

Swedish citizen, born in Kalmar

Civil status: Married, two children

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### Employment:

- Professor, Applied Physics, Division of Materials Science, Department of Engineering Science and Mathematics, **Luleå University of Technology**, March 2015 – present
- Senior Lecturer, Applied Physics, Division of Materials Science, Department of Engineering Science and Mathematics, **Luleå University of Technology**, October 2014 – March 2015
- Assistant Professor, Department of Chemistry and Molecular Biology, **University of Gothenburg**, June 2007 – August 2014
- Postdoctoral Fellow, Reaction Dynamics, **Prof. Rex Skodje**, Department of Chemistry and Biochemistry, **University of Colorado at Boulder** and Institute of Atomic and Molecular Sciences, **Academia Sinica, Taipei, Taiwan**, April 2003 – May 2007
- Instructor, Department of Physics, **University of Colorado at Boulder**, August 2006 – May 2007
- Postdoctoral Fellow, Collision-induced Spectroscopy, **Prof. Lothar Frommhold**, Department of Physics, **University of Texas at Austin**, June 2002 – March 2003
- Physics instructor, **Austin Community College**, May 2002 – August 2002

### Degrees:

- Docent, Physical Chemistry, University of Gothenburg, August 2010
- Ph.D., Physics, University of Texas at Austin, May 2002
- M.Sc., Physics, Lund University, Sweden, June 1997

### Grants:

- Kempe Foundation, 600 000 SEK (2017–2019), 600 000 SEK (2020–2022), and 600 000 SEK (2021–2023)
- Graduate School of Space Technology, 800 000 SEK (2015–2019)
- Swedish Research Council, project + salary (anställning som forskarassistent), 432 000 + 3 180 000 SEK (2007–2013)
- European network ASTRONET, 2.64 million SEK (2009–2011), co-applicant with Gunnar Nyman

**Research interests:**

Theoretical atomic molecular and optical physics. Quantum and classical descriptions of molecular collisions and interactions with electromagnetic radiation. Focus on astro-applications: molecule formation in the interstellar medium and radiation transfer in planetary and stellar atmospheres.

**Publications:**

See <http://www.ltu.se/staff/m/maggus-1.121620?l=en>  
or <http://www.researcherid.com/rid/A-1661-2010>

**Research supervision:**

- PhD student: Wissam Fakhardji, September 2015 – February 2021, “Classical molecular dynamics simulations of collision-induced absorption: method development and evaluation”, Faculty Opponent: Dr. Jean-Michel Hartmann, CNRS, France.
- PhD student: Sergey V. Antipov, September 2008 – March 2013, “On the Formation of Small Molecules by Radiative Association”, Faculty Opponent: Professor David E. Manolopoulos, University of Oxford, UK.
- PhD student: Daria Burdakova, May 2016 – present (main supervisor: Prof. Gunnar Nyman)
- Postdoc: Martina Šimsová, née Zámečnicková, March 2021 – February 2023
- Postdoc: Daniel Šimsa, March 2020 – February 2022
- Postdoc: Péter Szabó, March 2017 – February 2019
- Postdoc: Gerd Schiffel, June 2011 – November 2011, (with Prof. Gunnar Nyman)
- Postdoc: Jan Franz, June 2009 – May 2011, (with Prof. Gunnar Nyman)
- Pre-doctoral: Johan Carlstedt, 2019; Kathir Kanagarajan, 2016–2017; Jonatan Öström, 2014–2015; Karl-Mikael Svensson, 2013–2014; Manuel Monge Palacios, 2013; Nikolay Golubev, 2012 and 2013; Benjamin Riguelle, 2012; Kristin Axelson, 2011; Tobias Sjölander, 2008; Huaqing Li, 2008; Qinqin Lü, 2007

**Teaching experience:**

- Instructor, Department of Engineering Science and Mathematics, Luleå University of Technology, Sweden
  - 2020–present: Quantum physics; about 20 lecture hours per year, overall course responsibility
  - 2017–present: EM field theory section of *Electrical Engineering and Electromagnetic Field Theory* (for future high school teachers); about 16 lecture hours per year, overall course responsibility

- 2014–present: Physics 1, mechanics and thermodynamics; about 140 lecture, lesson, and lab hours per year, overall course responsibility
- 2015–present: Physics 3, mechanics, relativity, and nuclear physics; about 60 lecture, lesson, and lab hours per year
- Guest Lecturer, Luleå University of Technology, Sweden
  - March 2016: Competence development day for high school teachers
  - April 2016: Pedagogy in 45 minutes (for university teachers)
- Instructor, Department of Chemistry, University of Gothenburg, Sweden
  - Fall semesters 2007–2013: Spectroscopy, statistical mechanics, and kinetics sections of *Physical Chemistry*, KEM 040, 2<sup>nd</sup> year undergraduate level, 28 lecture hours, (overall course responsibility from the fall of 2009)
  - Fall 2008 and 2011: Optics section of *Classical Mechanics, Optics, and Molecular Quantum Mechanics*, graduate level, 12 lecture hours, overall course responsibility
  - Spring 2014: Classical mechanics section of *Classical Mechanics, Optics, and Molecular Quantum Mechanics*, graduate level, 20 lecture hours
  - Spring 2010–spring 2014: Guest lecturer at the unit for Pedagogical Development and Interactive Learning (PIL), *Teaching and Learning in Higher Education 2: Science*, HPE 102, 2 lecture hours per semester
  - Fall 2009: PhD level reading course in *Advanced quantum dynamics*
- Instructor, Department of Physics, University of Colorado, USA
  - Fall 2006: *Optics*, PHYS 4510, 4<sup>th</sup> year undergraduate level, 42 lecture hours, overall course responsibility
  - Spring 2007: *Physics II*, PHYS 1120, 1<sup>st</sup> year undergraduate level, 45 lecture hours, overall course responsibility
- Instructor, Austin Community College, USA
  - Summer 2002: *Engineering Physics II*, PHYS 2426, 1<sup>st</sup> year undergraduate level, 45 lecture hours, 22 lab hours, overall course responsibility
- Teaching assistant (grading and tutorials), Department of Astronomy, University of Texas at Austin, USA, Fall 1997 and Spring 1998

**Scientific committees:**

- International Conference on Spectral Line Shapes, June 2008 – present
- Local organizing committee of the 20<sup>th</sup> European Conference on Dynamics of Molecular Systems (MOLEC), Gothenburg, Sweden, August 2014

- Management Committee of COST Action, CM1405, Molecules in motion (MOLIM), March 2015 – April 2019

**Journal reviews:**

- Chemical Physics
- Chemical Physics Letters
- Indian Journal of Physics
- Journal of Atomic, Molecular, and Optical Physics
- Journal of Chemical Physics
- Journal of Computational Methods in Science and Engineering
- Journal of Physical Chemistry
- Journal of Quantitative Spectroscopy and Radiative Transfer
- Journal of Raman Spectroscopy
- Monthly Notices of the Royal Astronomical Society
- Nature Chemistry
- Physical Review A

**Textbook reviews:**

- C.A. Bennett: Physical Optics
- P. Atkins & J. de Paula: Physical Chemistry 9<sup>th</sup> edition

**PhD defense committees:**

- Boy Lankhaar, Chalmers University of Technology, February 23<sup>rd</sup>, 2021
- Tijs Karman, Radboud University Nijmegen, April 6<sup>th</sup>, 2018
- Francesco Costagliola, Chalmers University of Technology, June 8<sup>th</sup>, 2012
- Michael Stenrup, Stockholm University, March 9<sup>th</sup>, 2012
- Stand-in member: Álvaro Soria Salinas, 2020; Johan Rohlén, 2014; Per Bjerke, 2012; Mauritz Ryding, 2011; Erik Abrahamsson, 2008
- International Doctorate manuscript review: Manuel Monge Palacios, University of Extremadura, Spain, 2013

**Departmental service:**

- Assistant coordinator of the Graduate School of Space Technology, Luleå University of Technology, November 2015 – December 2019
- Coordinating an interactive teaching effort with clickers at University of Gothenburg, August 2009 – August 2014
- Organizer of a weekly seminar series at University of Gothenburg, August 2009 – December 2010