

Curriculum Vitae



Personal data:

- Name: Peter Jeglič
- Date and place of birth: October 15th 1977, Ljubljana, Slovenia
- Marital status: Married, two children
- Nationality: Slovenian
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Education:

- PhD in physics, “Physical properties of decagonal quasicrystals and quasicrystalline approximants”, University of Ljubljana, 2004.
- BSc in physics, “Temperature-dependent bitumen softening studied by NMR”, University of Ljubljana, 2000.

Current and past positions:

- 2018 – now **Senior Research Fellow at Jožef Stefan Institute.**
- 2013 – now **Head of Cold atom lab at Jožef Stefan Institute.**
- 2009 – 2013 Research Fellow at Centre of Excellence EN-FIST, Ljubljana.
- 2008 – 2018 Research Fellow at Jožef Stefan Institute.
- 2006 – 2007 Postdoctoral Researcher at Max-Planck Institute for Chemical Physics of Solids, Dresden.
- 2004 – 2008 Postdoctoral Researcher at Jožef Stefan Institute.
- 2000 – now Teaching assistant at University of Ljubljana.
- 2000 – 2004 Young Researcher at Jožef Stefan Institute.

Research Projects:

- 2017 – 2020 Leader of a basic research project entitled “High-resolution optical magnetometry with cold cesium atoms”, ARRS, J2-8191.**
- 2017 – 2021 Slovenian coordinator (MC) and a member of working group “Quantum Physics and Society” in COST project “Quantum Technologies with Ultra-Cold Atoms”, EU COST, CA16221.**
- 2009 – 2012 Leader of a basic research project entitled “Superconductivity and magnetism in new iron-based superconductors”, ARRS, J1-2284.
- 2007 – 2008 Leader of a postdoc basic research project entitled “Complex metallic alloys - novel materials for the future”, ARRS, Z1-9333, 2007-2008.
- 2006 – 2007 Leader of the Humboldt research project entitled “Atomic ordering in complex intermetallic compounds”, Max-Planck Institute for Chemical Physics of Solids, Dresden, Germany.

Research interests:

- **Quantum physics with cold atoms** – own field of research, with my group we study Bose-Einstein condensation, cold molecules and matter-wave solitons.
- **Quantum technologies and metrology with atoms** – in the framework of ARRS project, which I lead, we are developing a high-resolution atom magnetometer for detection of static and radiofrequency magnetic fields.
- Metal-to-insulator transition in alkali-doped zeolites.
- Superconductivity and magnetism in Fe-based superconductors and fullerides.
- Industrial materials and novel materials including bitumen, nylon and clathrates.
- Physics of quasicrystals and complex metallic alloys.

Research methods:

- Cooling, trapping and manipulation of cesium atoms with laser light and electromagnetic fields.

- Fluorescence, absorption and non-destructive imaging of cold atoms, molecules and solitons.
- Optical magnetometry using Faraday rotation of polarized laser light.
- Nuclear magnetic resonance (NMR) and nuclear quadrupole resonance (NQR).
- High-pressure NMR experiments up to 2 GPa.

Awards:

- Humboldt Research Fellowship, 2007.
- Futurum Prize for the distinguished PhD thesis, 2007.
- International Pro Natura Research Prize, 2005.
- Prešeren Prize for the distinguished diploma work, 2001.
- Honourable Mention at XXVII International Physics Olympiad in Oslo, Norway, 1996.
- Various prizes on national competitions in physics and mathematics.

Organisation of scientific meetings and international schools:

- I am organizing Ultracool seminar, which covers the field of cold atoms and quantum technologies.
- Member of the Organizing Committee of European School "Complex Metallic Alloys" in the "Complex Metallic Alloys" Network of Excellence within the European 6th Framework Programme. The school took place in Slovenia in 2006, 2007, 2008, 2009 and 2010. The school had a high reputation in materials science community and attracted world class PhD students and scientists.
- Member of the Organizing Committee of the conference entitled "Magnetic Resonance in Highly Frustrated Magnetic Systems", HFMR 2010, February 1-4, 2010, Kranjska Gora, Slovenia.
- Member of the Organizing Committee of the conference entitled "NMR and EPR of Broad-Line Solids", Specialized Colloque AMPERE 2003, September 8-12, 2003, Portorož, Slovenia.

Ongoing Collaborations:

- Cold atoms and quantum technologies: research groups of Prof. Rudi Grimm (University of Innsbruck, Austria), Prof. Francesca Ferlaino (University of Innsbruck, Austria), Prof. Thorsten Schumm (Vienna University of Technology, Austria), Dr. Ticijana Ban (Institute of Physics, Zagreb, Croatia), Dr. Wolf von Klitzing (FORTH, Crete, Greece).
- Superconductivity and magnetism: research groups of Prof. Kosmas Prassides (Tohoku University, Sendai, Japan), Prof. Matthew Rosseinsky (University of Liverpool, UK), Prof. Arnold Guloy, (University of Houston, USA), Prof. Helge Rosner (Max Planck Institute CPfS, Dresden, Germany).
- Zeolites, complex metallic alloys, molecular solids: research groups of Dr. Mutsuo Igarashi (Gunma College, Japan), Prof. Takehito Nakano (Osaka University, Japan), Prof. Claudia Felser (Max Planck Institute CPfS, Dresden), Prof. Frank Haarmann (Aachen University, Germany).

Professional achievements:

- **Head of the Cold atom laboratory, currently working together with two senior researchers, one PhD, three master students and two undergraduate students.**
- **Mentor of one young researcher.**
- **Leader of 4 research projects.**
- **61 publications in international journals with impact factor: 1 Science, 1 Nature, 2 Science Advances, 3 Phys. Rev. Lett, 27 Physical Review B, 1 Physical Review A.**
- **1042 citations, h-index = 18 (source: Web of Science, 18. 04. 2019).**
- **1426 citations, h-index = 20 (source: Google Scholar, 18. 04. 2019).**
- **Co-mentor of three master and three diploma theses.**
- **10 invited lectures at the international conferences and institutes.**
- **8 conference proceedings and 87 contributions at the international conferences.**
- **7 popular science articles, 2 interviews, appearance in a TV show called "Sadovi znanja" and a radio show called "Podobe znanja".**
- **Slovenian coordinator (MC) for the COST project CA16221, responsible for social media and the website (atomqt.eu).**
- **A member of Slovene Quantum Technologies community (www.gutes.si).**
- **Organizer of Ultracool seminar (ultracool.ijs.si).**