

Contact information

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Education

- Master of science (physics), University of Jyväskylä, Finland 1988
- Doctorate degree (physics), University of Jyväskylä, Finland 1991

Professional history

- **2016 – 2020 Academy Professor (Academy of Finland)**
- **2017 – 2021 Visiting professor, Xiamen University, China**
- **2012 – 2017 Scientific Director of the Nanoscience Center in the University of Jyväskylä**
- **2007 – Professor in the University of Jyväskylä (Field: Computational Nanoscience, a joint position in Physics and Chemistry Departments)**
- 8/2003 – 12/2006: Senior researcher in the University of Jyväskylä
- 3/1998 – 7/2003: Research at Georgia Institute of Technology, Atlanta, USA (Academy Researcher and senior research scientist)
- 1998: Appointed as Academy Researcher by the Academy of Finland 1998
- 1997: Appointed as Docent by the University of Jyväskylä 1997
- 5/1987 – 10/1992 and 8/1994 – 2/1998: Teaching and research at the Department of Physics in the University of Jyväskylä, Finland (senior teaching assistant)
- 11/1992 – 8/1994: post doctoral fellow at Georgia Institute of Technology, Atlanta, USA

Research interests

Computational nanoscience, methods of electronic structure calculations of nanoparticles, nanostructures and solids. Electronic, optical, magnetic, chemical and catalytic properties of bare, supported, and ligand-protected metal nanoparticles, electrical conductivity of molecule-metal interfaces in nanostructures. Structural and chemical properties of metal nanoparticle / bionanoparticle (virus) hybrids.

Funding ID

Research funding from the Academy of Finland in 2003 - 2020 (total about 6.5 M€), infrastructure grants as part of the national FGI/FGCI consortium in 2011 - 2017 (total 730 k€), PI in two profiling actions for nanoscience in JYU (3 M€).

Recognitions & awards:

- Young Researcher Award, Emil Aaltonen Foundation, 1989-1991 (PhD thesis work)
- Academy Research Fellow by the Academy of Finland 1998-2003
- Science Prize in University of Jyväskylä 2011 (Nyyssönen Foundation)
- Rector's Recognition for publicizing scientific research, University of Jyväskylä 2012 & 2013
- Member of the Finnish Academy of Science and Letters since 2015
- The Orders of the White Rose of Finland, Knight First Class 2016
- Theodor Homen Physics Prize from the Finnish Society of Sciences and Letters 2018

Professional activity and service, positions of trust

- Editor, *Advances in Physics: X* 2017 – 2019
- Vice Dean of the Faculty of Mathematics and Science in the University of Jyväskylä, 8/2012 – 7/2013.
- Director of the National Graduate School on Nanosciences (NGS-NANO) 4/2012 – 12/2015
- Member of the Science Council of University of Jyväskylä 2015-2017
- Referee in the following scientific journals (currently about 50 review tasks per year)
Physical Review Letters, Physical Review A / B, Journal of Chemical Physics, Journal of Physical Chemistry, Journal of the American Chemical Society, ChemPhysChem, Chemical Physics Letters, European Physical Journal D, The New Journal of Physics, Journal of Physics: Condensed Matter, Angewandte Chemie, Chemistry – a European Journal, Physical Chemistry Chemical Physics, Inorganic Chemistry, Langmuir, Nature Chemistry, Nature Communications, Nanoscale
- Guest Editor of a *J. Phys. Chem. C* Special Issue on “Protected Metallic Clusters, Quantum Wells, and Metal-Nanocrystal Molecules” (9/2010)
- Guest Editor of a *J. Phys. Chem. C* Special Issue on “Metal Clusters, Nanoparticles, and the Physical Chemistry of Catalysis” (3/2021)
- Member of the Advisory Board for the *Journal of Physical Chemistry* 2011-2014
- Member of the Management Committee for the EU COST Action D-41: “Inorganic oxides: Surfaces and Interfaces” 2006-2010.
- Member of the organizing committee of the conference “International Symposium for Small Particles and Inorganic Clusters (ISSPIC-10)”, Atlanta, USA 2000
- Chair of the Organizing Committee for the conference “International Symposium for Small Particles and Inorganic Clusters (ISSPIC-18), in Jyväskylä August 2016.
- Member of the International Advisory Board of the ISSPIC conference series since 7/2012.
- Member of the organizing committee for the International Conference on Synthetic Metals, 2014 in Turku, Finland.
- Chair of the organizing committee for the international workshop “Electronic structure simulations of nanostructures (ESSN)”, June 18-21, 2004, Jyväskylä, Finland.
- Member of the organizing committee for the annual “Nanoscience Days”, University of Jyväskylä, Finland, since 2005
- Organizer of two editions of “International Symposium on Monolayer-Protected Clusters”, ISMPC08 in 9/2008, and ISMPC11, 6/2011, Jyväskylä Finland
- Member of the Scientific Steering Committee of the Nanoscience Center, University of Jyväskylä, 2005-2008, Chairman of the Steering Committee 1/2012 –
- Director of the International Jyväskylä Summer School 2007
- Member of the Expert Panel for reviewing funding proposals for the French National Research Agency (ANR)

- Reviewer of research proposals for the US Department of Energy (DOE) and ACS Petroleum Research Fund, Latvian Science Council, Swiss National Science Foundation, Netherlands Foundation for Fundamental Research on Matter (FOM), Natural Sciences and Engineering Research Council (NSERC) of Canada
- Reviewer of proposals for Grants for the European Research Council (ERC)
- Reviewer of proposals (computer grants) for the PRACE organization (Partnership for Advanced Computing in Europe)

Summary of publication data (http://users.jyu.fi/~hahakkin/hakkinen_publ_aka20.pdf)

- Close to 260 articles in peer-reviewed journals with several in high-impact journals: 16 in **Physical Review Letters**, 2 in **Science**, 2 in the **Proceedings of the National Academy of Sciences (US)**, 1 in **Nature Materials**, 3 in **Nature Chemistry**, 9 in **Nature Communications**, 1 in **Nano Letters**, 6 in **ACS Nano**, 14 in **Angewandte Chemie** and 27 in **Journal of the American Chemical Society**. Total number of citations is close to **23000** (81 per paper).
- **The h-index is 71 (WoS)**
- **Highly Cited Researcher 2018 (Clarivate Analytics)**
- 80 invited talks in international conferences (http://users.jyu.fi/~hahakkin/invited_talks)

Teaching experience (Univ. of Jyväskylä unless otherwise noted)

- 2003: Lecturer in the Winter School in Theoretical Chemistry “Quantum Chemistry Bordering Nanoscience and Nanotechnology”, University of Helsinki, Finland
- Since 2004, lecturer of several undergraduate and graduate courses in Materials Physics, Computational Materials Physics, and Numerical Methods in the Physics Department
- Since 2006, lecturer and coordinator of several computational nanoscience courses in the International Jyväskylä Summer School
- Since 2008, lecturer of undergraduate courses in Physical Chemistry in the Chemistry Department
- Since 2009, lecturer for “Fundamentals of Nanoscience”, Nanoscience Center
- 2010: Lecturer in the Spring College in Computational Nanoscience, Trieste, Italy

Supervised students and post docs (Univ. of Jyväskylä unless otherwise noted)

Jaakko Akola (physics), MSc 1998, PhD 2000

Anniina Rytönen (physics), PhD 1998

Erik Viitala (physics), PhD 2000

Bokwon Yoon (physics), post doc 1999 – 2003, Georgia Tech, Atlanta

Michael Moseler (physics), post doc 1999 – 2001, Georgia Tech, Atlanta

Kirsi Manninen (physics), PhD 2004

Timo Santa-Nokki (physics), MSc 2004

Michael Walter (physics), post doc 2003 – 2008

Pekka Koskinen (physics), post doc 2004 – 2005

Karoliina Honkala (chemistry), post doc 2005 -2006

Katarzyna Kacprzak (physics), PhD 2006 - 2010

Jaakko Akola (physics), post doc 2005 - 2006

Sami Malola (physics), MSc 2005 , PhD 2009, post doc 2011 -
Peter Mikula (physics), MSc 2005
Olga Lopez Acevedo (physics), post doc 2006 - 2011
Daniela Koudela (physics), post doc 2006 – 2008
Pentti Frondelius (physics), PhD 2009
Jarmo Lähdevaara (physics), MSc 2007
Lauri Nykänen (chemistry), MSc 2008
Ville Mäkinen (physics), MSc 2008, PhD 2013
Mikkel Strange (physics), post doc 2009 – 2010
P. Andre Clayborne (chemistry), post doc 2010 – 2012
Xi Chen (chemistry), post doc 2011 – 2015
Janne Nevalaita (physics), MSc 2011, PhD student 2012 – 2016
Lauri Lehtovaara (chemistry), post doc 2012 – 2013
Lars Gell (chemistry), PhD student 2012 – 2016
Kirsi Salorinne (chemistry), post doc 2011 – 2015
Jenni Andersin (chemistry), post doc 2012
Kaisa Aho (physics), MSc 2013
Kirill Pervushyn (physics), MSc 2013
Janne Kekäläinen (physics), MSc 2013
Teemu Parviainen (physics), PhD student 2013 – 2015
Marie Stark (molecular biology) PhD student 2014 – 2017
Emmi Pohjolainen (physics) PhD student 2014 – 2019
Sami Kaappa (physics) PhD student 2015 – 2019
Tiia-Riikka Tero (chemistry), post doc 2015 – 2017
Mikhail Kuklin (physics), post doc 2016 – 2017
Rosalba Juarez Mosqueda (physics), post doc 2016 – 2017
Elli Selenius (physics), MSc 2016, PhD student 2016 –
Elena Kuisma (physics), post doc 2016 – 2017
Saara Lautala (physics), MSc 2017
Antti Pihlajamäki (physics), PhD student 2018 –
Juanzhu Yuan (chemistry, PhD Xiamen University) 2015 – 2018
Qin Zhou (chemistry, PhD Xiamen University) 2015 – 2018
Sailee Shroff (molecular biology), PhD student 2018 –
Nisha Mammen (physics), post doc 2018 -
Maryam Sabooni (chemistry), PhD student 2019 –
Omar Lopez Estrada (physics), post doc 2019 –
Maria Francisca Matus Cortes (physics), post doc 2019 –
Kyunglim Pyo (chemistry) post doc 2020 –
Juha Tiihonen (physics) post doc 2021 –
Noora Hyttinen (chemistry) post doc 2021 –

Participation in PhD thesis advisory committees: Niko Säkkinen (physics), Satu Mustalahti (chemistry), Mari Martikainen (molecular biology), Sanna Niinivehmas (molecular biology), Jaakko Koivisto (chemistry), Marie Stark (molecular biology), Karolina Sokolowska (chemistry), Ville Saarnio (chemistry). Johanna Alaranta (chemistry)