

Curriculum Vitae

Personal Data

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Scientific career

- 2010 **Professor title**, given by the President of the Republic of Poland
- 2002 **Habilitation (DSc)**, Jagiellonian University, Faculty of Physics, Astronomy and Applied Computer Science, *Physical Sciences - Molecular Physics*
- 1989 **Doctoral degree (PhD)**, Jagiellonian University, Faculty of Mathematics and Physics, *Atomic and Molecular Physics*
- 1985 - 1989 **Doctoral studies**, Jagiellonian University, Faculty of Mathematics and Physics, *Atomic and Molecular Physics*
- 1984 **Master degree (MSc)**, Jagiellonian University, *Physics*
- 1979 - 1984 **University education**, Jagiellonian University, Faculty of Mathematics, Physics and Chemistry, *Physics*

Professional career (in Poland)

- 2021 **Full ordinary professor - the honorary title**, Jagiellonian University, Krakow, Poland
- 2019 - 2021 **Full Professor**, Jagiellonian University
- 2010 - 2019 **Extraordinary Professor with the title**, Jagiellonian University
- 2007 - 2010 **Extraordinary Professor of Jagiellonian University**, Jagiellonian University
- 2002 - 2007 **Adjunct with habilitation**, Jagiellonian University
- 1996 - 2002 **Adjunct**, Jagiellonian University
- 1989 - 1996 **Assistant and Senior assistant**, Jagiellonian University
- 1984 - 1985 **Junior Assistant training**, Jagiellonian University

Professional experience (abroad)

- 2005-2007 (12 months in total) **United States**, Department of Physics, Texas A&M University, College Station, TX; Visiting Professor
- 2004 (3 months) **United States**, Department of Physics, Texas A&M University, College Station, TX; Research Associate
- 2001-2003 (12 months in total) **Canada**, Department of Physics, University of Windsor, Windsor; Visiting Scientist
- 1997-1998 (12 months) **Australia**, Commonwealth Scientific and Industry Research Organization, Division Manufacturing Science and Technology, Melbourne; Visiting Scientist
- 1996 - 1997 (12 months) **Canada**, Department of Physics, University of Windsor, Windsor; Visiting Scientist
- 1992 - 1994 (32 months) **Canada**, Department of Physics, University of Windsor, Windsor; Post-doctorate Fellow

Certificates

- 2019 Pro-quality and pro-equality relations- *Gender Equality Network in European Research Area*
- 2014 Psychological aspects of university management in the context of an organizational stress
- 2014 Rapports in SAP Business Objects in Jagiellonian University

- 2012 Training for managing employees, PhD students and students at the Jagiellonian University

Professional duties

- 2012 - presently **Chair** of the Research Centre for Atomic Scale Science – ATOMIN PHYSICS, Jagiellonian University
- 2019 - presently **Director** of Atomic Molecular and Optical Physics Nodal Laboratory in Krakow
- 2019 - presently **Member** of Atomic Molecular and Optical Physics National Laboratory Council in Torun
- 2020 - presently **Member** of the Awards Committee of Smoluchowski Institute of Physics, Jagiellonian University
- 2019 - presently **Member** of the Promotion Committee of Smoluchowski Institute of Physics, Jagiellonian University
- 2017 - presently **Head of Photonics Department** of the Smoluchowski Institute of Physics, Jagiellonian University
- 2019 - 2020 **Member of Senate** of the Jagiellonian University
- 2016 - 2020 **Chairman of the Council** of Smoluchowski Institute of Physics, Jagiellonian University
- 2019 - 2022 **Member** of Physical Sciences Discipline Board, Jagiellonian University
- 2008 - 2016 **Vice-Dean** of the Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University
- 2008 - 2016 **Member** of the Jagiellonian University Senate Commission for Scientific Research and International Cooperation
- 2008 - 2016 **Vice-member** of the Jagiellonian University Senate Commission for Property and Finances
- 1996,1999,2016,2020 **Member** of the Collegium of Electors, Jagiellonian University
- 2017 - 2019 **Member** of the Examination Board for PhD studies in the Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University
- 2008 - 2009 **Member** of Council for Teaching of Physics of the Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University
- 2003 - 2009 **Head of the Library Commission** of the Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University
- 1999 - 2002 **Representative of young scientific personnel** to the Faculty Council and Board of the Institute of Physics, Jagiellonian University
- 1995 - 1996 **Secretary** of the Krakow Division of the Polish Physical Society

Conferences organization

- 2020, 2021 **Member of the Scientific Committee of VI Polish Optics Conference** of Optics Section of the Polish Physical Society, Poland
- 2019 **Co-Chair of the Scientific Session of FAMO, Photonics and Quantum Information Section of 45. Convention of Polish Physicists** in Krakow, Poland
- 2018 **Co-Chair of 50th EGAS Conference** in Krakow, Poland
- 2012 **Chairman of the Organizing Committee of the Open Day of the ATOMIN Project: Atomic Scale Science for Innovative Economy**, Jagiellonian University, Poland
- 2001 **Chairman of the Organizing Committee** of the Conference "From Quantum Optics to Photonics" and the Annual Meeting of the European Optical Society, Zakopane, Poland
- 1995 **Secretary** of the Krakow-Heidelberg Physics Seminar, Krakow, Poland

Investment Projects

- 2021-2024 Project **INFRASTART** – *Increasing the efficiency of infrastructure use, Faculty of Physics, Astronomy and Applied Computer Science in 2021-2023, Leader*
- 2020-2023 Project **ATOMIN 2.0** - *ATOMic scale material science research centre for INnovative economy, POIR 4.2, Member of project council*
- 2016-2020 Project **PANDA 2** – *Support of maintenance costs of scientific infrastructure of the Faculty of Physics, Astronomy and Applied Computer Science in 2016-2020, co-Leader*
- 2015 Project **PANDA** – *Support of maintenance costs of scientific infrastructure of the Faculty of Physics, Astronomy and Applied Computer Science in 2015, co-Leader*
- 2009-2012 Project **ATOMIN** - *ATOMic scale science for INnovative economy, POIG 2.1, Leader*
- 2009-2011 Project **NLQT** - *Consortium National Laboratory of Quantum Technologies, POIG 2.1, Coordinator of JU*

Research grants

- 2016-2020 **Research General Grant OPUS 9, National Science Centre, Novel explorations of bonding in diatomic van der Waals molecules: high resolution rotational spectroscopy and advanced ab initio calculations – probing sources of discrepancies, PI**
- 2011-2015 **Research General Grant OPUS 1, National Science Centre, From molecular rotation to entanglement: supersonic molecular beam and tests of Bell's inequality for atoms, PI**
- 2007-2010 **Research Grant of the Ministry of Science and Higher Education Studies of rotations in van der Waals dimers - complexity of molecular potentials in sub-nano scale and their interdisciplinarity, PI,**
- 2007-2008 **Research Grant of the Ministry of Science and Higher Education Cold molecules in supersonic beams and properties of molecular bond - do we modify our view on van der Waals molecules?, PI**
- 2005-2007 **Robert A Welch Foundation grant, Spectroscopy and storage of the components of entangled quantum states of mercury, Texas A&M University, participant**
- 2004 **Research Grant Mercury Dimer Spectroscopy, Texas A&M University, participant**
- 2003 **Research Grant, Natural Sciences and Engineering Research Council of Canada, University of Windsor, participant**
- 2002 **Research Grant REMPI, Natural Sciences and Engineering Research Council of Canada, University of Windsor, participant**
- 2001-2003 **Research Grant, 5th Framework Program of the EU, Magnetic Resonance Imaging using hyperpolarized helium gas as a tool for the diagnosis of selected respiratory diseases, participant**
- 2001-2003 **Research Grant, Polish Committee for Scientific Research, Properties of van der Waals bonding in different regions of internuclear separations in dimers, PI**
- 2001-2002 **Research Grant, Polish Committee for Scientific Research, Modern methods of cold matter physics and quantum engineering, participant**
- 2001 **Research Grant, Natural Sciences and Engineering Research Council of Canada, University of Windsor, participant**
- 2000-2001 **Research Grant, Smoluchowski Institute of Physics, Cadmium dimers in supersonic beams", PI**
- 1996-1999 **Research Grant, Polish Committee for Scientific Research, Investigation of ro-vibrational structures of van der Waals complexes using method of a supersonic beam crossed with a laser beam, PI**
- 1997-1998 **Research Grant, Australian Mineral Industries Research Association, Gravimeter based on cold Cs atoms for petroleum explorations, Commonwealth Scientific and Industry Research Organization, Melbourne, participant**

- 1996-1997 **Research Grant**, Polish Committee for Scientific Research, *Studies of magnetic properties of thallium resonance levels using method of quantum beats*", main participant
- 1996-1997 **Research Grant**, Natural Sciences and Engineering Research Council of Canada, University of Windsor, participant
- 1995-1997 **French-Polish Research Grant POLONIUM**, *Molecules and atom-surface interaction*", participant
- 1993-1996 **Research Grant**, Polish Committee for Scientific Research, *Studies of atoms near a surface using methods of laser spectroscopy and evanescent wave*", participant
- 1992-1994 **Research Grant**, Natural Sciences and Engineering Research Council of Canada, University of Windsor, participant
- 1990-1992 **Research Grant**, Polish Ministry of Education, *Spectroscopy of highly-excited levels of sodium using method of quantum beats in forward scattered radiation*, PI

Other professional duties abroad

work for European Commission

- 2007, 2009, 2010 **Member** of the European Science Council (ERC) Starting Grants Evaluation Panel PE2: Fundamental constituents of matter
- 2018-presently **Independent Expert** in H2020 and Horizon Europe People Marie Skłodowska-Curie Action (Physics Panel)
- 2022 **Independent Expert** in HORIZON-EIC-2022-PATHFINDEROPEN-01; Brussels, Belgium
- 2014 **Member of the Interdisciplinary Board of Experts** of the Program *Europe as a global actor-Enhancing and focusing research and innovation cooperation*
- 2017, 2019, 2020 **Member of the Board of Experts** of the Program *H2020 Open Research and Innovation Action - Future and Emerging Technologies*
- 2015-2017 **Expert** in Cooperation FP7-ICT-FET-Open Xtrack
- 2021-2023 **Expert** in H2020-FETOPEN-2018-2020
- 2013-presently **Expert** in COST Action Trans Domain Proposals
- 2015-2017, 2019 **Expert** in evaluation of projects in COST: *Actions: Developing the Physics and the Scientific Community for Inertial Confinement Fusion and Quantum Technologies in Space*
- 2007-2010 **Independent Expert** in FP7 People Marie-Curie Actions EIF/IIF/OIF (Physics Panel)

work for other agencies

- 2017-2021 **Member of the Board of Experts** of *European Metrology Programme for Innovation and Research*; European Association of National Metrology Institutes, London, UK
- 2019-presently **Member** of European Science Foundation *College of Expert Reviewers*, Strasbourg, France
- 2018 **Member of the Board of Experts** for *Restart Research 2016-2020*, Research Technological Development and Innovation Programmes of the Research Promotion Foundation, Republic of Cyprus
- 2018 **Member of the Board of Experts** for *la Caixa Banking Foundation*, Spain
- 2022-presently **Member of the Board of Experts** for *European Quality Assurance*, Spain
- 2009-presently **Member of the Interdisciplinary Board of Experts** of the Program *SoMoPro*, South Moravian Centre for International Mobility; Brno, Czech Republic
- 2017-presently **Member of the Interdisciplinary Board of Experts** of the Program *Postdoctoral Research Aid*, Operational Programme *Growth and Employment*, The State Education Development Agency, Riga, Latvia

- 2007-2008, 2020-presently **Expert** of the Slovak Research and Development Agency; Bratislava, Slovakia
- 2003-presently **Peer reviewer** - reviews for scientific journals: *Physical Review Letters*, *Physical Review A*, *Applied Physics Letters*, *Journal of Molecular Physics*, *Journal of Chemical Physics*, *The European Journal of Physics*, *Chemical Physics*, *Journal of Quantitative Spectroscopy and Radiative Transfer*, *Acta Physica Polonica A*, *Acta Physica Polonica B*, *Optica Applicata*

Other professional duties in Poland

- 2014, 2016, 2018 **Member of Board of Experts** in Panel ST2, ST4, National Science Centre
- 2018-2020 **Member of the Interdisciplinary Board** for The Polish Map of Research Infrastructure, Ministry of Science and Higher Education
- 2016-2024 **Member of the Interdisciplinary Board** associated with participation of Polish Groups in international programs and endeavours connected with using strategic scientific infrastructure abroad, Ministry of Science and Higher Education
- 2019-presently **Expert of National Agency for Academic Exchange NAWA**, Ministry of Science and Higher Education
- 2011-2015 **Member of the Interdisciplinary Board** for the Program supporting scientific infrastructure in the framework of the Polish Science and Technology Fund, Ministry of Science and Higher Education
- 2011-presently **Expert** of the National Centre for Research and Development
- 2010-2017 **Expert** in Operational Program Innovative Economy; National Information Processing Institute
- 2009-2010 **Member of the Interdisciplinary Board** Supporting International Cooperation of the Council of Sciences of the Ministry of Science and Higher Education
- 2008 **Member of Board of External Experts** of the National Program *Foresight Poland 2020*, Ministry of Science and Higher Education
- 2007-2009 **Member of the Interdisciplinary Board** for Preparatory Grants of the Council of Sciences of the Ministry of Science and Higher Education
- 2006-2007 **Member of the Second Board of Specialists** N202 of the Polish Ministry of Science and Higher Education
- 2005 **Member of the Board of Specialists P03B** of the Polish Ministry of Education and Science

PhD thesis supervision

- 1999 - 2003 **Michał Łukomski**, *Spectroscopy of van der Waals molecules in supersonic beam. Characterization of electronic states of CdKr and Cd₂ - cum laude*
- 2002 - 2007 **Marek Ruszczak**, *Laser spectroscopy of cadmium-rare gas and cadmium-cadmium molecules produced in supersonic beam*
- 2004 - 2009 **Marcin Strojecki**, *Cold molecules in supersonic beam and studies of properties of interatomic bond*
- 2009 - 2015 **Tomasz Urbańczyk**, *Spectroscopy of dimers in supersonic beam – towards a quantum entanglement of atoms*
- 2017-2023 **Joanna Sobczuk (Dudek)** - *Excitation and emission spectroscopy of Rydberg states of diatomic van der Waals molecules containing 12. group elements*

PhD thesis referee

- 2007 **Piotr Kortyka**, *Studies of electronic structure of NaRb molecule* (University of Warsaw)
- 2007 **Monika Kubkowska**, *Studies of electronic states of Li₂, Na₂, Zn₂ and*

- ZnKr molecules using methods of laser and classical spectroscopy*
(University of Warsaw)
- 2009 **Leszek Krzemiń**, *Optical dipole trap for rubidium atoms* (Jagiellonian University)
 - 2010 **Anna Nikiel**, *Polarization of ^3He in conditions of hyperfine structure decoupling* (Jagiellonian University)
 - 2011 **Bartosz Głowacz**, *Detection of metastable He_2^+ molecules in helium plasma* (Jagiellonian University)
 - 2012 **Marcin Bober**, *Cold strontium atoms for metrological applications* (Jagiellonian University)
 - 2018 **Łukasz Sobolewski**, *Studies of spectroscopic parameters of heavy metals* (University of Gdansk)

Participation in the commissions for professorship and habilitation procedures

- 2008 **Krzysztof Dzierżęga**, **member** of the Central Commission for Academic Degrees and Titles (habilitation)
- 2014 **Ewa Pawelec**, **reviewer** of the Central Commission for Academic Degrees and Titles (habilitation)
- 2017 **Roman Ciuryło**, **reviewer** of the Central Commission for Academic Degrees and Titles (professorship)
- 2017 **Tomasz Nasiłowski**, **member** of the Central Commission for Academic Degrees and Titles (habilitation)
- 2019 **Jerzy Kwela**, **reviewer** of the Central Commission for Academic Degrees and Titles (professorship)
- 2019 **Wojciech Szajna**, **reviewer** of the Central Commission for Academic Degrees and Titles (habilitation)
- 2019 **Daniel Lisak**, **reviewer** of the Central Commission for Academic Degrees and Titles (professorship)
- 2019 **Piotr Wcisło**, **chair** of the Central Commission for Academic Degrees and Titles (habilitation)
- 2020 **Paulina Płochocka-Maude**, **reviewer** of the Scientific Excellence Council (professorship)
- 2020 **Łukasz Kłosowski**, **reviewer** of the Physical Science Discipline Board of Nicolaus Copernicus University in Torun (habilitation)
- 2022 **Katarzyna Bielska**, **reviewer** of the Physical Science Discipline Board of Nicolaus Copernicus University in Torun (habilitation)
- 2023 **Michał Makowski**, **reviewer** of the Scientific Excellence Council (professorship)

Honours and Awards

- 2023 **Jagiellonian University Rector Achievement Team Award of Third degree** for series of publications in the field of laser molecular spectroscopy of vdW molecules and application of neuron networks and genetic algorithms for determination of molecular potentials
- 2016 **Jagiellonian University Rector Achievement Team Award of First Degree** for the achievements in organizational activity
- 2009 **Jagiellonian University Rector Achievement Team Award of First degree** for series of publications in the field of laser molecular spectroscopy
- 2005-2006 **Adam Krzyżanowski Stipend for Scientific Research**
- 2005 **Jagiellonian University Rector Achievement Individual Award of Second Degree Scientific Achievement**: book *Van der Waals Complexes in Supersonic Beams. Laser Spectroscopy of Neutral-Neutral Interactions* (Wiley-VCH, Weinheim, 2003)
- 2002-2003 **Jagiellonian University Rector Stipend for Scientific Research**
- 2000 **Nomination for the “Sir Herold Thompson Memorial Award”** for an article for an article Koperski *et al.*, *Spectrochimica Acta Part A* 56 (2000) 1613 by Elsevier Science
- 1997 **Jagiellonian University Assistants Society Award** for the best

- 1997 scientific publications
Jagiellonian University Rector Achievement Team Award for series of publications on quantum beats spectroscopy and its applications

Memberships

- 2018-presently **Member** of the Optics Section of the Polish Physical Society
- 1998 **Member** of the Australian Physical Society
- 1995-1996 **Secretary** of the Krakow Division of the Polish Physical Society
- 1990-2005 **Ordinary** Member of the European Physical Society
- 1989-2005 **Member** of the Polish Physical Society

Patent applications

- 2016 **Pulsed source of supersonic molecular beam and carrier gas supply method to pulsed source of supersonic molecular beam**, RP No P.419598, 25 November 2016
- 2019 **Source module of continuous supersonic molecular beam**, RP nr P.428617, 21 January 2019