

INSTYTUT FIZYKI POLSKIEJ AKADEMII NAUK



sesja sprawozdawcza
z działalności naukowej
w roku 2015

18 lutego 2016 • Aula im. Leonarda Sosnowskiego



SESJA PLAKATOWA

ON-1

- L. V. Khoi, A. Avdonin, K. Dybko, V. Kolkovsky, R. R. Gałazka**
Highly spin-polarized green electroluminescence achieved by spin filter in semimagnetic semiconductor bicrystals
- M. Szot, K. Dybko, P. Dziawa, A. Reszka, M. Wiater, B. J. Kowalski, T. Wojtowicz, T. Story**
Weak antilocalization in thin topological crystalline insulator SnTe layers grown on (100) oriented substrate
- K. Dybko, M. Szot, A. Szczerbakow, M. Gutowska, T. Zajarniuk, A. Szewczyk, T. Story**
Surface states of topological crystalline insulator SnTe observed in de Haas - van Alphen effect
- L. Kilański, A. Avdonin, I. Kuryliszyn-Kudelska**
Development of the alternating gradient magnetometer system
- A. Podgórn, L. Kilański, W. Dobrowolski, M. Górka, A. Reszka, B. J. Kowalski, V. Domukhovski, B. Brodowska, V. E. Slynko, E. I. Slynko**
Interplay of magnetic and transport properties in $Ge_{1-x}Pb_xCr_yTe$ composite system
- K. Levchenko, T. Andrearczyk, J. Z. Domagała, J. Sadowski, L. Kowalczyk, M. Szot, T. Figielski, T. Wosiński**
Structural and magnetic properties of (Ga,Mn)(Bi,As) thin epitaxial layers
- R. Kuna, J. Łażewski, S. Petit, P. Baroni, K. Gas, R. Minikayev, A. Szczerbakow, W. Szuszkiewicz**
Neutron scattering studies of phonon dispersion in (Pb,Cd)Te solid solution



SESJA PLAKATOWA

ON-2

J. Archer, M. Kolwas, G. Derkachov, M. Woźniak, D. Jakubczyk, K. Kolwas

Analysis of surface layer properties of evaporating microdroplet of aqueous SiO₂ nanospheres suspension with SDS surfactant

M. Woźniak, G. Derkachov, K. Kolwas, T. Wojciechowski, D. Jakubczyk, M. Kolwas

Evaporation-driven formation of spherical nanostructured aggregates from drying single microdroplets of colloidal suspension

M. Ławniczak, S. Bauch, V. Yunko, M. Białous, B. Dietz, L. Sirko
Study of power spectra of integrable and chaotic systems

M. Ławniczak, Sz. Bauch, V. Yunko, M. Białous, L. Sirko
Study of the elastic enhancement factor and nearest neighbor spacing distribution for partially chaotic and chaotic systems

K. Kowalski, M. Głódź, E. Kwiek, J. Szonert
Polarization dependent effects in cold multi-level ladder-type electromagnetically induced transparency systems

E. Białkowska-Jaworska, L. Pszczółkowski, Z. Kisiel, I. Uriarte, P. Ecija, F. J. Basterretxea, E. J. Cocinero
Rotational Spectroscopy of Newly Detected Atmospheric Ozone Depleters CF₃CH₂Cl, CF₃CCl₃, and CF₂ClCCl₃

A. Abaloszew, I. Abaloszewa, M. Konczykowski, M. A. Tanatar, R. Prozorov
Vortex pinning and creep in single crystals BaKFeAs with intrinsic and irradiation-induced disorder

P. Gierłowski
Superconducting niobium cavity for penetration depth and surface resistance measurements



SESJA PLAKATOWA

ON-2 (c.d.)

A. Malinowski, V. L. Bezusyy, P. Nowicki

Saturation of resistivity, magnetoresistance and Kohler's rule in the normal-state of $La_{1.85}Sr_{0.15}CuO_4$ doped with Ni

A. Hałasa, L. Łapiński, I. Reva, H. Rostkowska, R. Fausto, M. J. Nowak

Near-infrared laser-induced generation of three rare conformers of glycolic acid

T. Sowiński, M. Gajda, K. Rzażewski

Pairing in a system of a few attractive fermions in a harmonic trap

D. Pęczak, M. Gajda, T. Sowiński

Two-flavour mixture of a few fermions of different mass in a one-dimensional harmonic trap

M. Mińkowski, M. Załuska-Kotur

Monte Carlo simulations of self-organising nanostructures in PbTe/CdTe multilayer system

P. Deuar, N. Proukakis, T. Świsłocki

The Wigner Stochastic Gross-Pitaevskii Equation: a c -field theory that includes both thermal and quantum fluctuations

J. Pietraszewicz, P. Deuar

The accuracy and applicability of classical fields to quantum systems

I. Nowicki, T. Świsłocki, J. Pietraszewicz, E. Witkowska, R. Ng,

P. Deuar

Spontaneous "wild" solitons in ultracold Bose gas

T. Świsłocki, P. Deuar

Quasicondensate dynamics with both classical field and quantum fluctuations included



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M. Matuszewski, M. Kulczykowski

Phase ordering kinetics of a nonequilibrium exciton-polariton condensate

M. Janowicz, J. Kaleta, F. Krzyżewski, M. Rusek, A. Orłowski

Homotopy analysis method for stochastic differential equations with maxima

F. Krzyżewski, M. Załuska-Kotur, H. Turski, M. Sawicka,

C. Skierbiszewski

Kinetic Monte Carlo simulations of vicinal GaN(0001) surface evolution during N-rich growth

D. Kajtoch, E. Witkowska

Quantum dynamics generated by the two-axis countertwisting Hamiltonian

N. Bobrowska, E. A. Ostrovskaya, M. Matuszewski

Stability and spatial coherence of non-resonantly pumped exciton-polariton condensates and adiabatic approximation

M. Kulczykowski, N. Bobrowska, M. Matuszewski

Bright sink-type localized states in exciton-polariton condensates

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M. Głowacki, P. Iwanowski, J. Fink-Finowicki, R. Diduszko, M. Czech, W. Adamczuk, M. Berkowski, A. Wiśniewski

Wytwarzanie i charakteryzacja monokryształów materiałów tlenkowych

R. Kalvig, E. Jędryka, M. Wójcik, L. Michez, M. Petit, V. Le Thanh

Anisotropic properties and domain structure of Mn₅Ge₃ thin films – FMR study



SESJA PLAKATOWA

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P. Nawrocki, M. Wójcik, E. Jędryka, E. Menéndez, A. Vantomme, K. Temst

⁵⁹Co NMR studies of Co based systems with exchange bias effect induced by O⁺ ion implantation

E. Mosiniewicz-Szablewska, P. Suchocki, P. C. Morris

Antitumor activity and magnetic properties of PVM/MA-shelled selol nanocapsules

N. Nedelko, P. Aleshkevych, A. Kornowicz, J. Lewiński, A. Krzyżewski, S. Lewińska, A. Ślawska-Waniewska

Magnetism of Mn(dppm)₂(OAc): Field induced slow magnetic relaxation of single five-coordinated Mn(III) ion

A. Marynowska, S. Lewińska, E. Dynowska, A. Ślawska-Waniewska, A. Pietruczik, J. Fassbender, R. Boettger, A. Wawro, L. T. Baczewski
Ion beam irradiation-induced changes of magnetic and structural properties of Fe/Pt multilayers

E. Milińska, A. Petruczik, J. Kanak, Z. Kurant, M. Tekielak, A. Maziewski, K. Ollefs, A. Rogalev, A. Wawro

Magnetic and structural properties of Co/Mo systems

K. Lasek, L. Gładczuk, M. Sawicki, P. Aleskevych, P. Przystupski
Magnetic anisotropy of the Co_xFe_{1-x}/MgO structures grown on Au(111)

J. Piętosa, K. Piotrowski, R. Puźniak, A. Wiśniewski, S. Kolesnik, B. Dąbrowski

Impact of charge doping, oxygen disorder and hydrostatic pressure on thermoelectric and magnetic properties of NdBa_{0.94}La_{0.06}Co₂O_{5+δ}



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I. Radelytskyi, R. Szymczak, D. Gawryluk, R. Puzniak, M. Berkowski, M. Pekala, R. Diduszko, J. Fink-Finowicki, H. Szymczak
Inverse and conventional magnetocaloric effects in Fe₇Se₈ single crystal

A. Ciechan, M. J. Winiarski, M. Samsel-Czekala
Density functional study of TM-doped FeSe: influence of magnetism on superconductivity

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S. Safaei, M. Galicka, P. Kacman, R. Buczko
Quantum spin Hall effect in IV-VI topological crystalline insulators

Q. Van Vuong, T. T. Nguyen, M. S. Li
A new method for navigating optimal direction for pulling ligand from binding pocket: application to ranking binding affinity by steered molecular dynamics

P. D. Q. Huy, Q. Van Vuong, Z. Bednarikova, A. Antosova, K. Siposova, M. S. Li, Z. Gazova
Inhibition of insulin amyloid fibrillization by glyco-acridines: In vitro and in silico study

Ya. Zhydachevskii, I. Kamińska, M. Glowacki, A. Twardak, S. Ubizskii, P. Bilski, M. Berkowski, K. Fronc, D. Elbaum, A. Suchocki
Luminescent properties of the oxygen-deficient YAG, YAP and YAM

M. Sobanska, Z. R. Zytewicz, K. Klocek, G. Tchutchulashvili
Kinetics of spontaneous nucleation and PAMBE growth of GaN nanowires on amorphous Al_xO_y studied by RHEED

K. P. Korona, M. Sobanska, Z. R. Zytewicz, K. Klocek
Influence of growth conditions on optical properties of GaN nanowires grown by PAMBE on amorphous Al_xO_y



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ON-4 (c.d.)

**I. A. Kowalik, M. I. Łukasiewicz, E. Guziewicz, M. Godlewski,
F. J. Luque, M. A. Nino, A. Zakharov, D. Arvanitis**

X-ray spectro-microscopy on ZnO thin films: tracing the origin of ferromagnetism upon Co doping

**A. Kaminska, P. Strak, J. Borysiuk, J. Z. Domagała, E. Grzanka,
M. Beeler, K. Sakowski, E. Monroy, S. Krukowski**

Optical properties of GaN/AlN multi-quantum wells under high hydrostatic pressure: experimental investigations and ab initio study

**R. Pietruszka, B. S. Witkowski, S. Gieraltowska, L. Wachnicki,
E. Zielony, P. Bieganski, E. Płaczek-Popko, M. Godlewski**

Struktury fotowoltaiczne ZnO/Si – nowe rozwiązania

**E. Guziewicz, R. Ratajczak, D. Snigurenko, M. Stachowicz,
T. A. Krajewski, A. Stonert, A. Turos**

Epitaxial ZnO films implanted with Er and Yb

**A. Pieniżek, B. S. Witkowski, A. Reszka, Ł. Wachnicki,
S. Gieraltowska, M. Godlewski, B. J. Kowalski**

Green luminescence band in ZnO microrods – a cathodoluminescence study

D. Jarosz, A. Kamińska, A. Suchocki, A. Kozanecki, H. Teisseyre

Pressure induced increase of exciton-phonon interactions in a single ZnO/(ZnMg)O quantum well

**M. Stachowicz, D. Jarosz, M. A. Pietrzyk, J. M. Sajkowski,
E. Przeździecka, A. Kozanecki**

Optical investigation of coupled double asymmetric ZnO/ZnMgO quantum wells grown on nonpolar substrates by MBE



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- E. Dynowska, A. Marynowska, L. Baczewski, J. Fassbender, R. Bottger**
Structural properties of Fe/Pt multilayers before and after ion beam irradiation
- R. Minikayev, E. Dynowska, A. Szczerbakow, W. Szuszkiewicz, A. Bell**
The limit of CdTe solubility in PbTe and the phase diagram of (Pb,Cd)Te solid solution
- W. Paszkowicz, J. López -Solano, P. Piszora, B. Bojanowski, A. Mujica, A. Muñoz, Y. Cerenius, S. Carlson, H. Dąbkowska**
Compressibility and electronic structure variation with pressure for EuVO₄: A combined experimental and computational study
- R. Sobierajski, D. Klinger, I. Jacyna, P. Dłużewski, M. T. Klepka, E. Dynowska, R. Minikayev, J. B. Pełka, A. Wawro, A. Wolska, M. Jakubowski, A. Bartnik, J. Svekło, Z. Kurant, D. Eichert, F. Brgid, I. Makhotkin, S. Bakunin, A. Maziewski**
TEM, XRR, GIXRF, XRD and EXAFS studies of structural changes in ultrathin Pt/Co/Pt trilayers induced by nanosecond pulses from laser-plasma source operating in the EUV region
- D. Klinger, I. Jacyna, J. B. Pełka, A. Reszka, E. Łusakowska, A. Wawro, M. Jakubowski, A. Bartnik, R. Sobierajski**
Morphological and structural modifications induced In ultrathin metallic films by nanosecond pulses from EUV laser-plasma source
- K. Morawiec**
Perspectives of application of GPU to electron microscopy problems
- A. Wolska, M. T. Klepka, I. Sveklo, A. Wawro, A. Bartnik, P. Mazalski, R. Sobierajski, J. Fassbender, A. Maziewski**
XAFS study on the ion and light irradiated magnetic trilayers containing Co sandwiched between Au or Pt layers



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SL-1 (c.d.)

A. Drzewiecka-Antonik, M. T. Klepka, A. Wolska, P. Rejmak,
M. Struga, J. Stefańska

Synthesis and XAFS studies of bioactive copper complexes with thiourea derivatives

L. Nittler, Y. Syryanyy, K. Ławniczak-Jabłońska

XPS: A new technique for surface characterization at IFPAN (SL 1.2)

SL-2

M. Majewicz, G. Grabecki, P. Nowicki, Ł. Szyller, J. Wróbel,
M. Zholudev, V. Gavrilenko, N. N. Mikhailov, S. A. Dvoretiskii,
W. Knap, F. Teppe, T. Dietl

Low temperature preparation of $1 \mu\text{m} \times 1 \mu\text{m}$ HgTe/(Hg,Cd)Te Hall-bar

R. Wawrzyńczak, M. Majewicz, G. Grabecki, J. Wróbel, K. Dybko,
A. Jasik, E. Papis-Polakowska, M. Bugajski, T. Dietl

Quantum transport in microstructures of InAs/GaSb heterostructures

G. Grabecki, K. Graszka, A. Avodonin, P. Skupiński, I. Yahniuk,
R. Wawrzyńczak, M. Majewicz, A. Reszka, M. Foltyn, M. Zgirski,
T. Dietl

Quantum transport in three-dimensional Dirac semimetal Cd_3As_2

I. Yahniuk, G. Grabecki, M. Majewicz, J. Wróbel, T. Dietl, G. Cywiński,
C. Skierbiszewski, S. S. Krishtopenko, S. A. Dvoretzky,
N. N. Mikhailov, F. Teppe, W. Knap

Pressure-driven transition from topological insulator into band insulator phase in HgTe quantum well

D. Śnieżek, P. Nowicki, T. Wojciechowski, E. Bobko, G. Grabecki,
T. Wojtowicz, A. Mycielski, J. Wróbel

Thermally evaporated HgTe layers as planar ohmic contacts for CdTe and CdMnTe quantum wells



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SL-2 (c.d.)

**M. Foltyn, D. Sztenkiel, K. Kosiel, R. Adhikari, A. Piotrowska,
A. Bonanni, M. Sawicki, T. Dietl**

Manipulation of carrier concentration in GaN:Si-based metal-oxide-semiconductor structures

G. Mazur, J. Sadowski, T. Dietl, M. Sawicki

Transport and magnetism at ferromagnetic-paramagnetic critical point in $Ga_{1-x}Mn_xAs$

SL-3

**J. Mikulski, B. Sikora, K. Fronc, Ł. Kłopotowski, P. Aleshkevych,
S. Kret, J. Kossut**

Synthesis and characterization of opto-magnetic Cu-doped ZnO/MgO core/shell nanoparticles

P. Wojnar, M. Wiater, K. Fronc, J. Mikulski, Ł. Kłopotowski, J. Kossut
Tuning the emission energy from CdTe and CdSe quantum dots by copper doping

**S. Chusnutdinow, M. Szot, S. Kret, Ł. Kowalczyk, W. Zaleszczyk,
M. Wiater, W. Kołkowski, T. Wojtowicz, G. Karczewski**

Photoelectrical properties of p-CdZnTe/i-CdTe/n-CdTe diodes with PbTe nano-inclusions

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A. Poma, M. Chwastyk, M. Cieplak

Coarse-grained model of the native cellulose I-alpha and the transformation pathways to the I-beta allomorph

B. Różycki, M. Cieplak, M. Czjzek

Conformational ensemble of the multi-domain Xylanase Z of Clostridium thermocellum



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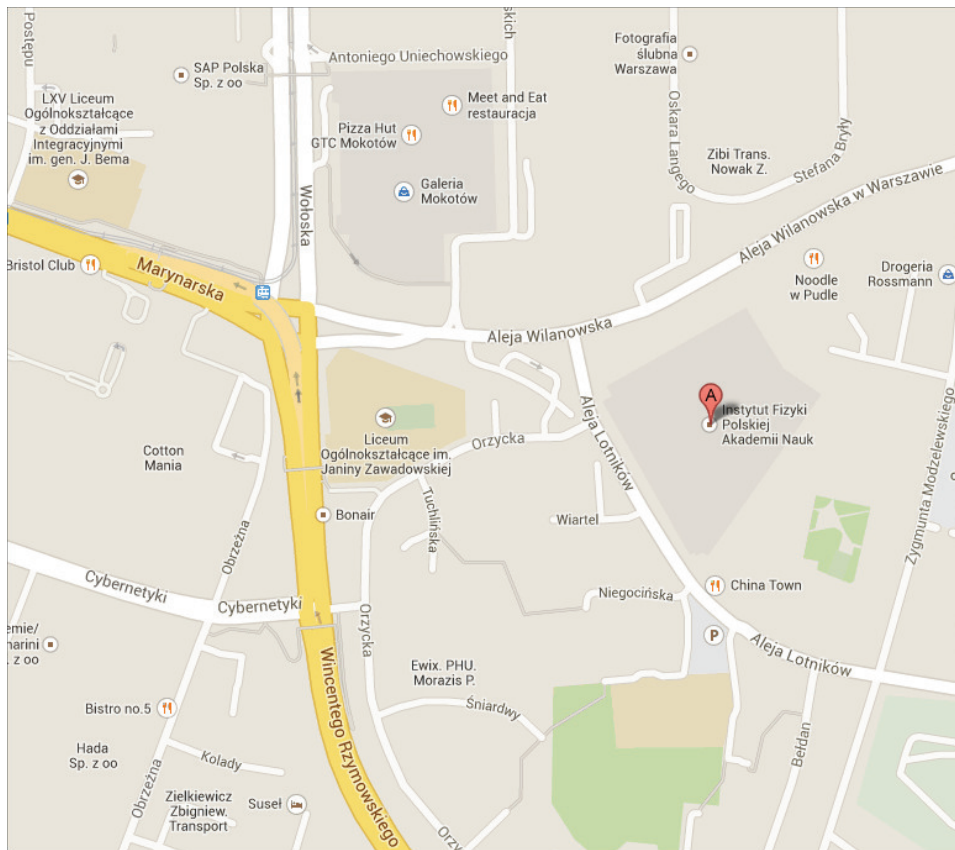
SL-4 (c.d.)

P. Kowalik, B. Sikora, J. Mikulski, K. Fronc, I. Kamińska, M. Szewczyk, G. Gruzeł, K. Zajdel, M. Naurecka, R. Minikayev, T. Wojciechowski, M. Parlińska-Wojtan, A. Sienkiewicz, M. Łapiński, M. Kwaśny, A. Gardias, J. Rybusinski, J. Szczytko, A. Twardowski, M. Frontczak-Baniewicz, P. Stępień, W. Paszkowicz, D. Elbaum
Synthesis and characterization of opto-magnetic up-converting $\text{NaYF}_4\&\text{Fe}_3\text{O}_4/\text{SiO}_2$ nanoparticles for biological and medical applications

I. Kamińska, K. Fronc, B. Sikora, P. Dziawa, T. Wojciechowski, R. Minikayev, W. Paszkowicz, W. Zaleszczyk, K. Sobczak, M. Szewczyk, A. Konopka, M. Mouawad, A. Siemiarczuk, M. Łapiński, M. Kaliszewski, M. Włodarski, J. Młyńczak, K. Ciszak, D. Piątkowski, S. Maćkowski, G. Wilczyński, P. Stępień, D. Elbaum
Lanthanide doped upconverting nanoparticles for high contrast in vitro imaging

18 lutego 2016

SERDECZNIE ZAPRASZAMY



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