwig[4], Daniel Obenchain[4]	Experiment completed, Assignment in progress.
C_3H_9NO	Alaninol	Benjamin E. Arenas, Mariyam Fatima	Manuscript accepted in The Astrophysical Journal.
C_3H_9GeI	Trimethyl germanium iodide $(CH_3)_3GeI$	David Schmitz	Experiments Completed: Manuscript in prep.
$C_3H_{16}O_8$	Glycolaldehyde-water complexes $C_3H_6O_3$-$(H_2O)_n$ n=1-6	Cristóbal Pérez	ACIE: DOI: 10.1002/anie.201914888 Another manuscript in prep.
$C_3H_{18}O_9$	1,3,5-Trioxane-water complexes $C_3H_6O_3$-$(H_2O)_n$ n=1-6	Sérgio Domingos, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_4H_5NO_2$	Methyl cyanoacetate	Gayatri Batra, Pablo Pinacho, Amanda L. Steber	Experiments completed: Manuscript in prep.
$C_4H_6ClFO_2$	Ethyl chlorofluoro acetate	Wenhao Sun	Experiments Completed, Most Assignments Completed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_6O	Crotonaldehyde	Chris Medcraft[5], Gayatri Batra	Experiment completed Assignment in progress.
C_4H_6O	Furan - hydrogen complex C_4H_4O-(H_2)	Daniel A. Obenchain[4], Pablo Pinacho	Experiments Completed: Most Assignments Completed
$C_5H_{10}O$	Cyclobutanemethanol monomer	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{10}O_2$	3-methyl-3-oxetanemethanol Monomer	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{10}O$	Cyclobutanemethanol	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{12}O_2$	Cyclobutanemethanol - water complex	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{14}O_3$	Cyclobutanemethanol - $(water)_2$ complex	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{12}O_2$	Tetrahydrofuran - methanol complex C_4H_8O-CH_4O	Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed
$C_5H_{10}O_2$	3-methyl-3-oxetanemethanol	Wenhao Sun	Experiments completed, Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_{12}O_3$	3-methyl-3-oxetanemethanol - water complex	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{14}O_4$	3-methyl-3-oxetanemethanol - $(water)_2$ complexes	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{16}O_5$	3-methyl-3-oxetanemethanol - $(water)_3$ complexes	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{18}O_6$	3-methyl-3-oxetanemethanol - $(water)_4$ complexes	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_5H_{13}NO$	Valinol	Benjamin E. Arenas, Mariyam Fatima	Manuscript accepted in The Astrophysical Journal.
$C_6H_8O_3$	Adipic acid anhydride	Pablo Pinacho, Wenhao Sun Sabrina Zinn	Experiments Completed: Manuscript in prep.
$C_6H_{10}O_3$	(3-methyloxetan-3-yl)methyl formate	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_6H_{10}O_4$	Adipic acid	Pablo Pinacho, Wenhao Sun Sabrina Zinn	Experiments Completed: Manuscript in prep.
$C_6H_{11}F_3O_2$	Tetrahydrofuran - trifluoroethanol complex C_4H_8O-$C_2H_3F_3O$	Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_{12}O_2$	Cyclohexylhydroperoxide	Pablo Pinacho, Wenhao Sun Sabrina Zinn	Experiments Completed: Manuscript in prep.
$C_6H_{12}O_3$	6-hydroxyhexanoic acid	Pablo Pinacho, Wenhao Sun Sabrina Zinn	Experiments Completed: Manuscript in prep.
$C_6H_{12}O_3$	Cyclobutanemethanol - formic acid complexes $C_5H_{10}O$-HCOOH	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_6H_{12}O_4$	3-methyl-3-oxetanemethanol - formic acid complex $C_5H_{10}O_2$-HCOOH	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_6H_{14}O_2$	Tetrahydrofuran - ethanol complex C_4H_8O-C_2H_6O	Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed
$C_6H_{14}O_3$	3-methyl-3-oxetanemethanol - methanol complex $C_5H_{10}O_2$-CH_3OH	Wenhao Sun	Experiments Completed, Most Assignments Completed
$C_6H_{15}NO$	Leucinol	Benjamin E. Arenas, Cristóbal Pérez, Mariyam Fatima	Manuscript accepted in The Astrophysical Journal.
$C_6H_{15}NO$	*iso*-Leucinol	Benjamin E. Arenas, Mariyam Fatima, Cristóbal Pérez, Amanda Steber	Phys. Chem. Chem. Phys., 2020, **22**, 17042-17051.
$C_7H_3F_5O_2$	Pentafluorobenzaldehyde-water complex	Weixing Li, Cristóbal Pérez, Amanda L. Steber	Experiments Completed: Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_7H_5F_5O_3$	Pentafluorobenzaldehyde-$(water)_2$ complex	Weixing Li, Cristóbal Pérez, Amanda L. Steber	Experiments Completed: Manuscript in prep.
$C_7H_7F_5O_4$	Pentafluorobenzaldehyde-$(water)_3$ complex	Weixing Li, Cristóbal Pérez, Amanda L. Steber	Experiments Completed: Manuscript in prep.
$C_7H_9F_5O_5$	Pentafluorobenzaldehyde-$(water)_4$ complex	Weixing Li, Cristóbal Pérez, Amanda L. Steber	Experiments Completed: Manuscript in prep.
$C_7H_{11}F_5O_6$	Pentafluorobenzaldehyde-$(water)_5$ complex	Weixing Li, Cristóbal Pérez, Amanda L. Steber	Experiments Completed: Manuscript in prep.
$C_7H_7FO_2$	2-Fluorobenzaldehyde-water complex	Weixing Li	Experiments Completed: Most Assignments Completed
$C_7H_9FO_3$	2-Fluorobenzaldehyde-$(water)_2$ complex	Weixing Li	Experiments Completed: Most Assignments Completed
$C_7H_{11}FO_4$	2-Fluorobenzaldehyde-$(water)_3$ complex	Weixing Li	Experiments Completed: Most Assignments Completed
$C_7H_7FO_2$	3-Fluorobenzaldehyde-water complex	Weixing Li	Experiments Completed: Most Assignments Completed
$C_7H_9FO_3$	3-Fluorobenzaldehyde-$(water)_2$ complex	Weixing Li	Experiments Completed: Most Assignments Completed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_7H_{11}FO_4$	3-Fluorobenzaldehyde-$(water)_3$ complex	Weixing Li	Experiments Completed: Most Assignments Completed
$C_7H_7FO_2$	4-Fluorobenzaldehyde-water complex	Weixing Li	Experiments Completed: Most Assignments Completed
$C_7H_9FO_3$	4-Fluorobenzaldehyde-$(water)_2$ complex	Weixing Li	Experiments Completed: Most Assignments Completed
$C_7H_{11}FO_4$	4-Fluorobenzaldehyde-$(water)_3$ complex	Weixing Li	Experiments Completed: Most Assignments Completed
$C_7H_7FO_2$	Fluorobenzene-formic acid complex	Weixing Li	Experiments Completed: Manuscript in prep.
$C_8H_9FO_4$	Fluorobenzene-$(formic\ acid)_2$ complex	Weixing Li	Experiments Completed: Manuscript in prep.
C_7H_8O	m-Cresol	Sabrina Zinn, Daniel A. Obenchain[4]	Experiments complete; assignments complete
$C_7H_8O_2$	Benzaldehyde-water complex	Weixing Li, Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_7H_{10}O_3$	Benzaldehyde-$(water)_2$ complex	Weixing Li, Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_7H_{12}O_4$	Benzaldehyde-$(water)_3$ complexes	Weixing Li, Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_7H_{14}O_5$	Benzaldehyde-(water)$_4$ complexes	Weixing Li, Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_7H_{16}O_6$	Benzaldehyde-(water)$_5$ complexes	Weixing Li, Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_7H_{18}O_7$	Benzaldehyde-(water)$_6$ complexes	Weixing Li, Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_7H_{10}F_3NO_3$	Methyl 2-acetamido-4,4,4-trifluorobutanoate	Daniel A. Obenchain[4], Pablo Pinacho	Experiments completed,
$C_7H_{18}OSi$	Sec-butoxytrimethylsilane	Freya Berggötz Himanshi Singh Cristobal Perez	Assignments and internal rotational analysis ongoing
$C_8H_7FO_3$	2-Fluorobenzaldehyde-formic acid complex	Weixing Li	Experiments Completed: Manuscript in prep.
$C_9H_9FO_5$	2-Fluorobenzaldehyde-(formic acid)$_2$ complexes	Weixing Li	Experiments Completed: Manuscript in prep.
C_8H_8O	Vinylphenylether	Mariyam Fatima, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
C_8H_8O	Styrene oxide monomer (2-8 GHz, 75-110 GHz)	Benjamin E. Arenas, Sérgio Domingos, Pascal Stahl[3]	Phys. Chem. Chem. Phys. **22** (2020) 21474-21487.
$C_8H_{10}OS$	Methyl-p-tolyl-sulfoxide	Wenhao Sun	Experiments completed, Manuscript in prep.
$C_8H_{16}O_2$	Cyclohexane - methanol	Cristóbal Pérez, Mariyam Fatima	Experiments Completed: Manuscript in prep.
$C_8H_{18}O_2$	Tetrahydrofuran – *tert*-butylalcohol complex C_4H_8O-$C_4H_{10}O$	Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_9H_6N_4$	3,3-dimethyl-tetracyanocyclopropane	Sérgio Domingos Tiddo Mooibroek[7]	Manuscript submitted
$C_9H_{10}O_3$	α-Methoxyphenylacetic acid	Pablo Pinacho, María Mar Quesada-Moreno, Himanshi Singh	Experiments Completed: Manuscript in prep.
$C_{10}H_6$	1,2-diethynylbenzene	Donatella Loru, Amanda Steber	Assignment completed. Manuscript in preparation.
$C_{10}H_8O$	Acenaphthenone	Donatella Loru	Experiments Completed: Assignments Completed
$C_{10}H_{14}O$	(S)-5-Allyl-2-oxabicyclo[3.3.0]oct-8-ene	Wenhao Sun	Experiments Completed, Most Assignments Completed
$C_{10}H_{16}O_2$	(S)-5-Allyl-2-oxabicyclo[3.3.0]oct-8-ene-water complex	Wenhao Sun	Experiments Completed, Most Assignments Completed
$C_{10}H_{18}O_3$	(S)-5-Allyl-2-oxabicyclo[3.3.0]oct-8-ene-$(water)_2$ complex	Wenhao Sun	Experiments Completed, Most Assignments Completed
$C_{10}H_{20}O_4$	(S)-5-Allyl-2-oxabicyclo[3.3.0]oct-8-ene-$(water)_3$ complex	Wenhao Sun	Experiments Completed, Most Assignments Completed
$C_{10}H_{14}O_2$	6-Amyl-α-pyrone	Himanshi Singh, Mariyam Fatima, Cristobal Perez	Experiments completed. Some assignments completed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{10}H_{15}NO_2$	Camphor-oxime	Sérgio Domingos	Experiments Completed: Most Assignments Completed
$C_{10}H_{16}O$	Adamantanol (2–12, 75–110 GHz)	Sébastien Gruet	Experiments Completed: Most Assignments Completed
$C_{10}H_{17}N$	1-adamantylamine	Pablo Pinacho, Dan Obenchain[4]	Experiments Completed: Most Assignments Completed
$C_{10}H_{18}O$	Borneol	Pablo Pinacho, María Mar Quesada-Moreno,	Experiments Completed: Manuscript in prep.
$C_{10}H_{18}O$	Isoborneol	Pablo Pinacho, María Mar Quesada-Moreno,	Experiments Completed: Manuscript in prep.
$C_{10}H_{18}O_2$	Thujone - water complex $C_{10}H_{16}O$-H_2O	Cristóbal Pérez, Zbigniew Kisiel[8]	Experiments Completed: Manuscript in prep.
$C_{10}H_{20}O$	3,7-Dimethyloct-6-en-1-ol (citronellol)	Chris Medcraft[5], Sérgio Domingos Pablo Pinacho	Experiments Completed: Manuscript in prep.
$C_{10}H_{20}O_2$	Tetrahydrofuran - cyclohexanol complex C_4H_8O-$C_6H_{12}O$	Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed
$C_{10}H_{20}O_2$	Borneol - water complex $C_{10}H_{18}O$-H_2O	Pablo Pinacho, María Mar Quesada-Moreno	Experiments Completed: Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{10}H_{20}O_2$	Isoborneol - water complex $C_{10}H_{18}O$-H_2O	Pablo Pinacho, María Mar Quesada-Moreno	Experiments Completed: Manuscript in prep.
$C_{11}H_8O_2$	2-naphthol - CO complex $C_{10}H_8O$-(CO)	Daniel A. Obenchain, María Mar Quesada-Moreno	Experiments Completed: Manuscript in prep.
$C_{11}H_{11}F_3O_2$	Styrene oxide-3,3,3-trifluoro-1,2-epoxypropane C_8H_8O-$C_3H_3F_3O$	Sérgio Domingos, Anna Krin, Mark D. Marshall,[9] Helen O. Leung[9]	Experiments Completed: Manuscript in prep.
$C_{11}H_{11}N$	Benzene - pyridine complex; C_6H_6-C_5H_5N	Mariyam Fatima, Cristóbal Pérez, Barbara M. Giuliano[1]	Experiments Completed: Most Assignments Completed
$C_{11}H_{16}O_4S$	α-Methoxyphenylacetic acid - DMSO complex $C_9H_{10}O_3$-C_2H_6OS	Pablo Pinacho, María Mar Quesada-Moreno, Himanshi Singh	Experiments Completed: Manuscript in prep.
$C_{11}H_{18}O_2$	(S)-5-Allyl-2-oxabicyclo[3.3.0]oct-8-ene - methanol complex $C_{10}H_{14}O$-CH_3OH	Wenhao Sun	Experiments Completed, Most Assignments Completed
$C_{11}H_{20}O_2$	Camphor - methanol complex $C_{10}H_{16}O$-CH_4O	Mariyam Fatima, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_{12}H_8O$	Dibenzofuran	Mariyam Fatima, Cristóbal Pérez, Amanda Steber	Experiments Completed: Most Assignments Completed
$C_{12}H_9NO_3$	Naphthalimide	Sérgio Domingos	Experiments Completed: Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{12}H_{11}NO_4$	Naphthalimide - water complex	Sérgio Domingos	Experiments Completed: Manuscript in prep.
$C_{12}H_{10}$	Acenaphthene (75-110GHz)	Sébastien Gruet, Amanda L. Steber	Manuscript accepted (J. Mol. Spec)
$C_{12}H_{10}F_5NO_3$	N-alpha-Acetyl-L-pentafluorophenylalanine methyl ester	Daniel A. Obenchain[4], Pablo Pinacho	Experiments completed
$C_{12}H_{10}O$	Diphenylether	Chris Medcraft[5], Mariyam Fatima, Cristóbal Pérez	Phys. Chem. Chem. Phys.**,** 2020, **22**, 27966-27978.
$C_{12}H_{10}O$	Acenaphthenol	Donatella Loru, Amanda Steber, Daniel Rap[10]	Experiments Completed: Manuscript in prep.
$C_{12}H_{10}O$	2-Napthol - acetylene complex $C_{10}H_8O$-(HCCH)	María Mar Quesada-Moreno, Daniel A. Obenchain[4]	Experiments completed Manuscript in preparation.
$C_{12}H_{10}O$	Acenaphtylene - water complex	Amanda L. Steber	Experiments Completed: Manuscript in prep.
$C_{12}H_{12}O_2$	Acenaphtylene – $(water)_2$ complex	Amanda L. Steber	Experiments Completed: Manuscript in prep.
$C_{12}H_{11}N$	Naphthalene - acetonitrile complexes $C_{10}H_8$-$(CH_3CN)_n$	Donatella Loru, Amanda Steber	Experiment completed.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{12}H_{12}$	Acenaphthene – hydrogen complex	Amanda Steber	Experiments completed, Most assignments completed
$C_{12}H_{14}$	Acenaphthene – $(hydrogen)_2$ complex	Amanda Steber	Experiments completed, Most assignments completed
$C_{12}H_{12}O$	2-Napthol - ethylene complex $C_{10}H_8O$-(H_2CCH_2)	María Mar Quesada-Moreno, Daniel A. Obenchain[4]	Experiments completed Manuscript in preparation.
$C_{12}H_{12}O$	2-naphthol - acetylene complex $C_{10}H_8O$-(C_2H_2)	Daniel A. Obenchain[4], María Mar Quesada-Moreno	Assignments Completed Manuscript in prep.
$C_{12}H_{12}O_2$	Acenapthenol - water complex	Donatella Loru, Amanda Steber, Daniel Rap[10]	Experiments Completed: Manuscript in prep.
$C_{12}H_{14}O_3$	Acenapthenol – $(water)_2$ complex	Donatella Loru, Amanda Steber, Daniel Rap[10]	Experiments Completed: Manuscript in prep.
$C_{12}H_{16}O_4$	Acenapthenol – $(water)_3$ complexes	Donatella Loru, Amanda Steber, Daniel Rap[10]	Experiments Completed: Manuscript in prep.
$C_{12}H_{12}O_3$	Dibenzofuran - water complexes	Mariyam Fatima, Amanda L. Steber	PCCP 21 (2019) 16032. Further manuscript in prep.
$C_{12}H_{14}O_4$	Dibenzofuran – $(water)_2$ complexes	Mariyam Fatima, Amanda L. Steber	PCCP 21 (2019) 16032. Further manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{12}H_{14}O$	2-naphthol - ethylene complex; $C_{10}H_8O$-(C_2H_4)	Daniel A. Obenchain[4], María Mar Quesada-Moreno	Assignments Completed Manuscript in prep.
$C_{12}H_{14}O_3$	Diphenylether – $(water)_2$ complexes	Mariyam Fatima, Cristóbal Pérez	Phys. Chem. Chem. Phys., 2020, **22**, 27966-27978.
$C_{12}H_{16}O_4$	Diphenylether – $(water)_3$ complex	Mariyam Fatima, Cristóbal Pérez	Phys. Chem. Chem. Phys., 2020, **22**, 27966-27978.
$C_{12}H_{15}NO_3$	N-alpha-Acetyl-L-phenylalanine methyl ester	Daniel A. Obenchain[4], Pablo Pinacho	Experiments completed, Assignments completed, internal rotational analysis
$C_{10}H_{19}NO$	1-adamantylamine - water complex; $C_{10}H_{17}N$-H_2O	Pablo Pinacho Dan Obenchain[4]	Experiments Completed: Most Assignments Completed
$C_{12}H_{22}O_2$	Menthyl acetate	Anna Krin, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_{12}H_{22}O_2$	Camphor - ethanol complex	Mariyam Fatima, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_{14}H_{28}O_3$	Camphor – $(ethanol)_2$ complexes	Mariyam Fatima, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_{12}H_{24}O_2S$	Borneol - DMSO complex $C_{10}H_{18}O$-C_2H_6OS	Pablo Pinacho, María Mar Quesada-Moreno	Experiments Completed: Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{12}H_{24}O_2S$	Isoborneol - DMSO complex $C_{10}H_{18}O$-C_2H_6OS	Pablo Pinacho, María Mar Quesada-Moreno	Experiments Completed: Manuscript in prep.
$C_{12}H_{26}O_7$	18-Crown-6 - water complex; $C_{12}H_{24}O_6$-H_2O	Cristóbal Pérez, Juan Carlos Lopez[6]	Experiments Completed: Manuscript in prep.
$C_{12}H_{30}O_3$	*tert*-butylalcohol trimer $(C_4H_{10}O)_3$	Cristóbal Pérez, Mariyam Fatima, Pablo Pinacho	Experiments Completed: Most Assignments Completed
$C_{16}H_{40}O_4$	*tert*-butylalcohol tetramer $(C_4H_{10}O)_4$	Cristóbal Pérez, Mariyam Fatima, Pablo Pinacho	Experiments Completed: Most Assignments Completed
$C_{13}H_{10}O$	Xanthene	Donatella Loru	Experiments Completed: Most Assignments Completed
$C_{13}H_{11}NO$	Phenanthridine - water complex	Amanda L. Steber, Cristóbal Pérez, Sébastien Gruet, Donatella Loru Pablo Pinacho	Phys. Chem. Chem. Phys., (2021), DOI: 10.1039/d1cp00898f.
$C_{13}H_{13}NO_2$	Phenanthridine – $(water)_2$ complex	Amanda L. Steber, Cristóbal Pérez, Sébastien Gruet, Donatella Loru Pablo Pinacho	Phys. Chem. Chem. Phys., (2021), DOI: 10.1039/d1cp00898f.
$C_{13}H_{12}$	Fluorene - hydrogen complex; $C_{13}H_{10}$-(H_2)	Amanda Steber	Experiments completed, Most assignments completed

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{13}H_{12}O$	Fluorene - water complexes	Amanda L. Steber, Sébastien Gruet	Assignments complete: Manuscript in prep.
$C_{13}H_{14}O_2$	Fluorene – $(water)_2$ complexes	Amanda L. Steber, Sébastien Gruet	Assignments complete: Manuscript in prep.
$C_{13}H_{16}O_3$	Fluorene – $(water)_3$ complexes	Amanda L. Steber, Sébastien Gruet	Assignments complete: Manuscript in prep.
$C_{13}H_{12}O_2$	Benzophenone - water complex	Weixing Li, Pablo Pinacho, María Mar Quesada-Moreno	Angew. Chem. Int. Ed. 60 (2021) 5323-5330.
$C_{13}H_{14}O_3$	Benzophenone – $(water)_2$ complex	Weixing Li, Pablo Pinacho, María Mar Quesada-Moreno	Angew. Chem. Int. Ed. 60 (2021) 5323-5330.
$C_{13}H_{16}O_4$	Benzophenone – $(water)_3$ complexes	Weixing Li, Pablo Pinacho, María Mar Quesada-Moreno	Angew. Chem. Int. Ed. 60 (2021) 5323-5330.
$C_{13}H_{14}N_4O$	3,3-dimethyl-tetracyanocyclopropane - tetrahydrofuran	Sérgio Domingos Tiddo Mooibroek[7]	Manuscript submitted
$C_{13}H_{24}O_3$	Camphor - 1,2-propanediol complex $C_{10}H_{16}O$-$C_3H_8O_2$	Cristóbal Pérez, Anna Krin, Mariyam Fatima	Experiments Completed: Most Assignments Completed
$C_{14}H_{12}O$	Phenanthrene - water complexes	Amanda L. Steber, Cristóbal Pérez, Sébastien Gruet, Donatella Loru Pablo Pinacho	Phys. Chem. Chem. Phys., (2021), DOI: 10.1039/d1cp00898f.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{14}H_{14}O_2$	Phenanthrene – $(water)_2$ complexes	Amanda L. Steber, Cristóbal Pérez, Sébastien Gruet, Donatella Loru Pablo Pinacho	Phys. Chem. Chem. Phys., (2021), DOI: 10.1039/d1cp00898f.
$C_{14}H_{12}O_2$	2-naphthol - furan complex $C_{10}H_8O$-(C_4H_4O)	Daniel A. Obenchain[4], María Mar Quesada-Moreno	Experiments Completed: Manuscript in prep.
$C_{14}H_{12}OS$	2-naphthol - thiophene complex $C_{10}H_8O$-(C_4H_4S)	Daniel A. Obenchain[4], María Mar Quesada-Moreno	Experiments Completed: Manuscript in prep.
$C_{14}H_{13}BrO$	Styrene oxide - bromobenzene complex C_8H_8O-C_6H_5Br	Daniel A. Obenchain[4], Cristobal Perez	Assignments complete Manuscript in prep.
$C_{14}H_{13}IO$	Styrene oxide - iodobenzene complex C_8H_8O-C_6H_5I	Daniel A. Obenchain[4], Cristobal Perez	Assignments and NQCC analyses ongoing
$C_{14}H_{16}O_2$	Benzyl alcohol dimer $(C_7H_8O)_2$	Cristóbal Pérez, Mariyam Fatima, Pablo Pinacho	Experiments Completed: Manuscript in prep.
$C_{14}H_{22}O_2$	Cyclohexane - methanol-benzyl alcohol complex $C_7H_{14}O$-C_7H_8O	Cristóbal Pérez, Mariyam Fatima, Pablo Pinacho	Experiments Completed: Manuscript in prep.
$C_{14}H_{25}NO_2$	Camphor-imine - water complex; $C_{14}H_{23}NO$-H_2O	Sérgio Domingos, Pablo Pinacho	Experiments Completed: Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{14}H_{28}O_2$	Cyclohexane - methanol dimer; $(C_7H_{14}O)_2$	Cristóbal Pérez, Mariyam Fatima, Pablo Pinacho	Experiments Completed: Manuscript in prep.
$C_{15}H_{16}O_2$	Acetophenone - benzyl alcohol complex C_8H_8O-C_7H_8O	Eva Gougoula Himanshi Singh	Experiments Complete Tentative Assignment
$C_{16}H_{13}N$	Phenanthrene - acetonitrile complexes $C_{14}H_{10}$-$(CH_3CN)_n$	Donatella Loru, Amanda Steber	Experiment completed.
$C_{16}H_{14}O$	2-naphthol - benzene complex; $C_{10}H_8O$-(C_6H_6)	Daniel A. Obenchain[4], María Mar Quesada-Moreno Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed
$C_{16}H_{16}O_2$	Styrene oxide dimer $(C_8H_8O)_2$	Sérgio Domingos, Cristobal Perez	Manuscript accepted (Communications Chem.)
$C_{16}H_{16}O_2$	2-naphthol - dimethylfuran complex $C_{10}H_8O$-(C_6H_8O)	Daniel A. Obenchain[4], María Mar Quesada-Moreno	Experiments Completed: Manuscript in prep.
$C_{16}H_{20}O$	Carvone - Benzene complex $C_{10}H_{14}O$-C_6H_6	Weixing Li, María Mar Quesada-Moreno, Pablo Pinacho	Experiments Completed: Most Assignments Completed
$C_{16}H_{26}O$	(S)-5-Allyl-2-oxabicyclo[3.3.0]oct-8-ene - cyclohexane complex $C_{10}H_{14}O$-C_6H_{12}	Wenhao Sun	Experiments Completed, Most Assignments Completed
$C_{18}H_{11}F$	2-F-Tetrahelicene	Sérgio Domingos	Experiments Completed: Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{18}H_{22}O$	4-Methylbenzylidene	Cristóbal Pérez, Anna Krin	Experiments Completed: Manuscript in prep.
$C_{20}H_{30}O$	Diadamantyl ether	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. 26 (2020) 10817-10825.
$C_{20}H_{32}O_2$	Diadamantyl ether - water complex	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. 26 (2020) 10817-10825.
$C_{20}H_{34}O_3$	Diadamantyl ether – $(water)_2$ complex	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. 26 (2020) 10817-10825.
$C_{20}H_{36}O_4$	Diadamantyl ether – $(water)_3$ complex	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. 26 (2020) 10817-10825.
$C_{20}H_{34}O_2$	Camphor - fenchol complex $C_{10}H_{16}O$-$C_{10}H_{18}O$	Mariyam Fatima, María Mar Quesada-Moreno, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_{20}H_{34}O_2$	Fenchone - fenchol complexes $C_{10}H_{16}O$-$C_{10}H_{18}O$	Daniel A. Obenchain[4], Pablo Pinacho	Experiments Completed: Manuscript in prep.
$C_{20}H_{36}O_2$	Borneol dimer $(C_{10}H_{18}O)_2$	Pablo Pinacho, María Mar Quesada-Moreno, Rizalina Tama Saragi[6]	Experiments Completed: Manuscript in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{20}H_{36}O_2$	Isoborneol dimer $(C_{10}H_{18}O)_2$	Pablo Pinacho, María Mar Quesada-Moreno,	Experiments Completed: Manuscript in prep.
$C_{20}H_{40}O_2$	Menthol dimer $(C_{10}H_{20}O)_2$	Cristóbal Pérez	Experiments Completed: Most Assignments Completed
$C_{22}H_{36}O_2$	Diadamantyl ether - EtOH complex $C_{20}H_{30}O$-C_2H_6O	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. 26 (2020) 10817-10825.
$C_{24}H_{20}O_2$	Acenaphthenol dimer $(C_{12}H_{10}O)_2$	Donatella Loru, Amanda Steber, Daniel Rap[10]	Experiments Completed: Manuscript in prep.
$C_{24}H_{22}O$	Acenaphthene dimer - water complex $(C_{12}H_{10})_2$-H_2O	Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_{24}H_{24}O_2$	Acenaphthene dimer – $(water)_2$ complex $(C_{12}H_{10})_2$-$(H_2O)_2$	Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_{24}H_{26}O_3$	Acenaphthene dimer – $(water)_3$ complex $(C_{12}H_{10})_2$-$(H_2O)_3$	Amanda L. Steber, Cristóbal Pérez	Experiments Completed: Manuscript in prep.
$C_{24}H_{40}O_2$	Diadamantyl ether - *tert*-butylalcohol complex $C_{20}H_{30}O$-$C_4H_{10}O$	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. 26 (2020) 10817-10825.
$C_{26}H_{30}F_6O$	Diadamanthyl ether - hexafluorobenzene complex; $C_{20}H_{30}O$-(C_6F_6)	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. DOI: 10.1002/chem.202100078

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{26}H_{35}FO$	Diadamanthyl ether – monofluorobenzene complex $C_{20}H_{30}O$-(C_6H_5F)	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. DOI: 10.1002/chem.202100078
$C_{26}H_{36}O$	Diadamanthyl ether - benzene complex $C_{20}H_{30}O$-(C_6H_6)	María Mar Quesada-Moreno, Pablo Pinacho, Cristóbal Pérez	Chem. Eur. J. DOI: 10.1002/chem.202100078
H_8S_3O	$(H_2S)_3$ – water complex	Cristóbal Pérez, Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed
$H_{10}SO_4$	H_2S – $(water)_4$	Cristóbal Pérez, Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed
$H_{10}S_4O$	$(H_2S)_4$ - water	Cristóbal Pérez, Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed
$H_{12}S_3O_3$	$(H_2S)_3$ – $(water)_3$	Cristóbal Pérez, Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed: Most Assignments Completed
$H_{12}S_6$	H_2S hexamer $(H_2S)_6$	Cristóbal Pérez, Pablo Pinacho, Rizalina Tama Saragi[6]	Experiments Completed, assignment completed

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_7ClO	2-chloroethyl methyl Ether; $ClCH_2CH_2OCH_3$	Riffe, Shipman	Refining fits of excited vibrational states.
C_4H_8O	1,2-epoxybutane $CH_2(O)CHCH_2CH_3$	Johnson, Riffe, Shipman	Refining fits of excited vibrational states.
ANALYSIS/DATABASE	AUTOFIT	Pate[a], Seifert[b], Finneran[c], Shipman	Code Editing

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_{10}ArS_2$	diethyl disulfide-Ar complex	T. Lu,[g] J. Zhang,[g] J.-U Grabow,[f] G.Feng[g]	J. Chem. Phys. **154**, 124306 (2021)
$C_5H_{12}OS_2$	Diethyl disulfide-formaldehyde complex	T. Lu,[g] J. Zhang,[g] X. Li,[g] J.-U Grabow,[f] S. Herbers,[f] G.Feng[g]	Angew Chem Int Edit, **60**(11), 5838-5842, (2021)
$C_4H_{12}OS_2$	Diethyl disulfide-water complex	T. Lu,[g] J. Zhang,[g] X. Li,[g] J.-U Grabow,[f] S. Herbers,[f] G.Feng[g]	Angew Chem Int Edit, **60**(11), 5838-5842, (2021)
$C_5H_{13}NOS_2$	Diethyl disulfide-formamide complex	T. Lu,[g] J. Zhang,[g] X. Li,[g] J.-U Grabow,[f] S. Herbers,[f] G.Feng[g]	Angew Chem Int Edit, **60**(11), 5838-5842, (2021)
C_7H_6ClF	2-chloro-4-fluorotoluene	K.P.R. Nair,[f,l] J.-U Grabow,[f] S. Herbers,[f] A. Lesarri,[i] H. V. L. Nguyen,[m,n]	*Spectrochim Acta A*, **247***,119120, (2021)*
C_7H_5ClO	4-chloro-benzaldehyde	M. Dohmen, P. Pinacho,[a] M. Schnell[a,b]	^{13}C Isotope assignments complete

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_7H_5ClO	3-chloro-benzaldehyde	M. Dohmen, S. Arnold,[c] G. G. Brown[c]	Chlorine isotope assignment complete, ^{13}C in progress
C_7H_5ClO	2-chloro-benzaldehyde	M. Dohmen, S. Arnold,[c] G. G. Brown[c]	Chlorine isotope assignment complete, ^{13}C in progress
C_7H_5ClO	Ne···4-chloro-benzaldehyde complex	M. Dohmen, P. Pinacho[a], M. Schnell[a,b]	Assignment of chlorine isotopes
$C_2Br_2F_2$	Dibromodifluoromethane	J. A. Signore,[d] C. Falls,[d] W.C. Pringle,[d] S. E. Novick,[d] S. A. Cooke,[e] J.-U Grabow[f]	Bromine isotopes complete, ^{13}C in progress
C_4H_6O	Furan – hydrogen complex C_4H_4O-(H_2)	Pablo Pinacho,[a] M. Schnell[a,b]	Experiments completed; most assignments completed
$AgClD_2$	Deuterium-silver chloride complex D_2-AgCl	G. S. Grubbs II,[h] D. S. Frank,[d] H. M. Pickett,[d] S. E. Novick[d]	Manuscript in prep
AgClDH	HD-silver chloride complex HD-AgCl	G. S. Grubbs II,[h] D. S. Frank,[d] H. M. Pickett,[d] S. E. Novick[d]	Manuscript in prep
$C_4H_6F_4S_3$	2,2,4,4-tetrafluoro1,3-dithiethane··· dimethylsulfide	A. Melli,[j,k] L. Spada,[j,k] M. Juanes,[i] A. Lesarri,[i] C. Puzzarini,[j] J.-U Grabow,[f]	Experiments completed; assignments in progress
$C_6H_3F_3O$	3,4,5-trifluorophenol	K.P.R. Nair,[f,l] P. Buchman,[f] J.-U Grabow,[f]	^{13}C isotopologues assigned

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_4BrNO_2$	N-bromosuccinimide	P. Buschmann,[f] K. Lengsfeld,[f] S. Genuit,[f] J.-U Grabow[f]	N, Br nq-hfs, spectra assigned
$C_4H_4ClNO_2$	N-chlorosuccinimide	P. Buschmann,[f] K. Lengsfeld,[f] S. Genuit,[f] J.-U Grabow[f]	N, Cl nq-hfs, analysis in progress
$C_4H_5NO_2$	Succinimide	S. Herbers,[f] J.-U Grabow,[f] D. McNaughton[o]	N nq-hfs, analysis in progress
$C_5H_4O_3$	itaconic anhydride	S. Herbers,[f] C. Höhne,[f] P. Buschmann,[f] J.-U Grabow,[f] D. McNaughton[o]	rot. spec., cd analysis in progress
C_9H_7NO	8-hydroxyquinoline	P. Kraus,[q] J. Wang, [g] S. Herbers,[f] D. Wachsmuth,[f] J.-U Grabow,[f] D. McNaughton[o]	All isotope; assignements complete; manuscript completed
$C_{14}H_{13}BrO$	styrene oxide – bromobenzene complex C_8H_8O-C_6H_5Br	C. Pérez,[a] M. Schnell[a,b]	Assignments complete; manuscript in prep
$C_{14}H_{13}IO$	styrene oxide – iodobenzene complex C_8H_8O-C_6H_5I	C. Pérez,[a] M. Schnell[a,b]	Assignments complete; manuscript in prep
$C_{14}H_{12}O_2$	2-naphthol - furan complex $C_{10}H_8O$-(C_4H_4O)	M. M. Q. Moreno,[a] M. Schnell[a,b]	Experiments completed; manuscript in prep

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{16}H_{16}O_2$	2-naphthol - dimethylfuran complex; $C_{10}H_8O$-(C_6H_8O)	M. M. Q. Moreno,[a] M. Schnell[a,b]	Experiments completed; manuscript in prep
$C_{14}H_{12}OS$	2-naphthol - thiophene complex; $C_{10}H_8O$-(C_4H_4S)	M. M. Q. Moreno,[a] M. Schnell[a,b]	Experiments completed; manuscript in prep
$C_{11}H_8O_2$	2-naphthol - CO complex $C_{10}H_8O$-(CO)	M. M. Q. Moreno,[a] M. Schnell[a,b]	Experiments completed; manuscript in prep
$C_{12}H_{10}O$	2-naphthol – acetylene complex; $C_{10}H_8O$-(HCCH)	M. M. Q. Moreno,[a] M. Schnell[a,b]	Experiments completed; manuscript in prep.
$C_{12}H_{12}O$	2-naphthol – ethylene complex $C_{10}H_8O$-(H_2CCH_2)	M. M. Q. Moreno,[a] M. Schnell[a,b]	Experiments completed; manuscript in prep.
$C_{16}H_{14}O$	2-naphthol - benzene complex; $C_{10}H_8O$-(C_6H_6)	M. M. Q. Moreno,[a] R. T. Saragi,[i] A. Lesarri,[i] M. Schnell[a,b]	Experiments completed: most assignments completed
$C_3H_4F_2$	difluoromethane - acetylene complex $CH_2F_2\cdots HCCH$	D. L. Jukowski,[p] A. J. Thomas,[p] R. A. Peebles,[p] S. A. Peebles[p]	Normal and ^{13}C isotopologues assigned; dipole moment, benchmarking, Manuscript in preperation
$C_3H_6F_2$	difluoromethane - ethylene complex; $CH_2F_2\cdots H_2CCH_2$	R. A. Peebles,[p] S. A. Peebles[p]	Normal isotopologue assigned; lam

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_2ClFO_2$	chlorofluoromethane - carbon dioxide complex $CH_2ClF\cdots CO_2$	C. L. Christenholz,[p] R. A. Peebles,[p] S. A. Peebles[p]	^{35}Cl, ^{37}Cl isotopologues assigned; lam

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_6H_7NO	2-aminophenol	K. Byerly G. A. Laubacher[1] M. J. Tubergen	Spectrum recorded; assignment in progress.
$C_7H_8O_2$	guaiacol	A. Fox M. J. Tubergen R. M. Gurusinghe[2]	Spectrum and ^{13}C isotopomers assigned, argon spectrum assigned; manuscript in prep.
C_3H_9NO	2-methoxyethylamine	N. Harper[3] B. Basenback[4] R. M. Gurusinghe[2] M. J. Tubergen	^{13}C isotopomers and water complex spectrum assigned. manuscript in preparation
$C_3H_{11}NO_2$	N-methyl-2-aminoethanol-water	D. Valente[5] D. Marasinghe M. J. Tubergen	spectrum assigned. Manuscript in preparation.
C_9H_{10}	α-Methylstyrene, cis-β-Methylstyrene Trans-β-Methylstyrene	R. M. Gurusinghe[2] M. J. Tubergen	Spectra assigned including internal rotation. Manuscript in preparation.
$C_6H_{13}NO_2$	valine methyl ester	D. Marasinghe M. J. Tubergen	Spectrum assigned.
$C_3H_6ArO_2$	glycidol-argon	R. Wooten-Moyer[6] M. J. Tubergen	Spectrum assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_6SO	thiophene monohydrate C_4H_4S-H_2O	W. Silva	J. Phys. Chem. A in press (2021)
$C_6H_{11}N$	diallylamine	W. Silva, G. Daudet S. Perez, S. Thorwirth	J. Chem. Phys. in press (2021)
$C_4H_{11}NO$	*N*-allylmethylamine monohydrate C_4H_9N-H_2O	W. Silva, T. Poonia	PCCP **23** (2021) 7368.
$C_4H_5NO_2$	methyl cyanoacetate	C. Gregory, W. Silva	J. Mol. Spec. **377** (2021) 111444.
C_6H_6FN	2-fluoroaniline	T. Poonia, W. Silva	J. Mol. Struct. **1225** (2021) 129100.
C_4H_9N	*N*-allylmethylamine	W. Silva, T. Poonia	ChemPhysChem **21** (2020) 2515.
$C_5H_4O_2$	3-furaldehyde	C. Gregory	J. Mol. Spec. **373** (2020) 111374.
C_4H_5NS	allyl isothiocyanate	J. Stitsky, W. Silva W. Sun	J. Phys. Chem. A. **124** (2020) 3876.
$C_6H_{10}S$	diallylsulfide	T. Poonia, W. Silva	manuscript in preparation
$C_6H_{10}O$	diallylether	T. Poonia, W. Silva	manuscript in preparation
$C_3H_8O_2$	trimethylene oxide monohydrate C_3H_6O-H_2O	W. Silva	manuscript in preparation
$C_3H_{10}O_3$	trimethylene oxide Dihydrate C_3H_6O-$(H_2O)_2$	W. Silva	manuscript in preparation

NAME OF FORMULA	NAME OF COMPOUND	INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_8SO	trimethylene sulfide monohydrate C_3H_6S-H_2O	W. Silva	manuscript in preparation
$C_4H_2Cl_2S$	2,5-dichlorothiophene	G. Daudet	manuscript in preparation
$C_9H_{15}N$	triallylamine	G. Daudet	parent assigned
$C_5H_{10}O_2$	tetrahydrofurfuryl alcohol	W. Silva	assigned incl. ^{13}C str. analysis in progress
$C_5H_{12}O_3$	tetrahydrofurfuryl alcohol monohydrate $C_5H_{10}O_2$-H_2O	W. Silva	parent assigned
$C_5H_{11}NO$	tetrahydrofurfuryl amine	W. Silva	parent assigned
C_8H_7NO	benzyl isocyanate	J. Stitsky	str. analysis in progress
C_8H_7NS	benzyl isothiocyanate	J. Stitsky	str. analysis in progress
C_8H_7F	2-fluorostyrene	S. Stephens	str. analysis in progress
C_8H_7F	4-fluorostyrene	S. Stephens	str. analysis in progress
C_3H_6S	trimethylene sulfide (thietane)	D. Desmond	MW assigned incl. ^{13}C, ^{34}S, ^{33}S far IR in progress
C_3H_6O	trimethylene oxide (oxetane)	D. Desmond O. Mahassneh	MW assigned incl. ^{13}C, ^{18}O far IR paper in preparation

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(Entries marked with * are collaborative studies between this laboratory and that of A. C. Legon, School of Chemistry, University of Bristol, Cantock's Close, BRISTOL BS8 1TS, UK)

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
CH_3F_3IP	$H_3P\cdots ICF_3$	S. L. Stephens*	Spectrum assigned.
CH_4ArN_2O	$CH_4N_2O\cdots Ar$ (urea-argon complex)	C. Medcraft	Spectrum assigned.
CH_4NOP	$OCNH_2PH_2$ (phosphine carboxamide)	E. Gougoula	Spectra of isotopologues assigned
CH_4ArNOP	$OCNH_2PH_2\cdots Ar$ (phosphine carboxamide-argon complex)	E. Gougoula	Spectra of isotopologues assigned
CH_4ArN_2S	$CH_4N_2S\cdots Ar$ (thiourea-argon complex)	C. Medcraft	Spectrum assigned.
CH_6N_2OS	$CH_4N_2S\cdots H_2O$ (thiourea-water complex)	C. Medcraft	Spectrum assigned.
C_2H_2AgI	$C_2H_2\cdots Ag{-}I$	S. L. Stephens*	Spectrum assigned.
C_2H_2CuF	$C_2H_2\cdots Cu{-}F$	S.L. Stephens, D.P. Zaleski*	Spectrum assigned, isotopic work.
C_2H_2CuI	$C_2H_2\cdots Cu{-}I$	S. L. Stephens, D. Bittner*	Spectrum assigned.
C_2H_4AgF	$C_2H_4\cdots Ag{-}F$	S. L. Stephens*	Spectrum assigned.
C_2H_4AgI	$C_2H_4\cdots Ag{-}I$	S. L. Stephens*	Spectrum assigned.
C_2H_4AuI	$C_2H_4\cdots Au{-}I$	S. L. Stephens, M. Sprawling, D. P. Zaleski*	Spectra of isotopologues assigned,
C_2H_4CuF	$C_2H_4\cdots Cu{-}F$	S. L. Stephens*	Spectrum assigned.
C_2H_4CuI	$C_2H_4\cdots Cu{-}I$	S. L. Stephens*	Spectrum assigned.
$C_3H_2F_3I$	$C_2H_2\cdots ICF_3$	S. L. Stephens*	Manuscript in preparation
$C_3H_3N_3O_2$	4(5)-nitroimidazole	E. Gougoula	Spectrum assigned
$C_3H_6N_2O$	$C_3H_4N_2\cdots H_2O$ (imidazole-water complexes)	E. Gougoula, D. J. Cole	J. Phys. Chem A, **124**, 2649 (2020)

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
C_3H_9AgNI	$(CH_3)_3N\ldots Ag–I$	D. Bittner, S. L. Stephens*	Spectrum assigned. Manuscript in preparation
$C_3H_9F_6NS$	$(CH_3)_3N\ldots SF_6$	D. Bittner*	Spectrum assigned
C_3H_5NOS	$C_3H_3NS\cdots H_2O$ (thiazole-water complex)	E. Gougoula	Spectra of isotopologues assigned
$C_3H_7NO_2S$	$C_3H_3NS\cdots(H_2O)_2$ (thiazole-$(water)_2$ complex; 2 isomers)	E. Gougoula	Spectra of isotopologues assigned
$C_3H_9NO_3S$	$C_3H_3NS\cdots(H_2O)_2$ (thiazole-$(water)_3$ complex)	E. Gougoula	Spectrum assigned
$C_4H_3BrN_2$	5-bromoopyrimidine	E. Gougoula	Spectrum assigned
$C_4H_3ClN_2$	2-chloropyrimidine	E. Gougoula	Spectrum assigned
$C_4H_5N_3$	2-aminopyrimidine	E. Gougoula	Spectrum assigned
$C_4H_5N_3O_2$	2-methyl-4(5)-nitroimidazole	E. Gougoula	Spectrum assigned
$C_4H_6ArN_2$	1-methylimidazole-argon complex	C. Medcraft, J. Heitkämper, E. Gougoula	Manuscript in preparation
$C_4H_6Ar_2N_2$	1-methylimidazole-$(argon)_2$ complex	E. Gougoula, R. Paget	Spectrum assigned
$C_4H_6ArN_2$	2-methylimidazole-argon complex	E. Gougoula, C. Medcraft	Manuscript in preparation
$C_4H_6ArN_2$	4-methylimidazole-argon complex	E. Gougoula, C. Medcraft	Manuscript in preparation.
$C_4H_6ArN_2$	5-methylimidazole-argon complex	E. Gougoula, C. Medcraft	Manuscript in preparation
C_4H_6O	Crotonaldehyde (2-butenal; 3 conformers)	C. Medcraft, E. Gougoula	Manuscript in preparation
$C_4H_6N_2S$	Thiamazole (methimazole)	E. Gougoula, C. Lacey	Spectra of isotopologues assigned.
$C_4H_6ArN_2S$	Thiamazole-argon complex	E. Gougoula, C. Lacey	Spectrum assigned
$C_4H_8N_2O$	1-methylimidazole-water complex	C. Medcraft, J. Heitkämper, E. Gougoula	Spectra of isotopologues assigned
$C_4H_{10}N_2O_2$	1-methylimidazole-$(water)_2$ complex	E. Gougoula, R. Paget	Spectrum assigned. Isotopic work in progress
$C_4H_8N_2O$	2-methylimidazole-water complex	E. Gougoula, C. Medcraft	Spectra of isotopologues assigned.
$C_4H_8N_2O$	4-methylimidazole-water complex	E. Gougoula, C. Medcraft	Spectra of isotopologues assigned.
$C_4H_8N_2O$	5-methylimidazole-water complex	E. Gougoula, C. Medcraft	Spectra of isotopologues assigned.

FORMULA	**NAME OF COMPOUND**	**NAME OF INVESTIGATOR**	**PRESENT STAGE OF PROGRESS**
$C_4H_8N_2OS$	Thiamazole-water complex	E. Gougoula, C. Lacey	Spectra of isotopologues assigned
$C_4H_8N_4O$	$CH_4N_2O…C_3H_4N_2$ (urea-imidazole complex)	S. Blanco (Valladolid), J.C. Mullaney, C. Medcraft*	Spectrum assigned, isotopic work.
$C_4H_9NS_2$	$N(CH_3)_3…CS_2$	E. Gougoula, C. Medcraft*	Manuscript in preparation
$C_6H_8N_2O_3$	*Trans*-urocanic Acid-water complex	G. Cooper, C. Medcraft, E. Gougoula	Spectrum assigned, isotopic work in progress
$C_6H_{10}O_3$	Tetrahydrofuran -acetic acid complex	D.P. Zaleski, A. King	Spectrum assigned, isotopic work in progress.
$C_8H_9N_3$	$C_3H_4N_2\cdots C_5H_5N$ (imidazole-pyridine complex)	E. Gougoula, R. Paget	Spectrum assigned, isotopic work in progress
$C_9H_8N_2$	2-phenylimidazole	E. Gougoula	Spectrum assigned
CClFPt	FCPtCl	D. Bittner, G. Cooper, C. Medcraft*	Spectra of isotopologues assigned.
CF_2Pt	FCPtF	D. Bittner, G. Cooper, C. Medcraft*	Spectra of isotopologues assigned.
AuBrKr	Kr…Au−Br	J. Thomas	Further isotopic species. (With M.C.L. Gerry, Vancouver).
AuH_3IN	$H_3N…Au–I$	D. Bittner, S.L. Stephens*	Spectrum assigned.
FIPt	FPtI	D. Bittner, G. Cooper, C. Medcraft*	Spectra of isotopologues assigned.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS*
$C_2H_2O_3$	formic acid anhydride $(H(C=O)-)_2O$	A. Walters[1], J.-C. Guillemin[2], H. S. P. Müller[3] *et al*	70-120 GHz: measurements completed; v=0, v_{11}=1, v_{14}=1, v_{15}=1,2,3,4,5 analysis in progress and completed for v=0. 248-376 GHz: measurements completed; analysis of v=0 in progress.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_4O_3$	Pyruvic Acid $CH_3COCOOH$	Susanna Widicus Weaver Connor Wright Alec Kroll[1]	Submm spectrum acquired, assignment in progress
CH_5N	Methylamine CH_3NH_2	Susanna Widicus Weaver Alec Kroll[1] Connor Wright	Submm spectrum acquired, excited vibrational state assignment in progress
CH_4N	Aminomethyl Radical $CH_2NH_2^{\cdot}$	Susanna Widicus Weaver Connor Wright John Stanton[2]	Submm spectral acquisition and assignment in progress
CH_5NO	Aminomethanol $HOCH_2NH_2$	Susanna Widicus Weaver Hayley Bunn Chase Schultz Brian Hays[3]	Submm spectral acquisition and assignment in progress
$C_2H_4O_3$	Glycolic Acid $CH_3COCOOH$	Susanna Widicus Weaver Chase Schultz	Submm spectrum acquired. Assignment in progress
C_3H_5OCl	2-chloroethanol $HOCH_2CH_2Cl$	Susanna Widicus Weaver Hayley Bunn	Submm spectrum acquired. Assignment in progress
$C_4H_6O_2$	Diacetyl $(CH_3CO)_2$	Susanna Widicus Weaver Jonathan Rebelsky Chase Schultz	Submm spectral acquisition and assignment in progress
CH_4ArO	Argon Methanol Cluster $Ar\text{-}H_3COH$	Susanna Widicus Weaver Kevin Roenitz Connor Wright	Submm spectral acquisition and assignment in progress
H_2CO_3	Carbonic acid	Susanna Widicus Weaver Chase Schultz Hayley Bunn Colton Moore	Theoretical studies, modeling, and spectral predictions complete, mm/submm spectral acquisition in progress.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_2NCOOH	Carbamic acid	Susanna Widicus Weaver Chase Schultz Hayley Bunn Colton Moore	Theoretical studies, modeling, and spectral predictions complete, mm/submm spectral acquisition in progress.
EXPERIMENTAL	Products of UV photolyzed methanol (CH_3OH) ice Sublimation of Laboratory Ices Millimeter/submillimeter Experiment (SubLIME)	Susanna Widicus Weaver Katarina Yocum Will Thompson Gustavo Cruz-Diaz Stefanie Milam[4] Perry A. Gerakines[4]	Yocum, Milam, Gerakines, Widicus Weaver. *ApJ*, 2021, *accepted*.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CHN	hydrogen cyanide HCN	F. Rohart[1]	lineshape analysis in progress Manuscript in preparation
CHN	hydrogen isocyanide $H^{15}NC$; $H^{15}N^{13}C$ $D^{15}NC$; $D^{15}N^{13}C$; $H^{14}N^{13}C$; $D^{14}N^{13}C$	S. Bailleux[1], P. Kania[13], G. Wlodarczak[1]	spectrum assigned (mm+THz) Manuscript in preparation
CH_2	methylene radical	S. Bailleux[1], H. Ozeki[14]	spectrum assigned (THz) Manuscript in preparation
CHD	methylene radical	S. Bailleux[1], H. Ozeki[14]	spectrum assigned (THz) Manuscript in preparation
CD_2	methylene radical	S. Bailleux[1], H. Ozeki[14]	spectrum assigned (THz) Manuscript in preparation
C_2H_3N	methyl cyanide CH_3CN	F. Rohart[1] L. Zu[1] L. Margulès[1] R.A. Motiyenko[1]	Lineshape analysis in progress
CH_3NO	Nitrosomethane CH_3NO	L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2]	MM spectra+SMM spectra; internal rotation Analysis in progress
CH_3NO	Formaldoxime CH_2NOH	L. Zou[1] L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2]	MM spectra+SMM spectra; A&A, in press (2021)

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_3NS	Thioformamide NH_2CHS	R. A. Motiyenko[1] L. Margulès[1], J.-C. Guillemin[2]	MM spectra+SMM spectra; Manuscript in preparation
CH_4O	Methanol CHD_2OH	L. Coudert[6], L. Margulès[1], R. A. Motiyenko[1]	MM+SMM+THz spectra; internal rotation Analysis in progress
$C_2HO_2F_3$	Trifluoroacetic acid	L. Zou[1] L. Margulès[1], R. A. Motiyenko[1]	MM+SMM+THz spectra; internal rotation Analysis in progress
C_2H_3NO	hydroxy-acetonitrile $HO^{13}CH_2CN$, $HOCH_2{}^{13}CN$, $DOCH_2CN$	L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2]	MM spectra+SMM spectra; tunnelling Analysis in progress
$C_2H_3NO_2$	methoxy-isocyanate H_3ONCO	A. Pienkina[1] L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2] J. Cernicharo[4]	MM spectra Manuscript in preparation
C_2H_4S	Thioacetaldehyde CH_3CHS	L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2] V. Illyushin[3]	MM spectra+SMM spectra; *J. Mol. Spectrosc.* 371, 111304 (2020)
C_2H_5N	Ethaneimine CH_3CHNH	L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2] B. Mc Guirre[8] A. Remijan[8]	MM spectra internal rotation Manuscript in preparation
C_2H_6O	Dimethyl-Ether CHD_2-O-CH_3	C. Richard[15] J.-C. Guillemin[2] R. A. Motiyenko[1] L. Margulès[1]	THz spectra Internal rotation Manuscript in preparation
C_2H_6O	Dimethyl-Ether CD_3-O-CH_3	C. Richard[15] J.-C. Guillemin[2] R. A. Motiyenko[1] L. Margulès[1]	THz spectra Internal rotation Analysis in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_6O	Dimethyl-Ether CH_2D-O-CH_2D	L. Margulès[1] J.-C. Guillemin[2] R. A. Motiyenko[1]	THz spectra tunelling Analysis in progress
$C_3H_3NO_2$	acetyl-isocyanate CH_3CONCO	L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2] I. Kleiner[7] V. Illyushin[3] J. Cernicharo[4]	MM spectra internal rotation Analysis in progress
$C_3H_4N_2$	methylimino- acetonitrile CH_3N-CH-CN	R. A. Motiyenko[1] L. Margulès[1], J.-C. Guillemin[2]	MM spectra internal rotation Analysis in progress
$C_3H_4O_4$	Malonic acid	W. Chin[6], M. Goubet[1]	Experiments and Analyses in progress
C_3H_5N	ethyl cyanide ^{13}C-CH_3CH_2CN	J. Pearson[9] B. Drouin[9] Y. ShanShan[9] L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2]	MM+SMM+THz spectra exc. states Analysis in progress
$C_3H_6O_2$	propionic acid C_2H_5COOH	A. Kutsenko[3] V. Illyushin[3] R. A. Motiyenko[1] L. Margulès[1], J.L. Alonso[5] J. Cernicharo[4]	MM+SMM spectra; internal rotation J. Mol. Spectrosc, accepted
$C_3H_6O_3$	Methylglyoxal hydrate $C_3H_4O_2$ ... H_2O	S. Bteich[1], M. Goubet[1], T.R. Huet[1]	Experiments Completed Analyses in progress
C_3H_7N	Propaneimine CH_3CH_2CHNH	L. Margulès[1], R. A. Motiyenko[1] J.-C. Guillemin[2] B. Mc Guirre[8] A. Remijan[8]	MM+SMM spectra Manuscript in preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_7NO	Propionamide $CH_3CH_2CONH_2$	V. Illyushin[3] E. Alekseev[3] R. A. Motiyenko[1] L. Margulès[1] P. Drean[1]	MW+MM+SMM spectra; internal rotation Manuscript submitted
$C_5H_8N_2$	2-cyanopyrrolidine	R. A. Motiyenko[1] L. Margulès[1], J.-C. Guillemin[2] S. Samdal[10]	MM spectra Analysis in progress
$C_7H_7NO_2$	2-Nitrotoluene 4-Nitrotoluene	A. Roucou[11], I. Kleiner[7], M. Goubet[1] S. Bteich[1], A. Cuisset[11]	Experiments and analyses completed Manuscript in preparation
$C_{10}H_{16}$	Sabinene	Mhamad Chrayteh Thérèse R. Huet Pascal Dréan	*Journal of Molecular Structure*, accepted (2021)
$C_{10}H_8O$	1-hydroxynaphthalene 2-hydroxynaphthalene	O. Pirali[6], M-A Martin-Drumel[6], M. Goubet[1], F. Réal[1], V. Vallet[1]	Manuscript under revision (JPCA)
$C_{10}H_{16}O_2$	Verbenone – Water $C_{10}H_{14}O - H_2O$	Mhamad Chrayteh Anunziata Savoia Thérèse R. Huet Pascal Dréan	Physical Chemistry Chemical Physics, 22 pp. 5855-5864 (2020)
$C_{10}H_{18}O_3$	Verbenone – $(Water)_2$ $C_{10}H_{14}O - (H_2O)_2$	Mhamad Chrayteh Anunziata Savoia Thérèse R. Huet Pascal Dréan	Physical Chemistry Chemical Physics, 22 pp. 5855-5864 (2020)
$C_{10}H_{20}O_4$	Verbenone – $(Water)_3$ $C_{10}H_{14}O - (H_2O)_3$	Mhamad Chrayteh Anunziata Savoia Thérèse R. Huet Pascal Dréan	Physical Chemistry Chemical Physics, 22 pp. 5855-5864 (2020)

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_{10}H_{16}O_2$	Perillaldehyde – Water $C_{10}H_{14}O – H_2O$	Mhamad Chrayteh Thérèse R. Huet Pascal Dréan	Journal of Physical Chemistry A, 124 (32), pp. 6511-6520 (2020)
$C_{10}H_{18}O_3$	Perillaldehyde – $(Water)_2$ $C_{10}H_{14}O – (H_2O)_2$	Mhamad Chrayteh Thérèse R. Huet Pascal Dréan	Journal of Physical Chemistry A, 124 (32), pp. 6511-6520 (2020)
$C_{10}H_{20}O_4$	Perillaldehyde – $(Water)_3$	Mhamad Chrayteh Thérèse R. Huet Pascal Dréan	Journal of Physical Chemistry A, 124 (32), pp. 6511-6520 (2020)
$C_{10}H_{16}O_2$	Myrtenal – Water $C_{10}H_{14}O – H_2O$	Mhamad Chrayteh Thérèse R. Huet Pascal Dréan	Journal of Chemical Physics, 153 (10), art. no. 104304 (2020)
$C_{10}H_{18}O_3$	Myrtenal – $(Water)_2$ $C_{10}H_{14}O – (H_2O)_2$	Mhamad Chrayteh Thérèse R. Huet Pascal Dréan	Journal of Chemical Physics, 153 (10), art. no. 104304 (2020)
$C_{10}H_{20}O_4$	Myrtenal – $(Water)_3$ $C_{10}H_{14}O – (H_2O)_3$	Mhamad Chrayteh Thérèse R. Huet Pascal Dréan	Journal of Chemical Physics, 153 (10), art. no. 104304 (2020)
$C_{10}H_{16}O$	2-adamantanol	O. Pirali[6], M-A Martin-Drumel[6], O. Chitarra[6], M. Goubet[1], J. Claus[1]	Experiments and analyses in progress
$C_{10}H_{20}O_2$	Endo-fenchol – Water $C_{10}H_{18}O – H_2O$	Elias Neeman Thérèse R. Huet	Physical Chemistry Chemical Physics 23, 2179-2185 (2021)
NO	nitrosylium ion $^{14}NO^+$ $^{15}NO^+$	S. Bailleux[1] E. Alekseev[3] J. Cernicharo[4]	MM+SMM spectra v=0,1,2 states assigned Manuscript in preparation

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_{16}O_6$	Glycerol dimer (propane-1,2,3-triol)$_2$ $(C_3H_8O_3)_2$	Jiarui Ma,[1] F. Xie N. Seifert	Extensive conformational scans done; Several new dimers assigned.
$C_3H_{10}O_4$	Glycerol-H_2O $C_3H_8O_3$-(H_2O)	F. Xie J. Thomas	Extensive conformational scans done; Assignment in progress.
$C_3H_{12}O_5$	Glycerol-(H_2O)$_2$ $C_3H_8O_3$-(H_2O)$_2$	F. Xie J. Thomas	Extensive conformational scans done; Assignment in progress.
$C_3H_{14}O_6$	Glycerol-(H_2O)$_3$ $C_3H_8O_3$-(H_2O)$_3$	F. Xie J. Thomas	Extensive conformational scans done; Assignment in progress.
$C_6H_{10}F_6O_2$	3,3,3-trifluoropropanol (TFP) dimer $(C_3H_5F_3O)_2$	F. Xie, T. Lu N. Seifert	One new monomer and three dimers assigned; MS near completion.
$C_3H_7F_3O_2$	3,3,3-trifluoropropanol (TFP)-H_2O $C_3H_5F_3O$-H_2O	Alex Mott F. Xie	Conformational search completed; Assignment in progress.
$C_{10}H_{18}O_2$	Perillyl alcohol-water $C_{10}H_{16}O$-H_2O	F. Xie	Conformational search done; Monohydrate assignment in progress.
$C_{12}H_{15}F_3O_3$	1-phenyl-2,2,2-trifluoro ethanol-1,4-dioxane $C_8F_3H_7O$-$C_4H_8O_2$	Q. Yang, F. Xie	Conformational search done; One conformer assigned
$C_6H_{11}F_3O_3$	2, 2, 2-trifluoroethanol (TFE)-1,4-dioxane $C_2F_3H_3O$-$C_4H_8O_2$	Q. Yang	Conformational search done; One conformer assigned
$C_5H_4O_3$	2-furoic acid	Q. Yang, F. Xie	Three conformers; MS in preparation
$C_{10}H_8O_6$	2-furoic acid dimer $(C_5H_4O_3)_2$	Q. Yang, F. Xie	One binary conformer with tunneling assigned; MS in preparation
$C_8H_9F_3O_2$	1-phenyl-2,2,2-trifluoroethanol-water $C_8F_3H_7O$-H_2O	C Carlson, D. Mason N. Seifert	Monohydrate and several isotopologues assigned; MS near completion.
$C_{16}H_{14}F_6O_2$	1-phenyl-2,2,2-Trifluoroethanol dimer $(C_8F_3H_7O)_2$	C. Carlson N. Seifert	Assignment in progress.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_8H_{14}F_6O_2$	4,4,4-trifluorobutanol dimer $(TFB)_2$ $(C_4H_7F_3O)_2$	T. Lu,[1] F. Xie	Five conformers assigned; MS near completion
$C_4H_9F_3O_2$	4,4,4-trifluorobutanol-water, TFB-H_2O $C_4H_7F_3O$-H_2O	T. Lu,[1] F. Xie	Conformational search completed; Two conformers assigned; others in progress.
$C_4H_{11}F_3O_3$	4,4,4-trifluorobutanol-$(water)_2$, TFB-$(H_2O)_2$ $C_4H_7F_3O$-$(H_2O)_2$	T. Lu,[1] F. Xie	Conformational search completed; Four conformers assigned; others in progress.
$C_4H_{13}F_3O_4$	4,4,4-trifluorobutanol-$(water)_3$, TFB-$(H_2O)_3$ $C_4H_7F_3O$-$(H_2O)_3$	T. Lu,[1] F. Xie	Conformational search completed; Two conformers assigned; others in progress.
$C_4H_{15}F_3O_5$	4,4,4-trifluorobutanol-$(water)_4$, TFB-$(H_2O)_4$ $C_4H_7F_3O$-$(H_2O)_4$	T. Lu,[1] F. Xie	Conformational search completed; Two conformers assigned; others in progress.
$C_4H_{17}F_3O_6$	4,4,4-trifluorobutanol-$(water)_5$, TFB-$(H_2O)_5$ $C_4H_7F_3O$-$(H_2O)_5$	T. Lu,[1] F. Xie	Conformational search completed; Assignment in progress.
$C_7H_{12}O_2$	Cyclohexane carboxylic acid	T. Lu,[1,2] A. S. Hazrah F. Xie	One conformer assigned; others in progress.
$C_7H_{12}O_2$-H_2O	Cyclohexane carboxylic acid-water	T. Lu,[1,2] A. S. Hazrah F. Xie	One conformer assigned; others in progress.
$C_3H_2F_6N_2O$	1,1,1,3,3,3-hexafluoro -2-propanol (HFIP) with N_2 $C_3H_2F_6O$-N_2	S. Oswald[1,3] N. Seifert B. Wu	Spectra assigned; ^{14}N hfs analysis completed; MS near completion.
$C_3H_2F_6ONe$	1,1,1,3,3,3-hexafluoro -2-propanol (HFIP) with Ne $C_3H_2F_6O$-Ne	B. Wu[1] S. Oswald N. Seifert	Spectra of several isotopologues assigned; MS near completion.
$C_3H_2ArF_6O$	1,1,1,3,3,3-hexafluoro -2-propanol (HFIP) with Ar $C_3H_2F_6O$-Ar	B. Wu[1] S. Oswald N. Seifert	Spectra of several isotopologues assigned; MS near completion.
$C_3H_4F_6O_2$	HFIP-H_2O $C_3H_2F_6O$-H_2O	B. Wu, N. Seifert S. Oswald	A new conformer assigned. HOD, DOH and D_2O analysis completed. MS in preparation.
$C_3H_3F_5O$	2,2,3,3,3-pentafluoro -1-propanol (PFP)	B. Wu[1] S. Oswald N. Seifert	One monomer fitted; Tunneling splitting observed; Detailed fits in progress

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_3F_5NeO$	2,2,3,3,3-pentafluoro -1-propanol (PFP) with Ne $C_3H_3F_5O$-Ne	B. Wu[1] S. Oswald N. Seifert	One monomer fitted; Tunneling splitting observed; Detailed fits in progress
$C_6H_6F_{10}O_2$	PFP dimer $(C_3H_3F_5O)_2$	B. Wu,[1] N. Seifert S. Oswald	Five dimers assigned; MS in preparation.
$C_3H_5F_5O_2$	PFP-H_2O $C_3H_3F_5O$-H_2O	B. Wu, N. Seifert S. Oswald	Two conformers assigned; HOD, DOH and D_2O analysis completed; MS in preparation.
$C_6H_6F_6O_2$	Trifluoromethyl oxirane dimer $(C_3H_3F_3O)_2$	H. O. Leung[1,4] M. D. Marshall N. Seifert	Spectra assigned; MS in preparation.
$C_9H_{18}O_4$	Solketal-propylene oxide complex $C_6H_{12}O_3$-C_3H_6O	L. Evangelisti, J. Thomas, C. West[5]	Spectra assigned; MS in preparation.
$C_8H_{12}F_{12}O_4$	(Trifluoroethanol)$_4$ $(C_2H_3F_3O)_4$	J. Thomas[1] N. Seifert	Extensive conformational search $(TFE)_4$ assignment in progress.
$C_8H_{11}NO_3$	Methyl salicylate -ammonia $C_8H_8O_3$-NH_3	J. Thomas[1]	New conformers predicted; chirped and cavity assignments in progress.
$C_2H_7FO_2$	2-fluoroethanol - water C_2H_5FO-H_2O	W. Huang J. Thomas	Extensive theoretical calculations for up to 3 waters; broadband spectra recorded; assignment in progress.
$C_2H_9FO_3$	2-fluoroethanol -(water)$_2$ C_2H_5FO-$(H_2O)_2$	W. Huang J. Thomas	Extensive theoretical calculations for up to 3 waters; broadband spectra recorded; assignment in progress.
$C_2H_{11}FO_4$	2-fluoroethanol -(water)$_3$ C_2H_5FO-$(H_2O)_3$	W. Huang J. Thomas	Extensive theoretical calculations for up to 3 waters; broadband spectra recorded; assignment in progress.
$C_4H_{10}O_5$	Methyl glycidate -(water)$_2$ $C_4H_6O_3$-$(H_2O)_2$	J. Thomas, Z. Wang	Theoretical calculation with n up to 3; broadband spectra recorded and assignment of others in progress.
$C_4H_{12}O_6$	Methyl glycidate -(water)$_3$ $C_4H_6O_3$-$(H_2O)_3$	J. Thomas, Z. Wang	Theoretical calculation with n up to 3; broadband spectra recorded and assignment of others in progress.
$C_4H_9NO_3$	Methyl glycidate -ammonia $C_4H_6O_3$-NH_3	J. Thomas	Broadband spectra recorded and assigned; hfs analysis with cavity measurement in progress.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_8H_{16}O_6$	Methyl lactate dimers $C_4H_8O_3$-$C_4H_8O_3$	J. Thomas N. Seifert	Extensive ab initio conformational search completed; broadband spectra recorded; assignment in progress.
$C_3H_{12}O_4$	Propylene oxide -(water)$_3$ C_3H_6O-$(H_2O)_3$	J. Thomas Z. Su	Extensive calculations with n=3 and 4 broadband and cavity spectra recorded; n=3 assigned and n=4 in progress.
$C_3H_{14}O_5$	Propylene oxide -(water)$_4$ C_3H_6O-$(H_2O)_4$	J. Thomas Z. Su	Extensive calculations with n=3 and 4 broadband and cavity spectra recorded; n=3 assigned and n=4 in progress.
$C_3H_5FO_2$	α-Fluoropropionic acid	Y. Yang J. Thomas	New measurements and theoretical study
CH_6O	Methane-water CH_4-H_2O	X. Liu	IR spectrum at H_2O ν2 band measured; assignment in progress.
H_3NNe	Ammonia-neon Ne-NH_3	X. Liu	IR spectrum at NH_3 ν4 band assigned.
ArH_3N	Ammonia-argon Ar-NH_3	X. Liu	IR spectrum at NH_3 ν4 band assigned.
$C_3H_8O_2$	Propylene oxide -water C_3H_6O-H_2O	J. Thomas X. Liu R. Patel	Rich IR spectrum at H_2O ν2 band measured; assignment in progress.
CH_3NO	Formamide $HCONH_2$	F. Sunahori	High-res. IR Spectra obtained; assigned
$C_2H_6N_2O_2$	Formamide dimer $(HCONH_2)_2$	F. Sunahori	High-res. IR Spectra obtained; assignment in progress.
$C_4H_8O_3$	Methyl lactate	F. Sunahori N. Borho	High-res. IR spectrum obtained; assignment in slow progress.

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[2] In collaboration with Prof. G. Feng, School of Chemistry and Chemical Engineering, Chongqing University, Daxuecheng South Rd. 55, 401331, Chongqing, China.

[3] In collaboration with Prof. M. Suhm, University of Göttingen, Institute of Physical Chemistry, Tammannstraße 6, D-37077 Göttingen, Germany.

[4] In collaboration with Prof. H. O. Leung and Prof. M. D. Marshall, Department of Chemistry, Amherst College, P.O. Box 5000, Amherst, MA 01002-5000.

[5] In collaboration with Prof. W. Caminati, University of Bologna and Prof. B. H, Pate, University of Virginia.

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Formula	Name of Compound	Name of Investigator	Present Stage of Progress
C_2Sc	Scandium Dicarbide $Sc^{13}C_2$, $Sc^{12}C^{13}C$	Burton et al.	*JCP*, **153**, 034304 (2020)
PSi	Silicon Phosphide	Burton & Ziurys	Manuscript submitted

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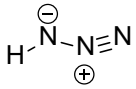
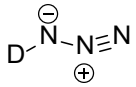
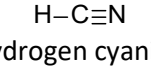
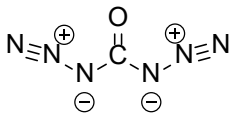
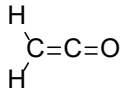
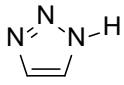
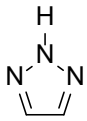
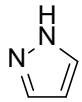
FORMULA	NAME/STRUCTURE OF COMPOUND	INVESTIGATOR(S)	PRESENT STAGE OF PROGRESS
HN_3	 hydrazoic acid	V. L. Orr A. N. Owen B. K. Amberger B. J. Esselman S. Urban[1] K. Vavra[1] Z. Kisiel[2] J. F. Stanton[3] R. C. Woods R. J. McMahon	8 - 700+ GHz spectrum obtained Fitting and assignment of vibrational states underway r_e^{SE} structure update manuscript in preparation
DN_3	 deuteriohydrazoic acid	V. L. Orr B. K. Amberger B. J. Esselman S. Urban[1] K. Vavra[1] Z. Kisiel[2] J. F. Stanton[3] R. C. Woods R. J. McMahon	130 - 375 GHz spectrum obtained Fitting and assignment of vibrational states underway r_e^{SE} structure update manuscript in preparation
CHN	 hydrogen cyanide	H. E. Warner B. J. Esselman J. F. Stanton[3] R. C. Woods R. J. McMahon	HCN measured in multiple isotopologues Experimental alpha, gamma, and epsilon vibration-rotation interactions determined

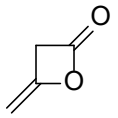
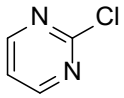
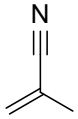
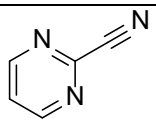
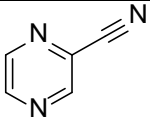
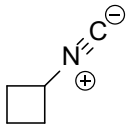
[1] University of Chemistry and Technology, Prague
[2] Institute of Physics, Polish Academy of Sciences

FORMULA	NAME/STRUCTURE OF COMPOUND	INVESTIGATOR(S)	PRESENT STAGE OF PROGRESS
CN_6O	 carbonyl diazide	P. M. Dorman B. K. Amberger B. J. Esselman R. C. Woods R. J. McMahon	235 – 375 GHz spectrum obtained *J. Mol. Spectrosc.* **2014,** *295*, 15-20. Fitting of a coupled tetrad underway
C_2H_2O	 ketene	H. H. Smith S. A. Wood B. J. Esselman R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained r_e^{SE} structure determination underway. Spectra of several isotopologues obtained Spectra of several vibrationally excited states fit
$C_2H_3N_3$	 1H-1,2,3-triazole	M. A. Zdanovskaia B. J. Esselman S. M. Kougias J. F. Stanton[3] R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained r_e^{SE} structure determination manuscript in preparation vibrationally excited states manuscript in preparation
$C_2H_3N_3$	 2H-1,2,3-triazole	M. A. Zdanovskaia B. J. Esselman S. M. Kougias J. F. Stanton[3] R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained r_e^{SE} structure determination manuscript in preparation vibrationally excited states manuscript in preparation
C_3H_3NO	 isoxazole	M. D. Fellows B. J. Esselman N. Horinouchi[4] K. Kobayashi[4] R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Spectra of several isotopologues obtained Spectra of several vibrationally excited states fit obtained Synthesis of deuterated isotopologues and r_e^{SE} structure determination underway.
C_3H_3NO	 oxazole	T. K. Adkins B. J. Esselman N. Horinouchi[4] K. Kobayashi[5] R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Fitting of ground state and natural abundance isotopologues completed. Synthesis of deuterated isotopologues and r_e^{SE} structure determination underway.

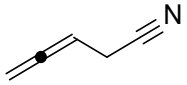
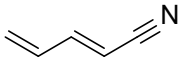
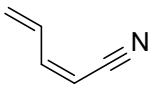
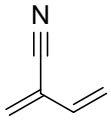
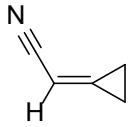
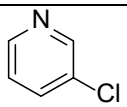
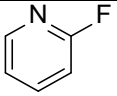
[3] University of Florida
[4] University of Toyama
[5] University of Toyama

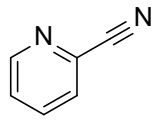
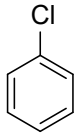
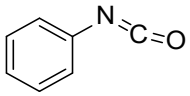
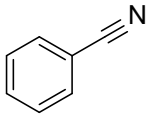
FORMULA	NAME/STRUCTURE OF COMPOUND	INVESTIGATOR(S)	PRESENT STAGE OF PROGRESS
C_3H_3NS	 1,3-thiazole	B. J. Esselman M. A. Zdanovskaia T. K. Adkins B. E. Billinghurst[6] J. Zhao[Error! Bookmark not def] R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Fit of GS complete and GS of 22 isotopologues complete. r_e^{SE} structure determination manuscript in preparation Fitting of vibrationally excited states and isotopologue vibrational states underway. High resolution infrared spectra obtained from the Canadian Light Source. Spectroscopy of low energy vibrational states manuscript in preparation.
C_3H_3NS	 1,3-thiazole	K. Kobayashi B. J. Esselman R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Fitting of ground and vibrationally excited states and isotopologue vibrational states underway.
$C_3H_4N_2$	 pyrazole	M. A. Zdanovskaia B. J. Esselman R. C. Woods R. J. McMahon	Accidentally obtained in commercial sample of triazole 235 – 360 GHz spectrum obtained Fitting of GS complete
$C_4H_4N_2$	 pyridazine	M. A. Zdanovskaia A. N. Owen B. J. Esselman B. K. Amberger B. E. Billinghurst[Error! Boo] J. Zhao[Error! Bookmark not def] R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained Fitting of GS and effective fits of vibrationally excited states complete *J. Chem. Phys.* **2013,** *139*, 224304 Fit of coupled dyad underway High resolution infrared spectra obtained from the Canadian Light Source. r_e^{SE} structure update manuscript in preparation
$C_4H_4N_2$	 pyrimidine	Z. N. Heim[7] B. K. Amberger B. J. Esselman J. F. Stanton[3] B. E. Billinghurst[Error! Boo] J. Zhao[Error! Bookmark not def] R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained. r_e^{SE} structure from many isotopologues. *J. Chem. Phys.* **2020,** *152*, 104303 Several vibrationally excited states fit. High resolution infrared spectra obtained from the Canadian Light Source.

[6] Canadian Light Source
[7] University of California

FORMULA	NAME/STRUCTURE OF COMPOUND	INVESTIGATOR(S)	PRESENT STAGE OF PROGRESS
$C_4H_4O_2$	 diketene	V. L. Orr B. J. Esselman P. M. Dorman R. C. Woods R. J. McMahon	235 – 375 GHz spectrum obtained *J. Phys. Chem. A* **2016,** *120*, 7753-7763 Fitting of a coupled dyad underway
$C_4H_3ClN_2$	 2-chloropyrimidine	N. Love[8] K. Belmont[8] K. R. Leopold[8] B. J. Esselman R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Fitting of $^{35/37}$Cl GS and several vibrational states underway
C_4H_5N	 methacrylonitrile	H. H. Smith S. M. Kougias D. J. Lee B. J. Esselman R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained Fitting of GS complete with methyl rotor Fitting of vibrationally excited states underway Synthesis of methacrylonitrile-d_n complete Fitting of over a dozen isotopologues complete, r_e^{SE} structure determination underway
C_4H_4S	 thiophene	V. L. Orr Y. Ichikawa[4] A. R. Patel S. M. Kougias K. Kobayashi[4] B. J. Esselman R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Spectroscopy of ground state and > 20 vibrationally excited states manuscript in preparation r_e^{SE} structure determination manuscript in preparation
$C_5H_3N_3$	 cyanopyrimidine	H. H. Smith B. J. Esselman R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Spectra of ground state fit Analysis of dyad of 1st and 2nd fundamental underway
$C_5H_3N_3$	 cyanopyrazine	B. J. Esselman R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Spectra of ground state fit Analysis of dyad of 1st and 2nd fundamental underway
C_5H_7	 cyclobutylisocyanide	M. D. Fellows S. M. Kougias B. J. Esselman R. C. Woods R. J. McMahon	235 – 360 GHz spectrum obtained Spectra of equatorial conformation obtained. Spectra of several vibrationally excited states fit obtained

[8] University of Minnesota

FORMULA	NAME/STRUCTURE OF COMPOUND	INVESTIGATOR(S)	PRESENT STAGE OF PROGRESS
C_5H_5N	 pyridine	M. A. Zdanovskaia B. J. Esselman J. F. Stanton[3] R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Fit of ground state and vibrationally excited states underway Pyridine-d_2 synthesized and pyridine-d_5 obtained Fits of deuterio-isotopologues underway
C_5H_5N	 4-cyano-1,2-butadiene	V. L. Orr S. M. Kougias B. J. Esselman R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained Fitting of syn and anti GS and vibrationally excited states underway. *Manuscript submitted.*
C_5H_5N	 *E*-1-cyano-1,3-butadiene	M. A. Zdanovskaia S. M. Kougias B. J. Esselman R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained GS effective fit obtained Fitting of GS and vibrationally excited states underway. *Manuscript submitted.*
C_5H_5N	 *Z*-1-cyano-1,3-butadiene	P. M. Dorman S. M. Kougias B. J. Esselman R. C. Woods R. J. McMahon	8 – 20 GHz spectrum obtained 130 – 375 GHz spectrum obtained Fitting of GS complete with nuc quadrupole coupling. Fitting of couple dyad of the first and second fundamentals underway. *Manuscript submitted.*
C_5H_5N	 2-cyano-1,3-butadiene	B. J. Esselman M. Zdanovskaia S. M. Kougias A. R. Patel R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained Fitting of GS complete. Fitting of couple dyad of the first and second fundamentals complete. Manuscript in preparation.
C_5H_5N	 cyclopropylideneacetonitrile	B. J. Esselman S. M. Kougias M. Zdanovskaia R. C. Woods R. J. McMahon	135 – 360 GHz spectrum obtained Fitting of ground state and coupled dyad complete *Manuscript submitted.*
C_5H_4ClN	 3-chloropyridine	B. J. Esselman R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Fitting of gs underway
C_5H_4FN	 2-fluoropyridine	B. J. Esselman R. C. Woods R. J. McMahon	235 – 360 GHz spectrum obtained Fitting of GS and several vibrational states underway

FORMULA	NAME/STRUCTURE OF COMPOUND	INVESTIGATOR(S)	PRESENT STAGE OF PROGRESS
$C_6H_4N_2$	 2-cyanopyridine	P. M. Dorman B. J. Esselman R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained Fitting of GS complete. Fitting of coupled dyad near-completion Presented at ISMS 2019
C_6H_5Cl	 Chlorobenzene	P. M. Dorman B. J. Esselman R. C. Woods R. J. McMahon	130 – 360 GHz spectrum obtained Fitting of GS and several vibrational states underway
C_7H_5NO	 phenyl isocyanate	C. E. Schwarz B. J. Esselman B. K. Amberger R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained Fitting of coupled tetrad of GS and first three vibrationally excited states underway
C_7H_5N	 Benzonitrile	M. A. Zdanovskaia Z. Kisiel[2] B. J. Esselman R. C. Woods R. J. McMahon	130 – 375 GHz spectrum obtained Fitting of ground state and coupled dyad complete *J. Mol. Spectrosc.* **2018,** *351*, 39-48. Fitting of coupled triad underway

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2ClF_3O_2$	CF_3Cl-CO_2	Y. Zheng, W. Caminati,[1] J.-U. Grabow[2]	*J. Phys. Chem. Lett. in press* (2021)
$C_2H_3F_3O$	Trifluoromethane–formaldehyde complex CF_3H–H_2CO	Q. Gou[1,3,4]	1 conformer, 4 states
$C_3H_4O_4$	Vinylene carbonate-water $C_3H_2O_3$-H_2O	J. Chen	Spectra assigned
$C_4H_2F_8O$	octafluorocyclobutane-water C_4F_8-H_2O	J. Chen, S. Blanco,[3] Z. Kisiel[8]	Spectra assigned, one conformer, O^{18}, D_2O, DOH, tunneling splitting, four states, ms in preparation
$C_4H_3F_3O_2$	2-(Trifluoromethyl)acrylic acid	M. Li	Spectra assigned, two conformers
$C_4H_3F_8N$	octafluorocyclobutane-ammonia C_4F_8-NH_3	J. Chen	One conformer, tunneling splitting, four states, two of them were assigned
$C_4H_4F_8O_2$	Octafluorocyclobutane-water trimer C_4F_8-$2H_2O$	J. Chen, S. Blanco,[3] Z. Kisiel[8]	Spectra assigned, manuscript in preparation
$C_4H_4F_4O_4$	α,α-F_2-acetic acid dimer $(CF_2HCOOH)_2$	Q. Gou[1]	4 states, proton tunneling
$C_4H_5F_3O_3$	2-(Trifluoromethyl)acrylic acid-Water complex $C_4H_3O_2F_3$-H_2O	M. Li	Spectra assigned, two conformers, O^{18} isotopologues
C_4H_8O	Methacryl alcohol $HOCH_2C{=}CH_2CH_3$	J. Lei	2 conformers, ^{13}C isotopologues, internal rotation of $-CH_3$ and OH

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_8O_2$	4-hydroxy-2-butanone	M. Li	Ms in preparation, spectra assigned, one conformer, ^{13}C isotopologues, internal rotation of -CH_3 group
$C_4H_8O_2$	Methoxyacetone monomer $CH_3OCH_2COCH_3$	M. Li, I. Kleiner,[5] M. L. Senent[12]	Spectra assigned, one conformer
$C_4H_8O_3$	Methyl methoxyacetate $CH_3OCOCH_2COCH_3$	J. Lei	Spectra assigned, one conformer, internal rotation of -CH_3
C_4H_9NO	morpholine monomer	W. Cheng, S. Lorenzo[1]	Spectra assigned, *axial* conformer, ms in preparation
$C_4H_{10}O_3$	4-hydroxy-2-butanone-Water complex $C_4H_8O_2$-H_2O	M. Li	Ms in preparation, spectra assigned, one conformer, O^{18}, D_2O, DOH, HOD isotopologues, internal rotation of -CH_3 group
$C_4H_8O_2$	Acetoin	Y. Zheng	Spectra assigned, 1 conformer, ^{13}C, OD, C=^{18}O, ^{18}O, DOH, OD-D_2O isotopes, internal rotation of CH_3
$C_4H_{10}O_3$	Acetoin-H_2O $C_4H_8O_2$-H_2O	Y. Zheng	Spectra assigned, 1 conformer, ^{13}C, OD, C=^{18}O, ^{18}O, DOH, OD-D_2O isotopes, internal rotation of CH_3
$C_5H_4F_3NO$	2,3,6-Trifluoropyridine–water complex $C_5H_2F_3N$–H_2O	J. Wang, S. Melandri [1]	Ms in preparation, ^{18}O, D_2O, DOH, HOD isotopes
C_5H_3NO	2-furonitrile monomer	Y. Zheng, L. Spada,[10] M. Melosso[1]	Spectra assigned, one conformer, ^{13}C, ^{18}O, ^{14}N isotopes
C_5H_3ON	3-Furonitrile	X. Wang, L. Spada,[10] M. Melosso[1]	Spectra assigned, one conformer, ^{13}C, ^{18}O, ^{14}N isotopes
$C_5H_4ClF_3O$	furan-CF_3Cl	Y. Zheng, J. Bloino[10]	Spectra assigned, 2 conformers, ^{37}Cl, ^{13}C isotopes, ms in preparation
$C_5H_4O_3$	furan-CO_2 C_4H_4O-CO_2	J. Lei	Spectra assigned, one conformer,
$C_5H_5NO_2$	pyrrole-CO_2 complex C_4H_5N-CO_2	W. Cheng, M. Sanz[6]	Spectra assigned, one conformer, ^{15}N, ^{13}C isotopologues, ms in preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_5NO_2$	2-furonitrile-H_2O complex C_5H_3NO-H_2O	Y. Zheng, L. Spada,[10] M. Melosso[10]	Spectra assigned, two conformers, water tunneling, ^{18}O, D_2O, DOH, HOD isotopes
$C_5H_5NO_2$	3-Furonitrile-H_2O complex C_5H_3ON-H_2O	X. Wang, L. Spada,[10] M. Melosso [10]	Spectra assigned, two conformers, water tunneling, ^{18}O, D_2O, DOH, HOD isotopes
$C_5H_5F_2NO$	2,3-difluoropyridine–water complex $C_5H_3F_2N$–H_2O	J. Wang, S. Melandri[1]	Ms in preparation ^{18}O, D_2O, DOH, HOD isotopes
$C_5H_5F_2NO$	2,6-difluoropyridine–water complex $C_5H_3F_2N$–H_2O	J. Wang, S. Melandri[1]	Ms in preparation ^{18}O, D_2O, DOH, HOD isotopes
$C_5H_5ClF_3$	pyrrol-CF_3Cl C_4H_5N-CF_3Cl	Y. Zheng	Spectra assigned, 1 conformer
$C_5H_9NO_2$	pyrrolidine-CO_2 complex C_4H_9N-CO_2	W. Cheng, J. Wang, Y. Zheng	Spectra assigned, two conformers ^{15}N, ^{13}C isotopologues
$C_5H_9NO_3$	morpholine-CO_2 complex C_4H_9ON-CO_2	W. Cheng, S. Lorenzo[10]	Spectra assigned, three conformers, ms in preparation
$C_6H_2F_5N$	Pentafluroanline	S. Gao	Spectra assigned, one conformer
C_6H_5FNO	2-Fluoro-4-methylpyridine–water complex C_6H_3NF-H_2O	S. Gao	Spectra assigned, 1 conformer
$C_6H_8O_2$	3-methylcyclopentane-1,2-dione	J. Wang S. Herbers[2]	Ms in preparation, one conformer, internal rotation of -CH_3
$C_6H_8O_2$	cyclopentene-carbon dioxide C_5H_8-CO_2	J. Wang, S. Herbers[2]	Ms in preparation, one conformer, all ^{13}C mono-isotopologues
$C_6H_8O_2$	Isoprene- CO_2 complex C_5H_8-CO_2	X. Tian	one conformer for complex, ^{13}C isotopes for trans-monomer
$C_6H_8O_4$	3-oxetanone homodimer $(C_3H_4O_2)_2$	J. Chen	Spectra assigned, ms in preparation
$C_6H_{10}O$	Norcamphor monomer	Y. Zheng, M.Fusè[10]	Spectra assigned, ms in preparation

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_{10}O_3$	3-methylcyclopentane-1,2-dione – water; $C_6H_8O_2$-H_2O	J. Wang, S. Herbers[2]	Ms in preparation, one conformer, internal rotation of -CH_3
C_7HF_5O	Pentafluorobenzaldehyde	J. Wang	Spectra assigned, one conformer All isotopologues
$C_7H_3F_5O_2$	Pentafluorobenzaldehyde-water C_7HOF_5-H_2O	J. Wang	Spectra assigned, one conformer
C_7H_5N	2-Ethynylpyridine	S. Gao	Spectra assigned, one conformer
$C_7H_6O_2$	phenol-CO_2 complex C_6H_6-CO_2	H. Wang	Spectra assigned, 1 conformer, ms in preparation
C_7H_7NO	2-Ethynylpyridine-H_2O complex C_7H_5N-H_2O	S. Gao	Spectra assigned, one conformer, O^{18}, D_2O, DOH, HOD
$C_7H_7F_2N$	3,4-Difluorobenzylamine	S. Gao	Spectra assigned, two conformers
$C_7H_7F_2N$	2,6-Difluorobenzylamine	S. Gao	Spectra assigned, one conformer
$C_7H_7F_2N$	2,4-Difluorobenzylamine	S. Gao	Spectra assigned, two conformers, -NH_2 tunneling
$C_7H_8O_2$	3-Methylcatechol	X.Wang, A. Cuisset[11]	two conformers,internal rotation of -CH_3 group
$C_7H_8O_4$	cyclopentene-(carbon dioxide)$_2$ C_5H_8-CO_2-CO_2	J. Wang, S. Herbers[2]	Manuscript in preparation, one conformer
C_7H_8FN	4-fluorobenzylamine	S. Gao	Spectra assigned, one conformer
$C_7H_{12}O_2$	Norcamphor-H_2O $C_7H_{10}O$-H_2O	X.Wang, M.Fusè[10]	Spectra assigned, two conformers, ^{18}O, D_2O, DOH, HOD isotopes
$C_7H_{14}O_3$	Norcamphor-2 H_2O $C_7H_{10}O$-$2H_2O$	X.Wang, M. Fusè[10]	Spectra assigned,one conformer, ^{18}O isotopes
$C_8H_5NO_2$	2-Ethynylpyridine-CO_2 complex C_7H_5N-CO_2	S. Gao, X. Li	Spectra assigned, one conformer
$C_8H_5F_5O$	2,3,4,5,6-pentafluorostyrene-water complex $C_6F_5CHCH_2$-H_2O	Y. Zheng	Spectra assigned, 1 conformer, water tunneling

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_8H_7FO	4'-Fluoroacetophenone	X.Wang	Spectra assigned, one conformer, internal rotation of -CH_3 group, all ^{13}C mono-isotopologues
$C_8H_7F_3O_2$	2,2,2-trifluoroacetophenone–water complex; $C_6H_5COCF_3$-H_2O	J. Lei	Spectra assigned, one conformer Manuscript in preparation
$C_8H_6O_3$	Benzaldehyde-CO_2 complex C_6H_5CHO-CO_2	H. Wang	Spectra assigned, two conformers
$C_8H_5F_4$	Benzaldehyde-CF_4 complex C_6H_5CHO-CF_4	H. Wang, W. Caminati,[1] J.-U. Grabow[2]	Spectra assigned, one conformer, ms submitted
$C_8H_8O_3$	Anisole-CO_2 complex $C_6H_5OCH_3$-CO_2	H. Wang	Spectra assigned, one conformer
$C_8H_8O_3$	Phenylmethanol(benzyl alcohol)-CO_2 complex; $C_6H_5CH_2OH$-CO_2	H. Wang	Spectra assigned, one conformer
$C_8H_9FO_2$	4'-Fluoroacetophenone-H_2O C_8H_7FO-H_2O	X. Wang	Spectra assigned, one conformers, ^{18}O, D_2O, DOH, HOD isotopes
$C_9H_{10}O_3$	2-phenylethanol(phenethyl alcohol)-CO_2 complex $C_6H_5CH_2CH_2OH$-CO_2	H. Wang	Spectra assigned, one conformer, ms in prepapration
$C_8H_{10}O$	Styrene-water complex $C_6H_5CHCH_2$-H_2O	Y. Zheng, E. Burevschi[6]	Ms in preparation, one conformer, O^{18}, D_2O, DOH, tunneling splitting
$C_8H_{10}O$	1-phenylethanol	Y. Zheng	Ms in preparation, 1 conformer, ^{18}O, DOH isotopes, tunneling splitting,
$C_8H_{12}O_2$	1-phenylethanol-H_2O $C_8H_{10}O$-H_2O	Y. Zheng	Ms in preparation, 1 conformer, ^{18}O, DOH isotopes, tunneling splitting,
$C_9H_{10}O$	Isochroman	X. Wang	Spectra assigned, one conformer, ^{13}C isotopologues

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(Entries marked with ^ are collaborative studies between this laboratory and that of M.E. Sanz, Chemistry Department, Britannia House King's College London, SE1 1DB, UK)

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_6O	2-butenal (crotonaldehyde)	C. Medcraft, E.Gougoula, N.R.Walker*	Manuscript in preparation
$C_4H_8O_2$	2-butenal-water complex	C. Medcraft, E.Gougoula, N.R.Walker*	Spectrum assigned
$C_2O_2F_3I$	CF_3I---CO_2	C. Medcraft, N.R.Walker*	Manuscript in preparation
$C_{10}H_{12}O_2$	Hinoikitiol, (b-thujaplicin)	C. Medcraft, S.I. Murugachandran, M.E. Sanz^	Spectrum assigned
$C_{10}H_{14}O_3$	Hinoikitiol – 1w	C. Medcraft, S.I. Murugachandran, M.E. Sanz^	Spectrum assigned
$C_{12}H_{18}O_3$	Hinoikitiol - ethanol	C. Medcraft, S.I. Murugachandran, M.E. Sanz^	Spectrum assigned
$C_{10}H_{12}O_4S$	Hinoikitiol -SO_2	C. Medcraft, S.I. Murugachandran, M.E. Sanz^	Spectrum assigned
$C_{10}H_{16}O_2S$	Limonene -SO_2	C. Medcraft, S.I. Murugachandran, M.E. Sanz^	Spectrum assigned
$C_3H_4O_3$	Pyruvic Acid $CH_3COCOOH$	C. Medcraft	Tt conformer assigned (2-24GHz)
$C_6H_8O_6$	Pyruvic Acid dimer $(CH_3COCOOH)_2$	C. Medcraft	Spectrum acquired; analysis ongoing
$C_5H_6O_7$	Pyruvic Acid-Oxalic acid dimer	C. Medcraft	Spectrum acquired; analysis ongoing
$C_3H_4O_4$	Malonic acid $CH_2(COOH)_2$	C. Medcraft	Two conformers assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_6HF_5O	Perfluorophenol C_6F_5OH	Zwier[1]	Experimental: 2-12.5 GHz spectrum, OH torsional tunneling
C8H10O	2,6-dimethylphenol $C_6H_3(CH_3)_2OH$	Zwier[1]	Experimental: 2-12.5 GHz spectrum, OH/CH3 internal rotation
$C_6H_5Cl_2O$	2,6-dichlorophenol $C_6H_3Cl_2OH$	Zwier[1]	Experimental: Preliminary spectrum 2-12.5 GHz, OH torsional tunneling

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CHN	Hydrogen cyanide HCN	K. Prozument [1] R. W. Field [2]	multiple vibrational states *Proc. Natl. Acad. Sci. U.S.A.* 117, 146−151 (2020)
CHN	Hydrogen isocyanide HNC	K. Prozument [1] R. W. Field [2]	multiple vibrational states *Proc. Natl. Acad. Sci. U.S.A.* 117, 146−151 (2020)
HNO	Nitroxyl HNO; $D^{15}NO$; $H^{15}NO$ $HN^{18}O$	D. P. Zaleski [1,3] K. Prozument [1]	*Phys. Chem. Lett.* 680, 101−108 (2017)
C_2D_4O	Acetaldehyde-d_4 CD_3CDO; $CD_3{}^{13}CDO$ $^{13}CD_3CDO$; $CD_3CD^{18}O$	D. P. Zaleski [1,3] C. Duan [4] M. Carvajal [5] I. Kleiner [6] K. Prozument [1]	*J. Mol. Spectrosc.* 342, 17−24 (2017)

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Norman C. Craig

Norm Craig (November 12, 1931 – March 7, 2021) passed away in Oberlin, Ohio. He graduated from Oberlin College in 1953, earned his Ph.D. with George Kistiakowski at Harvard in 1957, and returned to Oberlin to teach chemistry from 1957 until 2000. Throughout his teaching career, Norm managed an active research program at Oberlin that engaged 130 undergraduate students, 83 of whom were his coauthors on research papers, and many of whom subsequently earned Ph.D.'s in chemistry and established independent research and technical careers. Norm's research originally employed infrared spectroscopy, which evolved into rotationally-resolved vibrational spectroscopy, and included the use of microwave spectroscopy to measure and assign pure rotational transitions. He often visited collaborating labs, both in the US and around the world, often taking his students with him to labs and scientific conferences. His "symmetric rotor" costume often accompanied him; graduate students and even faculty would queue up for their turn in it. He was dedicated, both to his students' growth and to the advancement of spectroscopic knowledge. Many of his projects contained a challenging synthetic aspect prior to spectroscopic analysis. His particular interest in fluorine chemistry and the synthesis of isotopically substituted species to aid with spectroscopic structure determinations led his group to make advances in fluorine chemistry, in addition to publishing many detailed structural studies of halocarbons and other species with "bent bonds". Norm remained scientifically active throughout his retirement. His most recent publications describe semi-empirical and mixed estimation methods of determining equilibrium molecular structures. He published more than 150 journal articles and the chemical thermodynamics text *Entropy Analysis*.

Norm Craig with Andy Conrad wearing the symmetric rotor costume.

The spectroscopic community knew Norm well, and he was recognized by the wider scientific community with numerous awards. He received the Chemical Manufacturers Association Catalyst Award for Excellence in Teaching Chemistry (1987), the American Chemical Society Award for Research at an Undergraduate Institution (1996), and the Morley Medal awarded by the Cleveland Section of the ACS (2010). He was elected an ACS Fellow (2010).

Norm enjoyed sailing with his family, colleagues, and students on Lake Erie. He and his wife, Ann, generously supported Oberlin College and other local arts programs. Norm is survived by his wife Ann, three children, and five grandchildren.

Norm and Ann

Obituary Prof. (em.) Dr. Heinz Dieter Rudolph

Dr. Heinz Dieter Rudolph, professor emeritus of the University of Ulm, was born on June 18, 1924 in Breslau, today's Wroclaw in Poland, and died after a long illness of a stroke in his family home. He was 96 years old.

He received his school education in Breslau, later in Krotoschin where his family moved in 1941. He graduated from high school with greatest honor at the young age of 17, only to be drawn into military service, where he served on anti-aircraft guns in the Oderbruch and in Berlin during the last days of the war.

After the war and the brief imprisonment in a Canadian POW camp looking for members of his family, he was lucky enough to come to Landshut in Bavaria. Since he could not find anyone from his family through the German Red Cross, he began as a worker, then as an administrative employee of an American PX. During this time, he tried to create the economic and scientific conditions for starting studies. He did this by reading every science book in the PX library he could get his hands on and saving every penny he made from working night shifts.

In the summer semester of 1949, after an oral examination with Prof. Wolfgang Gentner, he was able to enroll in physics in Freiburg / Brsg., as all his certificates were lost in a fire in Krotoschin. One of his outstanding qualities was evident in the first semester: he never gave up when faced with difficulties - regardless of their nature. This strength in the adversities of the war and the post-war period remained with him until his death.

From 1951 he received a scholarship from the German Academic Foundation on the basis of his academic achievements.

His diploma thesis under the direction of Prof. Dr. Wilhelm Maier led him to the field of physical measurement methods in chemistry, to which he was bound throughout his scientific life.

He also immersed himself in the electronics he used in his work. From 1954 to 1956 he wrote a dissertation on the subject of "Sound absorption through relaxing chemical equilibrium: measurements of dilute solutions of the associating benzoic acid" and received his doctorate on the subject of "summa cum laude".

During this time in Germany, microwave technology was allowed to be used again. In the USA shortly after the war, Professors Dr. W. Gordy, Dr. Townes, and Dr. E. Br. Wilson Jr. had begun using components from radar equipment to build microwave spectrometers. This newly opened spectral band now made it possible to study polar gases.

On the advice of his doctoral supervisor, who recognized the potential of the new spectroscopic method, Heinz Dieter Rudolph went to the Laboratory for Physical Chemistry at the ETH Zurich as a visiting researcher to Prof. Dr. H. H. Guenthard, where a microwave spectrometer was under construction.

As a scholarship holder of the German Research Foundation after his return to Freiburg, he began in 1957 in Prof. Maier's group at the Institute for Physical Chemistry with the construction of a microwave spectrometer. Many integrated electronic parts were built by himself. At his advice and request, Helmut Dreizler joined the working group. They had known each other since the first semester of physics at the University of Freiburg.

The outstanding feature of the spectrometer was the use of phase-stabilized, frequency-tunable backward wave oscillators (carcinotrons) instead of free-running klystrons as "monochromatic" radiation sources. During a visit around 1960, Prof. Wilson judged the Freiburg spectrometer to be the best in the world. The resolving power had been significantly improved due to its phase stabilization properties. So now fine structures in rotational spectra could be approached with much higher precision, which was part of Heinz Dieter's habilitation thesis from 1962 on "Determining the hindrance potential of the methyl groups in dimethyl sulfide", in which the problem was treated experimentally with expanded theory. However, his interest was not just in experimentation and experimental techniques, but rather aimed at the most thorough theoretical penetration of problems, that was a feature of many of his later projects.

After several calls, Prof. Maier decided in 1963 to join the Physics institute of the University of Freiburg, where very generous funds were made available, in particular to expand the work in the field of molecular spectroscopy. During this time, Heinz Dieter Rudolph was appointed scientific advisor (Wissenschaftlicher Rat).

The promising beginnings were suddenly interrupted on April 26, 1964 by the untimely death of Prof. Maier, who had an accident on the coast of the Cinque Terre in Italy.

A very difficult period began for all employees. As the only member having a permanent position, Heinz Dieter Rudolph had to carry the largest burden and responsibility. Thanks to him, all work in the field of microwave spectroscopy could be continued with great success. The advanced measuring technology and the timely application of computers for quantum mechanical spectra analysis enabled capturing increasingly complex rotational spectra and structural analyses which formed the basis of widely acclaimed publications in these years.

A call as the successor to Professor Dr. W. Zeil to a chair for Physical Chemistry at the University of Ulm followed in 1973.

He was able to set up a group in which he could expand double resonance techniques in the areas of microwave-microwave and infrared-microwave resonance. The approaches which started in Freiburg were further extended and deepened. He understood to attract young scientists, on the one hand with continuous advice and help, on the other hand providing them with enough space for individual development. The results were excellent.

He complemented their projects by working on the structure determination of molecules which is the fundamental task of microwave spectroscopy. Originally, Kraitchman and Costain suggested to determine atom coordinates in the main axes of inertia of the molecule by isotoping of these atoms. Based on Heinz Dieter Rudolph's developments, it is now possible to

use every kind of isotopomer. This considerably eases issues with chemical preparation and thus helps to provide enough different isotopomers for structure elucidation. This sub-area currently has reached its best perfection.

After his retirement in 1992, he continued to work until one year before his death and published many papers on the determination of the equilibrium structure of medium-sized molecules. He also developed a set of computer programs permitting to determine the structure (r_0, r_s-fit, r_m, and r_e) of a large molecule using the weighted least-squares method with the possibility to use either the iteratively reweighted least-squares method or the mixed estimation method. A general package is available from:
https://www.uni-ulm.de/~hrudolph/sw_archiv/MOMSTRUC/

Although teaching never was his ultimate goal, he always prepared excellent lectures. They span a broad field of Physical Chemistry and Spectroscopy. His manuscripts testify deep knowledge and were meticulously elaborated. They still serve some colleagues as guideline.

Heinz Dieter Rudolph served his university as dean and member of the senate. He also was a member of the senate commission for electronic data processing due to his technical and scientific knowledge, but also his soft skills as a long-standing leader of a successful scientific group. In 1982 he took care of the local organization of the 81st Bunsen Tagung in Ulm.

Heinz Dieter Rudolph was always supported by his loving wife Helga. They were married since 1959. She passed away much too early in 1988. Heinz Dieter Rudolph is survived by his children Christine and Martin.

(Most of this text was taken from an honorary address by Prof Helmut Dreizler on the occasion of Prof. Rudolph's 65th birthday.)

Prof. Heinz Dieter Rudolph (right) with Prof. Helmut Dreizler and Barbara Starck.

Wolfgang Stahl

Figure caption: Wolfgang with his spectrometer, the “big cavity”.

It was with a heavy heart that I wrote of the passing away of Wolfgang, my PhD supervisor (my doctor father, as we say in German), my dear friend, and colleague. It has been almost a year that Wolfgang is gone, and I miss him. But now, it is with a smile that I am writing these words about him. I have realized that after all the highs and lows over the years, only nice memories remain. Wolfgang’s research is continued for at least another 30 years, I hope.

We loved to call Wolfgang „Professor Stahl“ because he was a favored teacher. Not only in his lectures, but also in every explanation he gave us. His group was never a working group; it was a family where we were all members. He took care of us, and we took care of each other, the older (PhD) cared for the younger (undergraduates). Yes, just like a family. The two microwave spectrometers were our working horses, and all of us cared for them. They kept producing nice spectra and kept us all happy. We children could do everything we liked. The only forbidden thing was putting two molecules in the spectrometer at the same time to do high-resolution measurements of one molecule during the day and scan the other molecule at night to save measurement time...

Wolfgang was a multitalented person. His passions included spectrometer design, group theory, and writing program codes, and he did all of that so well. He always told us, “You only do well the things you like.”, and that sentence surely came straight from his own experiences. Wolfgang built two molecular-jet Fourier-transform microwave spectrometers in the nineties, the “big cavity” working from 2 to 26.5 GHz and the “small cavity” from 26.5 to 40 GHz, which are still running all day and night. In working with theory, he could spend hours deriving new group theory formulations. His most recent and favorite accomplishment was a new labeling scheme base on the semi-direct products, which has changed our notation from Dreizler’s AA, AE, EA, EE, and EE* for two-top molecules to (00), (01), (10), (11), and (12). He also wrote several programs for fitting microwave spectra with internal rotations. Starting with a program which he lovely called aixPAM, where aix stands for aix la Chapelle, the french name of Aachen where his career flourished, to ntop for fitting n methyl rotor spectra, then WS18 to fit separately the large amplitude motion species. WS18 was written over Christmas 2017 to New Year's Day 2018, and Wolfgang quickly named it by his initial, thinking that we will change it one day when we publish. But none of us wanted to do that, and WS18 remains forever Wolfgang Stahl 2018, as a nice memory.

Wolfgang was a great scientist, but he was so humorful and very humble. He never wanted any dedication or recognition. He always quietly stood behind and pushed us forward.

Wolfgang was more than a doctor father for many of us. He is still living and will live forever in our hearts.

James Watson

James K G Watson passed away on December 18th at his home in Ottawa at the age of 84. He was a towering figure in the field of theoretical high resolution molecular spectroscopy, having made many significant contributions. He is best remembered for his paper that describes the simplification of the molecular rotation-vibration Hamiltonian, Molecular Physics 15(5) 479-490 (1968), which is a triumph of tensor algebra. Important in the field of rotational spectroscopy is his work on centrifugal distortion, and his prediction that, because of centrifugal distortion, nonpolar molecules such as methane will have a nonvanishing rotational spectrum. He was a wonderful colleague, seeming to know and understand everything. He had an uncompromising intellectual honesty coupled with a great sense of humour. We are lucky that a man of his intellect and character chose to work in the field of molecular spectroscopy.