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Personal information

Born: August 19, 1961, in Luleå, Sweden. Male, Swedish citizen
Family: Married to Anna Almqvist (Exhibitions Manager, Teknikens hus, Luleå), two grown up sons.

Military service

1982 – 1983: Swedish Airforce at Regiment F21, Luleå, Sweden.

Short description of scientific work

The common theme in my research has mainly been applications and partly development of scanning probe microscopy (SPM) techniques, such as the atomic force microscope (AFM) for multi-disciplinary research. The research has included studies within surface physics, surface characterization, biophysics, material science, nanotechnology, plasma physics, local electrical properties of nanowire-based all-oxide solar cells.

Positions previous and present (min 6 month)

June 1984 – Jan 1985: Södertälje kommun, Sweden: Engineering in water system planning and municipal eng.: engineer, investigations, projecting, planning and computer work.
Jan 1985 – Jun 1985: Rönninge primary school (Bergaskolan), Rönninge, Sweden: Teacher in physics, chemistry, mathematics and biology.
Oct 1988 – Sep 1990: Forsmark nuclear power plant, Sweden: Reactor physicist (trainee), occasionally 1991 – 1993)
Sep 1990 – Nov 1995: PhD student at the Division of Physics, LTU (Principal and, in practice, associate supervisors: Prof. Sverker Fredriksson and Dr Marek Rubel)
Nov 1995 – Nov 1996: Acting lecturer ("vik lektor") and student advisor at the Division of Physics, LTU
Nov 1996 – Nov 1998: Postdoctoral stipendiate (TFR-96-63, TFR-97-993) for research at University of California, Santa Barbara, USA (Hansmalab and Neuroscience Research Institute)
Oct 1996 – Mars 2013: Senior lecturer in Physics at the Division of Physics, LTU
Mar 2013 – Dec 2017: Associate professor in Experimental physics at the Division of Materials Science, LTU
Jan 2018 – present: Professor in Experimental physics at the Division of Materials Science, LTU

Academic degrees and education

1977 - 1980 High School Diploma ("studentexamen") at Midskogsskolan, Luleå, Sweden.
1982 - 1983 University Mathematics, Umeå University, Sweden.
1980 - 1984 Three years of studying Master of Science ("civilingenjör") in Environmental Planning and Design ("Samhällsbyggnadsteknik"), the Luleå University of Technology (LTU), Sweden..
1985 - 1988 Master of Science ("civilingenjör") at the School of Engineering Physics, the Royal Institute of Technology (RIT/KTH), Stockholm, Sweden.
May 1994 Licentiate in Physics at LTU.
Feb 1996 [Doctor of Science in Physics](#) at the Luleå University of Technology, Sweden.
Oct 2002 Associate professor ("Docent") in Physics at the Luleå University of Technology, Sweden.

Publications

- See Diva (publikationsdatabasen), h-index: 11 (Scopus September 2017)
- Citations: 848 (Scopus September 2017)

Supervision

Current supervision/Postdocs:

- Pedram Ghamgosar, PhD student, Assistant/deputy supervisor (Principal supervisor is Alberto Vomiero), [Licentiate in Oct 2017](#)
- Federica Rigoni, Postdoc, Main project applicant (co-applicant: Alberto Vomiero)

Previous PhD students: - Illia Dobryden, [PhD 2014](#), Principal supervisor (Assistant/deputy supervisor: Hans Weber).

- Anders Mannelquist, [PhD 2001](#), Assistant/deputy supervisor (partly with principal advisor duties, principal supervisor: Sverker Fredriksson).
- Andrei Filippov, Licentiate 2010, Assistant/deputy supervisor to licentiate, mainly AFM part (Principal supervisor: Oleg Antzutkin).
- Assistant/deputy supervisor, with little or no involvement in the research and/or only part of their studies, to four more students.

Master thesis: -Supervised a number (a few examples: [1](#), [2](#), [3](#), [4](#))

Granted funding

Research council funding

- 1996 - 1998 - Swedish Research Council for Engineering Sciences (TFR-96-63, TFR-97-993), Postdoctoral scholarship for 2 years at UCSB, Santa Barbara, USA
- 1999 – 2000 - Research grant from the Swedish Research Council for Engineering Sciences (TFR-98-215, *Development and application of scanning probe microscopy for biophysical studies*)
- 2002 – 2003 - Research grant from the Swedish Research Council (621-2001-2585, *Scanning probe microscopy: Applications in biophysics and development of a new optical near-field microscope*)

Other funding

- 1994 - Grant for travel expenses (Kempestiftelserna), 1994
- 1995 - Grant for travel expenses (Wallenbergs stiftelse), 1995
- 2000 - Grant for equipment (LKAB stiftelse), 2000
- 2000 - Support from the institution (TFMM) for expenses related to space material research
- 2005 - Grant from the Kempe foundations, equipment (main applicant, 2 MSEK for a new scanning probe microscope)
- 2010 – 2011 - Grant from Hjalmar Lundbohm Research Centre (HLRC) for a pre-study " Interaktion mellan ytmodifierade magnetitpartiklar"
- 2015-2017 - Strategic grant/program from LTU (LTU/Department of TVM/ Exp. Phys.) for competence development to full Professor, "Strategisk satsning 3.3.1 kompetensutveckling till Professor"
- 2016 -2017 - Grant from Carl Tryggers Stiftelse (CTS 16:13) for a postdoctoral scholar, *Synthesis and characterization of oxide nanowires for new high-efficiency solar cells*, Co-applicant was Alberto Vomiero
- 1996-2017 - Co-applicant to a handful more granted applications
- 2018 - Co-applicant to Grant from the Kempe foundation/"Labbfonden": Uppgradering av experimentell infrastruktur på TVM (SMK-1734, Re LTU 74-18). (especially part on upgrade of AFM lab, main applicant: Pär Marklund).

Commission of trusts, member of boards, committees:

- 1999 – 2000 - Member of the board of the Department of Mechanical Engineering (ledamot i institutionsstyrelse), LTU
- 2002 – 2003 - Initiator and organizer of the annual "Scientific day", TFMM, LTU, 2002-2003
- April 2002 - Member of the examination board for the dissertation in Surface biotechnology of Magnus Bergkvist, Uppsala, Sweden
- Oct 2003 - Member of the examination board for the dissertation in Surface biotechnology of Elisabeth Pavlovic, Centre for Surface Biotechnology, Uppsala, Sweden
- Dec 2009 - Member of the committee for the dissertation of Payman Roonasi, Department of Chemical engineering and geosciences, LTU
- Mar 2017 - Member of the committee for the dissertation of Hui Huang, Division of Surface and Corrosion Science, School of Chemical Science and Engineering, KTH Royal Institute of Technology, Stockholm
- June 2018 - Member of the committee for the dissertation of Chuantao Zhu, Department of Materials and Environmental Chemistry, Stockholm University, Stockholm, June 8, 2018.
 - Previously liason officer, NEA Data Bank.
 - Responsible for the nuclear sources of radiation at TVM/Physics, LTU
 - President "Porsöbergets parksamfällighetsförening". 2003-2005
- May 2011 - Convener of the recruitment team for a Chaired Professor in Applied Physics, LTU

Academic Awards

- 1991 - The Nobel Foundation, Lindau stipendiate, physics meeting 1991.

Active participation in national and international conferences

- Several travels to conferences, other institutes and meetings and presentations, invited speaker and/or chair/local board occasionally.

Refereeing, Peer-review assignments for journals

J. Nucl. Mater., J. Mater. Res., Physica scripta, Thin solid films, Journal of Nanoscience and Nanotechnology, Journal of Materials Research, (Biophysical J.), Journal of Nanoscience and Nanotechnology, Langmuir, Protein Science, Nanomedicine, Nanoscience and Nanotechnology Letters, Sensors & Actuators: A. Physical, Beilstein Journal of Nanotechnology, ACS Nano.

Teaching, lecturing and examiner in physics courses at LTU

About 6000 lecturing hours in different courses:

Statics (1990-1993), Mechanics (1995-1997, 1999), Material physics (1991-1992, Lab. responsible), Modern physics (1993-1996, Lab responsible), Mechanics II (2000--, examiner 2007 – and still), Mechanics, Thermodynamics (1998-2000), Physics A (2002-2007, Examiner), Physics B (2000-2003, Examiner), Waves and Thermodynamics (1999-2001), Electricity (2000-2002), Experimental methods (1995-1997, 2000-2002), Nuclear Engineering (reactor physics, 2002), Physics 1 (2002- , Responsible for the part “experimental methods, 2002-, Examiner 2006—2017), Physics 2 (2003-2004), Physics 3 (2002-2012), Supervising in applied quantum mechanics (2002). Project course in Physics (2002, Examiner 2011), Biophysics (2005-2006, examiner 2005-2006, 2010), Nanomaterials (2009--), Material Science & Engineering, project course (2009-2010), Fuels (2012—and still), Advanced materials characterization (2016-- , AFM part). Advanced Course on Topics in Material- and Experimental physics (project 2017), Mechanics II Ry (2018-- , examiner). Examiner for many supplementary courses in physics.

Contributions to the organizational teaching development

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|----------------|--|
| 2008 – 2010 | - "AO1 responsible" (AO1-ansvarig) on 30% duties or more than 50 courses |
| 2010 | - Member of the LTU group to develop a new course evaluation survey (EvaSys-LTU Mall). |
| 2011 – Present | - "Utbildningsledare för kurser i fysik" (≈ Director of studies in physics courses) 50% duties 2011- 2015; 10% duties 2015 – 2017, 35% duties 2017 - |
| 2014 – 2015 | - Member of the LTU group to evaluate and propose a new learning management system (LMS) for LTU |

Development work and research in education

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|-------------------|---|
| 2005 | - Project manager and responsible for the development of Internet-based supplement university courses in physics and technology (Preparatory Programme in Technology), “Distansanpassning av basårets kurser” |
| - | - Initiated and was responsible, in cooperation with others, for the development of a new course in Biophysics. |
| - | - Developed the part reactor physics in the course Reactor technology. |
| 2001 | - Active teacher in the pilot project "Improved Learning of Basic Mechanics by Student-Active Teaching methods", LTU |
| | - Attended the startup of “SI-handledare” at LTU. |
| 2010 – 2011, 2014 | -Member of the working group that produced a new model for course evaluation (“Ny kursvärderingsmodell”) and a new questionnaire, A new course management system |
| 2012 – 2013 | -Active and received internal funds (course Physics 1) for the project to improve the student learning during their first year, “Genomströmningsprojektet” . |
| 2009 – 2010 | - Active in designing, and responsible for the moving to, the new student laboratory in physics. |

Languages

Swedish, English (fluent), German (fair)