

# Curriculum Vitae - Michał Matuszewski

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## Personal data:

Date and place of birth: 7 January 1980, Chorzów, Poland.

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02-668 Warszawa, Poland.

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## Professional Experience:

- 2015- Head of the Quantum Optics Group (ON 2.6) at the Institute of Physics of the Polish Academy of Sciences, Warsaw, Poland.
- 2013- Associate professor (profesor nadzwyczajny) at the Institute of Physics of the Polish Academy of Sciences, Warsaw, Poland.
- 2010-2013 Assistant professor (adiunkt) at the Institute of Physics of the Polish Academy of Sciences, Warsaw, Poland.
- 2009-2010 ARC Australian Postdoctoral Fellow (APD) at the Nonlinear Physics Centre, Research School of Physical Sciences and Engineering, Australian National University, Canberra.
- 2007-2008 Postdoctoral Fellow at the Nonlinear Physics Centre, Research School of Physical Sciences and Engineering, Australian National University, Canberra.

## Qualifications:

- 2012 DSc (habilitation) in Theoretical Physics, Institute of Physics of the Polish Academy of Sciences, Warsaw, Poland.
- 2007 PhD in Theoretical Physics, Faculty of Physics, Warsaw University, „Poszukiwanie wielowymiarowych solitonów optycznych przy użyciu metod wariacyjnych”, supervisor: dr hab. Marek Trippenbach.
- 2004-2007 Postgraduate studies at the Warsaw University, Faculty of Physics, Chair for Quantum Optics and Atomic Physics, supervisor: dr hab. Marek Trippenbach.
- 2004 MSc in Theoretical Physics, Faculty of Physics, Warsaw University, „Badanie propagacji impulsów świetlnych w nieliniowych ośrodkach optycznych”, supervisor: dr hab. Marek Trippenbach.

- 1999-2004 Undergraduate studies at the Warsaw University, Individual Inter-faculty Studies in Mathematics and Natural Sciences.
- 2003 BSc in Computer Science at the Faculty of Mathematics, Informatics, and Mechanics, Warsaw University.

**Prizes, Awards, and Fellowships:**

- Scholarship for outstanding young scientists, Ministry of Science and Higher Education (2012-2015).
- Stefan Pieńkowski award of the Polish Academy of Sciences in the field of Physics and Astronomy (2011).
- “HOMING PLUS” research fellowship, Foundation for Polish Science, 2010-2012.
- Australian Postdoctoral Fellowship (APD) three-year research fellowship funded by the Australian Research Council (ARC), 2009-2011.
- Oliphant Endowment Fund Postdoctoral Fellowship, two-year research fellowship at the Australian National University, 2008-2009.
- Scholarship for the best young scientists (START), Foundation for Polish Science, 2006 and 2007,
- Scholarship of the Minister of Education of Poland, 1999, 2002-2003 and 2003-2004,
- Bronze medal at the 40th International Mathematical Olympiad, Bucharest (1999),
- Four prizes of polish Mathematics and Physics Olympiads, 1998 and 1999,
- Scholarship from the Polish Childrens’ Fund (1998-99),
- Scholarship from the Prime Minister of Poland (1998).

**Research areas:**

- Bose-Einstein condensates – exciton and polariton condensates, spinor condensates, superfluidity and stability.
- Nonequilibrium phase transitions – universality of dynamics, formation of defects.
- Solitons – existence and stability of solitons in continuous and periodic nonlinear media.
- Nonlinear optics – nonlinear light propagation in colloidal and Kerr media, nonlinear waveguide arrays.

**Other activities:**

- Member of the Science Dissemination committee of the Minister of Science and Higher Education of Poland (2014-2016).
- Member of the Young Researchers Council, advisory committee of the Minister of Science and Higher Education of Poland (2012-2013).
- Member of the Committee of the Australian National University Mountaineering Club (2008-2010).
- Elector of the Dean of the Faculty of Physics at the University of Warsaw (representative of PhD students, 2005).

### **Supervision of students:**

- Piotr Stepnicki, MSc, “Polarytony w polu magnetycznym”, co-supervisor together with prof. Witold Bardyszewski, University of Warsaw, 2015.
- Michał Kulczykowski, PhD candidate (2013-).
- Paweł Miętki, PhD candidate (2016-).
- Andrzej Opala, PhD candidate (2017-).

### **Teaching experience:**

- Member of the Central Committee of the Polish Physics Olympiad, 2005-2007 and 2010-2012.
- Teaching at the Institute of Physics, Polish Academy of Sciences: Lecture “Nonlinear Physics in a nutshell”.
- Teaching at University of Warsaw (210h): Physics I, Foundations of Modern Physics, Computer Laboratory, Programming in C++, Nonlinear Optics.
- Lectures for general public (Festiwal Nauki).

### **Stays in external institutions:**

- July-August 2005, visiting student in the group of prof. Wiesław Królikowski, Laser Physics Centre, Australian National University, Canberra.
- November 2010, visit in the group of prof. Kai Bongs, University of Birmingham, UK.
- January-March 2011, visit in the group of prof. Yuri Kivshar, Australian National University, Canberra.
- June 2011, visit in the group of prof. Alexey Kavokin, University of Southampton, UK.
- October 2011, visit in the group of prof. Kai Bongs, University of Birm-

ingham, UK.

- February 2012, visit in the group of prof. Alexey Kavokin, University of Southampton, UK.
- February 2013, visit in the group of prof. Jacqueline Bloch, CNRS/LPN, France.
- February 2013, visit in the group of prof. Alberto Bramati, Université Pierre et Marie Curie - Paris 6, France.
- February-March 2014, visit in the group of dr Elena Ostrovskaya, Australian National University, Canberra.
- July 2014, visit in the group of dr Fabrice Laussy, Universidad Autonoma de Madrid.
- August 2015, visit in the group of dr Marzena Szymańska, University College London.
- October 2016, visit in the group of prof. Daniele Sanvitto, Lecce, Italy.
- March 2018, visit in the group of dr Marzena Szymańska, University College London.

#### **Leader of research projects:**

- “InterPol. Polariton lattices: a solid state platform for quantum simulations of correlated and topological states”, Principal investigator of the international consortium, Quant-ERA scheme grant 2017/25/Z/ST3/03032, National Science Center and European Commission, 2018-2021.
- “New quantum states in polaritonic fluids of light”, SONATA BIS scheme grant 2016/22/E/ST3/00045, National Science Center, 2017-2022.
- “Nonequilibrium bosonic gases in semiconductors under the influence of external fields”, OPUS scheme grant 2015/17/B/ST3/02273, National Science Center, 2016-2018.
- “Nonlinear phenomena in polariton and exciton superfluids”, grant for PhD holders starting a career in research (SONATA), National Science Center, 2011-2017.
- “Kwantowe stany i przemiany fazowe w kondensatach Bosego-Einsteina ze spinem”, Iuventus Plus, Ministry of Science and Higher Education, 2012-2013.
- “Magnetic interactions in spinor Bose-Einstein condensates”, HOMING PLUS, Foundation for Polish Science, EU funded, 2010-2012.
- Discovery Project „Nonlinear optics in soft matter”, Australian Research Council, 2009-2010.

### **Participation in research projects:**

- European Union project „Nanodesigning of atomic and molecular quantum matter” (NAME-QUAM), 2010-2012.
- Centre of Excellence for Quantum-Atom Optics (ACQAO), Australian Research Council, 2007-2010.
- Grant MNiSW N202 128539 „Dynamiczne zmiany koherencji w gazach kwantowych” (2010-2012).
- Grant KBN 2P03B 04325 „Nieliniowa Optyka Fotonów i Atomów”, Polish Ministry of Science.
- Grant MNiI PBZ MIN-008/P03/2003 „Informatyka i inżynieria kwantowa”, Polish Ministry of Science (2006-2007).
- Grant MNiI N202 014 31/0567 „Badania solitonów w nieliniowych ośrodkach optycznych i kondensatach Bosego-Einsteina z periodyczną modulacją” (promotorski), Polish Ministry of Science (2006-2007).

### **Professional memberships:**

- European Physical Society,
- Mediterranean Institute of Fundamental Physics.

### **Referee of journals:**

- Nature Communications,
- Physical Review Letters,
- Physical Review A,
- Physical Review B,
- Physical Review E,
- Optics Letters,
- Journal of Physics B,
- New Journal of Physics,
- Chaos, Solitons, and Fractals,
- Superlattices and Microstructures,
- Acta Physica Polonica A.

### **Conferences:**

- 17 invited lectures, 7 contributed oral presentations, and 17 poster presentations at international conferences and workshops.
- Co-organizer of the “1st Young Researchers Forum”, April 2013.

**Foreign languages:**

- English – fluent,
- Spanish – intermediate,
- German – basic.

## Refereed research papers:

1. M. Matuszewski, W. Wasilewski, M. Trippenbach, Y. B. Band, "Self-consistent treatment of the full vectorial nonlinear optical pulse propagation equation in an isotropic medium", *Opt. Commun.* **221**, 337-351 (2003). *Impact Factor: 1.58.*
2. M. Trippenbach, M. Matuszewski, E. Infeld, Cao Long Van, R. S. Tasgal, Y. B. Band, "Enhancement of third harmonic generation by wave vector mismatch to counter phase-modulation", *Opt. Commun.* **229**, 391-395 (2004). *Impact Factor: 1.58.*
3. R. S. Tasgal, M. Trippenbach, M. Matuszewski, Y. B. Band, "Highly nonlinear dynamics of third-harmonic generation by focused beams", *Phys. Rev. A* **69**, 013809 (2004). *Impact Factor: 2.9.*
4. M. Matuszewski, M. Trippenbach, B. A. Malomed, E. Infeld, A. A. Skorupski, "Two-dimensional dispersion-managed light bullets in Kerr media", *Phys. Rev. E* **70**, 016603 (2004). *Impact Factor: 2.35.*
5. M. Trippenbach, M. Matuszewski, B. A. Malomed, "Stabilization of three-dimensional matter-waves solitons in an optical lattice", *Europhys. Lett.* **70**, 8-14 (2005). *Impact Factor: 2.12.*
6. M. Matuszewski, E. Infeld, B. A. Malomed, M. Trippenbach, "Fully three dimensional breather solitons can be created using Feshbach resonance", *Phys. Rev. Lett.* **95**, 050403 (2005). *Impact Factor: 7.4.*
7. M. Matuszewski, E. Infeld, M. Trippenbach, "Stability analysis of three dimensional breather solitons in a Bose Einstein Condensate", *Proc. R. Soc. A* **461**, 3561-3574 (2005). *Impact Factor: 1.4.*
8. M. Matuszewski, C. R. Rosberg, D. N. Neshev, A. A. Sukhorukov, A. Mitchell, M. Trippenbach, M. W. Austin, W. Królikowski, Y. S. Kivshar, "Crossover from self-defocusing to discrete trapping in nonlinear waveguide arrays", *Opt. Express* **14**, 254 - 259 (2006). *Impact Factor: 3.8.*
9. M. Matuszewski, E. Infeld, B. A. Malomed, M. Trippenbach, "Stabilization of three-dimensional light bullets by a transverse lattice in a Kerr medium with dispersion management", *Opt. Commun.* **259**, 49-54 (2006). *Impact Factor: 1.58.*
10. P. Ziń, E. Infeld, M. Matuszewski, G. Rowlands, M. Trippenbach, "Method for obtaining exact solutions of the nonlinear Schrödinger equation for a double-square-well potential", *Phys. Rev. A* **73**, 022105 (2006). *Impact Factor: 2.9.*
11. E. Infeld, M. Matuszewski, M. Trippenbach, "A hybrid variational method of describing pulse splitting by dispersion management", *J. Phys. B* **39**, L113-L118 (2006). *Impact Factor: 1.76.*
12. M. Matuszewski, W. Królikowski, M. Trippenbach, Y. S. Kivshar, "Simple and efficient generation of gap solitons in Bose-Einstein condensates", *Phys. Rev. A* **73**, 063621 (2006). *Impact Factor: 2.9.*

13. E. Infeld, M. Matuszewski, C. Shino, M. Trippenbach, "Can a variational approach describe pulse splitting in a dispersion managed system?", *Optica Applicata* **36**, 575 (2006). *Impact Factor: 0.46*.
14. M. Matuszewski, B. A. Malomed, M. Trippenbach, "Spontaneous symmetry breaking of solitons trapped in a double-channel potential", *Phys. Rev. A* **75**, 063621 (2007). *Impact Factor: 2.9*.
15. M. Matuszewski, B. A. Malomed, M. Trippenbach, "Competition between attractive and repulsive interactions in two-component Bose-Einstein condensates trapped in an optical lattice", *Phys. Rev. A* **76**, 043826 (2007). *Impact Factor: 2.9*.
16. M. Matuszewski, W. Królikowski, Y. S. Kivshar, "Spatial solitons and light-induced instabilities in colloidal media", *Opt. Express* **16**, 1371 (2008). *Impact Factor: 3.8*.
17. M. Trippenbach, E. Infeld, J. Gocalek, M. Matuszewski, M. Oberthaler, B. A. Malomed, "Spontaneous symmetry breaking of gap solitons and phase transitions in double-well traps", *Phys. Rev. A* **78**, 013603 (2008). *Impact Factor: 2.9*.
18. M. Matuszewski, T. J. Alexander, Y. S. Kivshar, "Spin-Domain Formation in Antiferromagnetic Condensates" *Phys. Rev. A* **78**, 023632 (2008). *Impact Factor: 2.9*.
19. M. Matuszewski, W. Królikowski, Y. S. Kivshar, "Soliton interactions and transformations in hard-sphere colloids", *Phys. Rev. A* **79**, 023814 (2009). *Impact Factor: 2.9*.
20. M. Matuszewski, W. Królikowski, Y. S. Kivshar, "Bistable solitons in colloidal media", *Photonics Lett. Pol.* **1**, 4 (2009).
21. N. V. Hung, M. Matuszewski, M. Trippenbach, "Matter wave soliton collisions in the quasi one dimensional potential", *Physica D* **238**, 1449-1455 (2009). *Impact Factor: 1.74*.
22. M. Matuszewski, T. J. Alexander, Y. S. Kivshar, "Excited spin states and phase separation in spinor Bose-Einstein condensates", *Phys. Rev. A* **80**, 023602 (2009). *Impact Factor: 2.9*.
23. M. Matuszewski, "Engineering optical soliton bistability in colloidal media", *Phys. Rev. A* **81**, 013820 (2010). *Impact Factor: 2.9*.
24. M. Matuszewski, I. L. Garanovich, A. A. Sukhorukov, "Light bullets in nonlinear periodically curved waveguide arrays", *Phys. Rev. A* **81**, 043833 (2010). *Impact Factor: 2.9*.
25. M. Matuszewski, T. J. Alexander, Y. S. Kivshar, "Magnetic domains in spinor Bose-Einstein condensates", *Fiz. Nizk. Temp.* **36**, 883 (2010). *Impact Factor: 0.78*.
26. M. Matuszewski, "Rotonlike instability and pattern formation in spinor Bose-Einstein condensates", *Phys. Rev. Lett.* **105**, 020405 (2010). *Impact Factor: 7.4*.
27. M. Matuszewski, "Ground states of trapped spin-1 condensates in magnetic field", *Phys. Rev. A* **82**, 053630 (2010). *Impact Factor: 2.9*.
28. T. Świsłocki, M. Matuszewski, "Controlled creation of spin domains in spin-1 Bose-



- Einstein condensates by phase separation”, Phys. Rev. A **85**, 023601 (2012). *Impact Factor: 2.9*.
29. M. Matuszewski, T. Taylor, A. V. Kavokin, “Exciton supersolidity in hybrid Bose-Fermi mixtures”, Phys. Rev. Lett. **108**, 060401 (2012). *Impact Factor: 7.4*.
  30. M. Matuszewski, K. Bongs, J. Kronjäger, “Patterns and excitations in antiferromagnetic spinor condensates”, Phys. Rev. A **85**, 023635 (2012). *Impact Factor: 2.9*.
  31. M. Matuszewski, T. C. H. Liew, Y. G. Rubo, and A. V. Kavokin, “Spin-orbital coupling and topology of spin-degenerate cold exciton gases”, Phys. Rev. B **86**, 115321 (2012). *Impact Factor: 3.7*.
  32. T. Świsłocki, E. Witkowska, J. Dziarmaga, M. Matuszewski, “Double universality of a quantum phase transition in spinor condensates: Modification of the Kibble-Zurek mechanism by a conservation law”, Phys. Rev. Lett. **110**, 045303 (2013). *Impact Factor: 7.4*.
  33. E. Witkowska, J. Dziarmaga, T. Świsłocki, M. Matuszewski, “Dynamics of the modified Kibble-Zurek mechanism in antiferromagnetic spin-1 condensates”, Phys. Rev. B **88**, 054508 (2013). *Impact Factor: 3.7*.
  34. P. Stepnicki, M. Matuszewski, “Tight-binding model for exciton-polariton condensates in external potentials”, Phys. Rev. A **88**, 033626 (2013). *Impact Factor: 2.9*.
  35. M. Matuszewski, E. Witkowska, “Universality in nonequilibrium condensation of exciton-polaritons”, Phys. Rev. B **89**, 155318 (2014). *Impact Factor: 3.7*.
  36. Y. Xue, M. Matuszewski, “Creation and Abrupt Decay of a Quasistationary Dark Soliton in a Polariton Condensate”, Phys. Rev. Lett. **112**, 216401 (2014). *Impact Factor: 7.4*.
  37. Emilia Witkowska, Tomasz Świsłocki, Michał Matuszewski, “Thermal fluctuations and quantum phase transition in antiferromagnetic Bose-Einstein condensates”, Phys. Rev. A **90**, 033604 (2014). *Impact Factor: 2.9*.
  38. N. Bobrovska, E. A. Ostrovskaya, M. Matuszewski, “Stability and spatial coherence of nonresonantly pumped exciton-polariton condensates”, Phys. Rev. B **90**, 205304 (2014). *Impact Factor: 3.7*.
  39. T. C. H. Liew, O. A. Egorov, M. Matuszewski, O. Kyriienko, X. Ma, E. A. Ostrovskaya, “Instability-induced formation and nonequilibrium dynamics of phase defects in polariton condensates”, Phys. Rev. B **91**, 085413 (2015). *Impact Factor: 3.7*.
  40. B. Piętka, D. Zygmont, M. Król, M. R. Molas, A. A. L. Nicolet, F. Morier-Genoud, J. Szczytko, J. Łusakowski, P. Zięba, I. Tralle, P. Stepnicki, M. Matuszewski, M. Potemski, B. Deveaud, “Magnetic field tuning of exciton-polaritons in a semiconductor microcavity”, Phys. Rev. B **91**, 075309 (2015). *Impact Factor: 3.7*.
  41. P. Stepnicki, B. Piętka, F. Morier-Genoud, B. Deveaud, M. Matuszewski, “Analytical

- method for determining quantum well exciton properties in a magnetic field”, Phys. Rev. B **91**, 195302 (2015). *Impact Factor*: 3.7.
42. M. Kulczykowski, N. Bobrovska, M. Matuszewski, “Bright sink-type localized states in exciton-polariton condensates”, Phys. Rev. B **91**, 245310 (2015). *Impact Factor*: 3.7.
  43. N. Bobrovska, M. Matuszewski, “Adiabatic approximation and fluctuations in exciton-polariton condensates”, Phys. Rev. B **92**, 035311 (2015). *Impact Factor*: 3.7.
  44. L. Dominici, M. Petrov, M. Matuszewski, D. Ballarini, M. De Giorgi, D. Colas, E. Cancellieri, B. Silva Fernández, A. Bramati, G. Gigli, A. Kavokin, F. Laussy, D. Sanvitto, “Real-space collapse of a polariton condensate”, Nature Commun. **6**, 8993 (2015). *Impact Factor*: 11.47.
  45. O. Voronych, A. Buraczewski, M. Matuszewski, and M. Stobińska, “Exciton-polariton localized wave packets in a microcavity”, Phys. Rev. B **93**, 245310 (2016). *Impact Factor*: 3.7.
  46. Tomasz Świsłocki, Emilia Witkowska, Michał Matuszewski, “Nonadiabatic quantum phase transition in a trapped spinor condensate”, Phys. Rev. A **94**, 043635 (2016). *Impact Factor*: 2.9.
  47. M. Kulczykowski, M. Matuszewski, “Phase ordering kinetics of a nonequilibrium exciton-polariton condensate”, Phys. Rev. B **95**, 075306 (2017). *Impact Factor*: 3.7.
  48. N. Bobrovska, M. Matuszewski, T. C. H. Liew, and O. Kyriienko, “Interactive optomechanical coupling with nonlinear polaritonic systems”, Phys. Rev. B **95**, 085309 (2017). *Impact Factor*: 3.7.
  49. R. Mirek, M. Król, K. Lekenta, J.-G. Rousset, M. Nawrocki, M. Kulczykowski, M. Matuszewski, J. Szczytko, W. Pacuski, and B. Piętka, “Angular dependence of giant Zeeman effect for semimagnetic cavity polaritons”, Phys. Rev. B **95**, 085429 (2017) *Impact Factor*: 3.7.
  50. O. Voronych, A. Buraczewski, M. Matuszewski, M. Stobińska, “Numerical modeling of exciton-polariton Bose-Einstein condensate in a microcavity”, Computer Phys. Commun. **215**, 246–258 (2017). *Impact Factor*: 3.6.
  51. B. Piętka, M. R. Molas, N. Bobrovska, M. Król, R. Mirek, K. Lekenta, P. Stepnicki, F. Morier-Genoud, J. Szczytko, B. Deveaud, M. Matuszewski, and M. Potemski, “2s exciton-polariton revealed in an external magnetic field”, Phys. Rev. B **96**, 081402(R) (2017). *Impact Factor*: 3.7.
  52. B. Piętka, N. Bobrovska, D. Stephan, M. Teich, M. Król, S. Winnerl, A. Pashkin, R. Mirek, K. Lekenta, F. Morier-Genoud, H. Schneider, B. Deveaud, M. Helm, M. Matuszewski, and J. Szczytko, “Doubly Dressed Bosons: Exciton Polaritons in a Strong Terahertz Field”, Phys. Rev. Lett. **119**, 077403 (2017). *Impact Factor*: 8.5.
  53. P. Miętki and M. Matuszewski, “Magnetic polarons in a nonequilibrium polariton condensate”, Phys. Rev. B **96**, 115310 (2017). *Impact Factor*: 3.7.
  54. A. Gianfrate, L. Dominici, O. Voronych, M. Matuszewski, M. Stobińska, D.

- Ballarini, M. De Giorgi, G. Gigli, D. Sanvitto, “Superluminal X-waves in a polariton quantum fluid”, *Light: Science & Applications* **7**, 17119 (2018). *Impact Factor: 14.6*.
55. N. Bobrovska, M. Matuszewski, K. S. Daskalakis, S. A. Maier, S. Kéna-Cohen, “Dynamical Instability of a Nonequilibrium Exciton-Polariton Condensate”, *ACS Photonics*, **5**, 111 (2018). *Impact Factor: 6.8*.
56. Y. Xue, Y. Jiang, G. Wang, R. Wang, S. Feng, M. Matuszewski, “Creation of stable dark and anti-dark solitons in polariton dyad”, *Optics Express* **26**, 6267-6275 (2018). *Impact Factor: 3.3*.
57. T. Świsłocki, A. Zembruski, M. Matuszewski, E. Witkowska, “Dynamic hysteresis from bistability in an antiferromagnetic spinor condensate”, *Phys. Rev. A* **97**, 033629 (2018). *Impact Factor: 2.9*.
58. A. Opala, M. Pieczarka, N. Bobrovska, M. Matuszewski, “Dynamics of defect-induced dark solitons in an exciton-polariton condensate”, *Phys. Rev. B* **97**, 155304 (2018). *Impact Factor: 3.8*.
59. Mateusz Król, Rafał Mirek, Katarzyna Lekenta, Jean-Guy Rousset, Daniel Stephan, Michał Nawrocki, Michał Matuszewski, Jacek Szczytko, Wojciech Pacuski, Barbara Piętka, “Spin polarized semimagnetic exciton-polariton condensate in magnetic field”, *Scientific Reports* **8**, 6694 (2018). *Impact Factor: 4.8*.
60. E. Estrecho, T. Gao, N. Bobrovska, M. D. Fraser, M. Steger, L. Pfeiffer, K. West, T. C. H. Liew, M. Matuszewski, D. W. Snoke, A. G. Truscott & E. A. Ostrovskaya, “Single-shot condensation of exciton polaritons and the hole burning effect”, *Nature Communications* **9**, 2944 (2018). *Impact Factor: 12.4*.
61. T. Suski, G. Staszczak, K. P. Korona, P. Lefebvre, E. Monroy, P. A. Drozd, G. Muzioł, C. Skierbiszewski, M. Kulczykowski, M. Matuszewski, E. Grzanka, S. Grzanka, K. Pieniak, K. Gibasiewicz, A. Khachapuridze, J. Smalc-Koziorowska, L. Marona, and P. Perlin, “Switching of exciton character in double InGaN/GaN quantum wells”, *Phys. Rev. B* **98**, 165302 (2018). *Impact Factor: 3.8*.
62. Paweł Miętki, Michał Matuszewski, “Spontaneous formation of spin lattices in semimagnetic exciton-polariton condensates”, *Phys. Rev. B* **98**, 195303 (2018). *Impact Factor: 3.8*.
63. Andrzej Opala, Maciej Pieczarka, and Michał Matuszewski, “Theory of relaxation oscillations in exciton-polariton condensates”, *Phys. Rev. B* **98**, 195312 (2018). *Impact Factor: 3.8*.

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## Conference Papers:

1. P. Wasylczyk, W. Wasilewski, M. Matuszewski, M. Trippenbach, Czesław Radzewicz, “Nonlinear propagation of femtosecond laser pulses in dielectrics”, Proceedings of SPIE Vol. **5258**, 20-24 (2003).
2. Michał Matuszewski, Eryk Infeld, Boris A. Malomed, A. A. Skorupski, Marek Trippenbach, “Two- and three-dimensional light bullets in a Kerr medium with dispersion management”, Proceedings of SPIE Vol. **5949**, 24-34 (2005).
3. C. Rosberg, M. Matuszewski, D. Neshev, A. Sukhorukov, A. Mitchell, M. Trippenbach, M. Austin, W. Krolikowski, Y. Kivshar, “Discrete Self-Trapping vs Defocusing in Nonlinear Waveguide Arrays”, Proceedings of Conference on Lasers and Electro-Optics Quantum Electronics and Laser Science/Conference on Photonic Applications Systems and Technologies (CLEO/QELS) (2006).
4. M. Matuszewski, W. Krolikowski, Y. Kivshar, “Soliton interactions and transformations in hard-sphere colloids”, Proceedings of European Conference on Lasers and Electro-Optics and the European Quantum Electronics Conference (CLEO/EQEC) (2009).
5. M. Matuszewski, A. Sukhorukov, I. Garanovich, “Mobile light bullets in curved waveguide arrays”, Proceedings of European Conference on Lasers and Electro-Optics and the European Quantum Electronics Conference (CLEO/EQEC) (2009).
6. M. Matuszewski, I. Garanovich, A. Sukhorukov, “Light Bullets in Nonlinear Curved Waveguide Arrays”, Proceedings of Australasian Conference on Optics Lasers and Spectroscopy and the Australian Conference on Optical Fibre Technology in association with the International Workshop on Dissipative Solitons (ACOLS ACOFT) (2009).

## **Other:**

1. P. Bajor, J. Fichna, M. Grabowski, B. Lis, M. Matuszewski, P. Oprocha “Jak napisać wniosek o finansowanie badań naukowych – poradnik Rady Młodych Naukowców”, (2013).