Curriculum vitae

Name: Rahm, Martin **Date of birth:** 1982-11-11 **Nationality:** Swedish
Researcher identifier(s): Google Scholar, ORCID: 0000-0001-7645-5923
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I am a theoretical chemist with experience in condensed matter physics as well as experimental research, with a history of notable achievements, including predictions and syntheses of the world's largest nitrogen oxide, the world's most energetic compound, and predictions of the first stable ternary gold hydride. As a team leader, I focus on developing theories and methods to enhance the prediction of material properties, reactivity, and chemical structures, with a particular interest in high-pressure materials science. My team has achieved several notable milestones, including revising the properties of the atoms under pressure, and conducting Sweden's first quantum computation of chemistry. My academic contributions include co-authoring 70 peer-reviewed articles (Google Scholar citations: 2760, h-index: 27) and four book chapters.

EDUCATION

2011 **PhD Physical Chemistry**
Department of Chemistry, Royal Institute of Technology (KTH), Sweden
PhD Supervisors: Tore Brinck and Eva Malmström

2006 **MSc in Chemistry and Chemical Engineering**
Department of Chemistry, Royal Institute of Technology (KTH), Sweden

CURRENT POSITION

2021 – **Associate Professor in Theoretical Chemistry**
Department of Chemistry and Chemical Engineering
Chalmers University of Technology, Sweden

PREVIOUS POSITIONS

2017 – 2021 **Assistant Professor**
Department of Chemistry and Chemical Engineering
Chalmers University of Technology, Sweden

2014 – 2017 **Postdoctoral Researcher** (Theoretical Chemistry and Condensed Matter Physics)
Department of Chemistry and Chemical Biology, Cornell University, United States.
Advisors: Roald Hoffmann and Neil W. Ashcroft

2011 – 2014 **Postdoctoral Researcher** (Modelling and Synthesis of High-Energy-Density Materials)
Department of Chemistry, University of Southern California, United States.
Advisor: Karl O. Christe

FELLOWSHIPS AND AWARDS (Selection)

2019 Award for best oral presentation (under 40 years of age),
19th European Symposium on Fluorine Chemistry

2013 The Arthur Adamson Postdoctoral Recognition Award
(for scholarly excellence and innovative postdoctoral research),
University of Southern California, Department of Chemistry, United States

2013 The Dr. Bernard E. Douda Young Scientist Award (For the synthesis of $NCNO_2$), International Pyrotechnics Society

2013 Selected for the 63rd Lindau Nobel Laureate Meeting (Chemistry), Fellow of the Jörnvall Foundation.

2013 – 2014 Postdoctoral Scholarship (For research in the United States),
Sweden – America Foundation, Stockholm, Sweden.

2012 – 2013 Postdoctoral Scholarship (For research in the United States)
Swedish Research Council (VR), Stockholm, Sweden.

2004 – 2010 Travel Awards from AstraZeneca (2009), the Erasmus program (2004), KTH School of Chemistry (2010), Styffes foundation (2009) and the Nobel foundation (2010).

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2017 – present Supervision of 8 post-docs at Chalmers University of Technology
2017 – present Supervision of 5 PhD students: four at Chalmers University of Technology, one at Gothenburg University (two were co-supervised)
2009 – present Supervision of 7 MSc students: six at Chalmers University of Technology, one (informally) at the Royal Institute of Technology (KTH), Sweden

I am currently the main supervisor of 2 postdocs, 2 PhD students, and one MSc student.

TEACHING EXPERIENCE

2017 – present Supervision of 27 undergraduate students, including several visiting scientists.
2017 – present Lecturer and course examiner – Theoretical Chemistry (BSc & MSc level), Chalmers, Sweden
2017 – present Lecturer – Quantum Engineering (MSc level), Chalmers University of Technology, Sweden
2016 Lecturer and laboratory teacher (one instance each) – Advanced Inorganic Chemistry (MSc level), Cornell University, United States.
2006 – 2010 Laboratory teacher – Molecular Structure (BSc level), Royal Institute of Technology (KTH).
2006 – 2010 Laboratory teacher – Quantum Chemistry (MSc level), Royal Institute of Technology (KTH).
2017 – 2019 Courses in pedagogy resulting in a Diploma of Higher Education (15 ECTS)
10 days of leadership development training for Assistant Professors.

INVITED LECTURES (Selection)

2023: University of Illinois Chicago, 62nd Sanibel Symposium (St. Augustine, plenary), University Laval, Cornell University, NATO 52nd AVT business meeting (Båstad), New Energetics Workshop (Kista), Quantum Life Science Centre / Karolinska Institute (Stockholm).
2022: University of Aarhus, 7th International Conference on Chemical Bonding (Kauai), 3rd European Symposium on Chemical Bonding (Amsterdam), NASA Jet Propulsion Laboratory (Pasadena), VBU (Brussel, online), University of Marburg, University of Southern California (Los Angeles).
2021: University of Toronto (online), Skolkovo Institute of Science and Technology (online), Second Discussion Meeting on Quantum Crystallography (online CECAM workshop), E-MRS (online).
2020: University of Illinois at Chicago (CDAC – A centre of Excellence for High Pressure Science and Technology, online)

INSTITUTIONAL RESPONSIBILITIES AND COMMISIONS OF TRUST

2024 – Steering board member of Chalmers Area of Advance Nano
2021 – Permanently hired faculty member, Chalmers Department of Chemistry and Chemical Engineering.
2018 – PhD thesis examiner (Linköping 2024, University of Western Australia 2021, University of Milan 2018)
2018 – Chairman of the committee of PhD defense (1), Member of Grading Committee of PhD defense (3), Licentiate thesis examiner (3). Main organizer (shared) of the Division's yearly 2-day conference, Sweden (2018). Shared organizer of the Molecular Frontiers Symposium (2024)

REVIEWING ACTIVITIES

2014 – Reviewer of over 150 articles, in (among others): Angewandte Chemie (top 10% reviewer 2021), PNAS, J. Am. Chem. Soc., Chem. Sci, Nat. Commun. (ca 20 per year). Evaluator for the National Research and Development Agency of Chile and the National Science Centre of Poland (2023).

ACTIVE COLLABORATIONS

Morgan Cable, Michael Malaska and Robert Hodyss (NASA-JPL), Per Hyldgaard, Jonas Bylander (Chalmers), Karl Börjesson (Gothenburg University), Fang Wang (U. Rhode Island), Anders Broo (Astra Zeneca), Ivano Tavernelli (IBM), Bo Chen (DIPC)

For full list of publications, see www.rahmlab.com/publications