

## Curriculum Vitae Henrik Grönbeck

### Henrik Grönbeck

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### Personal Data

Born Jan 26, 1966 in Halmstad, Sweden  
Citizen of Sweden  
Fluent in Swedish, English and German

### Education

Dec 2005 Docent in chemical physics at Chalmers University of Technology  
Dec 1996 Doctors degree of philosophy in Physics, Göteborg University  
June 1994 Licentiate of philosophy degree in physics, Göteborg University  
1991-1996 Graduate student of physics, Göteborg University  
Sept 1991 Master of science in physics from Göteborg University  
1990-1991 Undergraduate student of physics, Freie Universität Berlin  
1988-1991 Undergraduate student of physics and mathematics, Göteborg University  
1986-1987 Undergraduate student of physics and mathematics, Lund University  
1985-1986 Undergraduate student of history of ideas and science, Göteborg University  
June 1985 Senior high school exam, Kattégattskolan, Halmstad

### Employment summary

November 2016 - Full Professor, Department of Physics, Chalmers  
July 2012 – October 2016 Professor, Department of Applied Physics, Chalmers  
March 2009 – June 2012 Associate Professor, Department of Applied Physics, Chalmers  
Jan 2006 – Feb 2009 Researcher, Department of Applied Physics, Chalmers  
Oct 2001 - Dec 2005 Assistant Professor, Department of Applied Physics, Chalmers  
Sept 1999 - Oct 2001 Radar System Engineer, Ericsson Microwave Systems AB  
Mar 1999 - Aug 1999 Post-doc, Department of Physics, Göteborg University  
Sept 1997 - Feb 1999 Post-doc, IBM Research Division (NFR/STINT program)  
Dec 1996 - Aug 1997 Researcher, Department of Physics, Göteborg University  
Sept 1991 - Dec 1996 Research assistant, Department of Physics, Göteborg University  
Sept 1987 - Jul 1988 Nurse's assistant, Vasa Sjukhus, Göteborg  
Aug 1985 - June 1986 Civil Service, Bagaregårdsskolan, Göteborg

### Teaching (Lecturer)

Catalytic Emission Control (2003-2013, biannual) – Chalmers (PhD)  
Modern Catalysis (2015-2019, biannual) – Chalmers (PhD)  
FFY570 Clusters, fullerenes and nanotubes (2003 and 2004) – GU (undergraduate)  
KTK011 Catalysis (2003-2014) – Chalmers (undergraduate)  
Micro-kinetic Modeling (2005-2014, biannual) – Chalmers (PhD)  
FYP040 Chemical Physics (2006 and 2007) – GU (undergraduate)  
FKA121/FIM540 Computational Physics A (2006-2009) – Chalmers (undergraduate)  
TIF035 Computational Physics B (2009-2011) – Chalmers (undergraduate)  
TIF100 Applied Quantum Physics (2010-2019) – Chalmers (undergraduate)

### Teaching (Examiner)

Catalytic Emission Control (2007, 2009)

TIF035 Computational Materials Physics (2009-2011) – Chalmers (undergraduate)

TIF100 Applied Quantum Physics (2010-2019) – Chalmers (undergraduate)

### Teaching (Assistant)

I have supervised various laboratory and computer exercises in Quantum mechanics, Optics, Mechanics, Electromagnetism and Thermodynamics.

### Research

I work within computational physics and chemistry. The applied techniques range from electronic structure methods within the Density Functional Theory to parameterized Hamiltonians and microkinetic modeling to study materials and surface phenomena. The research is focused on nano- and surface science with main applications to heterogeneous catalysis. Current focus areas are *ab initio*-based reaction kinetics and theoretical X-ray spectroscopy.

### Publications

I have published more than 180 scientific papers. I have according to Web of Science 6500 citations and an h-index of 39. The corresponding values in Google Scholar are 8100 and 45, respectively. I have about 100 (invited and contributed) talks and seminars together with numerous poster presentations.

### Funding

1997-1999	Post-doctor grant (with repatriation) from NFR/STINT
2002-	Swedish Energy Agency via Competence Centre for Catalysis
2006-2020	Research grants from VR (except 2016)
2006-2010	Travel grants from COST action D41
2009-2012	Research grant from SSF (FUNCAT)
2010-2012	Research grant from FORMAS
2011-2014	Research grant from NordForsk (NORDCAT)
2012-2015	Research grant from VR (Röntgen-Ångström)
2013-2016	Research grant from VR (Röntgen-Ångström)
2016-2018	Research grant from VR (Röntgen Ångström)
2012-2015	Travel grants from COST action CM1104
2012-2019	Chalmers AoA Transport, Materials, Nano
2016-2021	Research grant from KAW
2019-2022	Research grant from Swedish Energy Agency (FFI)
2019-2021	Research grant from FORMAS
2015	Conference grants from Psi-k and CECAM (Main applicant)
1997-1999	CPU time at PDC, KTH
2002-2019	CPU time from SNAC (Large-project since 2011)

## **Pedagogical education and supervision**

Autumn 2011 Diploma of Higher Education  
Autumn 2011 Ethics and Science, Chalmers  
Summer 2011 Pedagogiskt project, Chalmers  
Spring 2010 Handledarforum Chalmers  
Spring 2005 Textual supervision at CKK, Chalmers  
Autumn 2004 Teaching, Learning and Evaluation at CKK, Chalmers  
Autumn 2002 Projektledning för Akademiker (PAK) at Chalmers

### *Supervision of PhD students*

Jan Westergren	Co-supervisor 1996-1997 PhD at Department of Physics, Oct. 2001
Mikaela Wallin	Co-supervisor 2004-2005 PhD at Department of Appl. Surf. Chem., Feb. 2005
Peter Broqvist	Main supervisor PhD at Department of Applied Physics, March 2005
Elin Becker	Co-supervisor PhD at Department of Appl. Surf. Chem., April 2010
Björn Wickman	Main supervisor PhD at Department of Physics, Oct. 2010
Lisa Kylhammar	Co-supervisor PhD at Department of Appl. Surf. Chem., June 2011
Simon Klacar	Main supervisor PhD at Department of Applied Physics, June 2013
Kristina Wettergren	Main Supervisor PhD at Department of Applied Physics, September 2014
Adriana Trincherro	Main supervisor PhD at Department of Applied Physics, June 2015
Pooya Tabib Zadeh Adibi	Main supervisor 2011 – 2014 PhD at Department of Applied Physics, March 2016
Anna Clemens	Co-supervisor and Examiner PhD at Department of Applied Physics, December 2015
Johan Nilsson	Co-supervisor PhD at Department of Appl. Surf. Chem., December 2017
Maxime Van den Bossche	Main supervisor PhD at Department of Physics, March 2017
Svetlana Syrenova	Examiner PhD at Department of Physics, September 2017
Ferry Nugroho	Examiner PhD at Department of Physics, May 2018
Mikkel Jorgensen	Main supervisor PhD at Department of Physics, March 2019
Adam Arvidsson	Co-supervisor and examiner PhD at Department of Physics, May 2019
Lin Chen	Main supervisor 2015 -
Mikael Valter	Co-supervisor and examiner 2015 –
Sara Nilsson	Examiner 2016 -
David Albinsson	Examiner 2016 -

Alvaro Posada-Borbon	Main supervisor 2016 –
Iwan Darmadi	Examiner 2017 –
Noemi Bosio	Main supervisor 2018 –
Yingxin Feng	Main supervisor 2019 -

*Supervision of Post-docs*

Anders Hellman	2006 – 2008
Gustav Karlberg	2007 – 2008
Lauro Oliver Paz-Borbon	2011– 2013
Jakub Baran (co-supervisor)	2011– 2013
Samira Siahrostami	2013
Christopher Heard	2014 – 2016
Matthias Vandichel	2016 – 2018
Michael Busch	2016 – 2018

*Supervision of Master students*

Since I started as assistant professor at Chalmers I have supervised (and examined) ten master-thesis projects:

Andreas Gavrin (2007)  
Christoffer Källerman (2007)  
Sebastian Skoog (2009)  
Eduardo Martini Rodrigues da Silva (2010)  
Keisuke Takahashi (2011)  
Hans Lämås (2012)  
Håkan Carlsson (2013)  
Viktor Nilsson (2013)  
Brita Abrahamsson (2015)  
Julia Alwan (2015)  
Unni Engedahl (2016)  
Philip Edenborg (2019)

I am currently supervising one master student:

David Schörling

At Ericsson Microwave systems I supervised two master thesis students:

Niklas Rexborg (2000)  
Alisa Zukanovic (2000)

*Supervision of employed research assistants*

Viktor Nilsson (Aug 2013 – Feb 2014)  
Brita Abrahamsson (Feb 2015 – Aug 2015)  
Alvaro Posada Borbon (Aug 2015 – Dec 2015)  
Unni Engedahl (March 2016 – April 2016)  
Philip Edenborg (September 2019 – December 2019)

*Supervision of guest students*

I have supervised students from groups that I collaborate with during their visits at Chalmers:

Markus Happel (On leave from Erlangen, Feb-April 2008)

Katarzyna Kacprzak (On leave from Jyväskylä, March 2009)

Jess Stausholm-Moller (On leave from Aarhus, September 2010)

Stefan Schernich (On leave from Erlangen, October 2010 – February 2011)

Andrew Harris (On leave from Vanderbilt University, September 2012 - February 2013)

**Awards**

1997 Post-doctor grant from NFR/STINT

2012 Research associate at Hokkaido University, Japan

**Commissions of trust**

*Management*

Head of division Chemical Physics, Chalmers (2012 – )

Deputy Director of Competence Centre for Catalysis at Chalmers (2009 – )

Project coordinator: “Functional catalysts for demanding environments” (SSF) (2010-2013)

Project manager: “An interdisciplinary approach to atomistic design of new catalysts” (NordForsk) (2011-2015)

Project coordinator: “Atomistic Design of catalysts” (KAW) (2016-)

Deputy program manager: Mistra project E4 (2006-2010)

Management committee: COST Action D41 (2006-2010)

Management committee COST Action CM1104 (2012–2016)

Board: C3SE (2007- )

Chair C3SE (2017-2019)

Board: SNIC User Group, (2007-2009)

Panel Chair for VR evaluation of Swedish needs of e-infrastructure (2013)

*Faculty opponent at PhD defences*

M.D. Rasmussen, Inst. of Physics, University of Aarhus, Denmark (2005).

L. Koponen, Department of Applied Physics, Aalto University, Helsinki, Finland (May 2010)

H. Falsig, Technical University of Denmark, Lyngby, Denmark (August 2010)

A. Larsen Technical University of Denmark, Lyngby, Denmark (December 2011)

P. Jennings, University of Birmingham, UK (April 2014)

E. Heikkilä, Tampere University, Finland (September 2014)

H. Guðmundsdóttir, University of Iceland (September 2014)

M. Melander, Aalto University, Helsinki, Finland (August 2015)

A. Mohsenzadeh, Borås University, Borås, Sweden (September 2015)

L. Gell, University of Jyväskylä, Jyväskylä, Finland (January 2017)

L. Arnarson, iNano, University of Aarhus, Denmark (January 2017)

*Evaluation committee at PhD defences*

F. Bawa, Department of Chemistry, Göteborg University (2003)

P. Kjellin, Applied Surface Chemistry, Chalmers (2003)

B. Herschend, Materials Chemistry, Uppsala University (2006)  
K. Rytönen, University of Jyväskylä, Finland (2006)  
K. Dimitrievski, Applied Physics, Chalmers (2006)  
M. Björketun, Applied Physics, Chalmers (2007)  
C. Vasilie, Physics, Göteborg University (2008)  
R. Westerström, Institute of Physics, Lund University (2010)  
A. Börjesson, Department of Physics, Göteborg University (2010)  
T. Andersson, Department of Physics, Uppsala University (2012)  
C. Zhang, Department of Physics, Uppsala University (2013)  
S. Mousavi Nik, Applied Physics, Chalmers (2013)  
H. Öberg, Department of Physics, Stockholm University (2014)  
M. Pertisme, Applied Physics, Chalmers (2015)  
Y. Ji, Theoretical Chemistry, KTH (2015)  
J. Halldin Stenlid, Physical Chemistry, KTH (2017)  
J. Evertsson, Physics, Lund University (2018)  
G. Kebede, Chemistry, Uppsala University (2018)  
J. Andersson, Department of Physics, Göteborg University (2019)  
S. Kaappa, Physics, University of Jyväskylä, Finland (2019)  
B. Svedung Wettervik, Physics, Chalmers (2019)

*Reviewer of Docent, PhD and Lic theses*

Docent application J. Akola, Department of Physics, University of Jyväskylä, Finland (2006)

PhD Thesis K. Rytönen, Department of Physics, University of Jyväskylä, Finland (2006)

PhD Thesis S. Prada, Università di Milano-Bicocca (2013)

PhD Thesis V. Chauhan, Harish Chandra Research Institute, India (2014)

PhD Thesis R. K. Abrahams, University of Cape Town, South Africa (2017)

PhD Thesis S. Kaappa, Department of Physics, University of Jyväskylä, Finland (2019)

Lic. Thesis R. Armiento, Dep. of Physics, KTH, Stockholm (2002)

Lic. Thesis K. Arnby, Applied Surface Chemistry, Chalmers (2003)

Lic. Thesis A. Saramat, Applied Surface Chemistry, Chalmers (2004)

Lic. Thesis I. Perdana, Chemical Reaction Engineering, Chalmers (2006)

Lic. Thesis J. Scheers, Applied Physics, Chalmers (2008)

Lic. Thesis J. Rohrer, Microtechnology and Nanoscience - MC2, Chalmers (2008)

*Referee*

Regular referee mainly for *Angewandte Chemie*, *Physical Review B*, *Physical Review Letters*, *Surface Science*, *Journal of Physical Chemistry (A, B, C)*, *Chemical Physics Letters*, *Journal of the American Chemical Society*, *ACS Catalysis*, *Journal of Catalysis* and *Nature (Materials, Catalysis, Communication)*. I submit about 20 manuscript reviews every year.

I have served in evaluation committee for Swedish Research Council (2017 and 2018).

I have reviewed research proposals for NSF.

I have reviewed research proposals for STINT (Swedish foundation).

I have reviewed research proposals for Marsden Fund (New Zealand).

I have evaluated applicants for a Chair in Atomic scale modelling at DTU, Denmark.

I have reviewed research proposals for Swiss National Science Foundation.

## Organization

- ISSPIC 13 (Göteborg 2006), organization committee
- 13<sup>th</sup> Nordic Symposium on Catalysis (Göteborg 2008), co-chair
- International Symposium on Monolayer-Protected Clusters (Jyväskylä, September 2008), co-chair
- COST Action D41 Workshop (Göteborg 2009), Chair
- NordForsk workshop (Hjortviken, 2011), Chair
- NordForsk workshop (Häckeberga, 2014), Chair
- “Emergent structural and electronic phenomena at interfaces of nanoscale oxides” CECAM workshop, Lausanne, April 15-17, 2015, Chair
- Summer School, The physics and chemistry of atomic clusters, Jyväskylä, August, 2012 (co-chair and lecturer)
- Nordic Summer School on Clusters and Nanoparticles, Fiskebäckskil, June 23-27, 2014 (co-chair and lecturer)
- Summer School, Science of Atomic Nanoclusters, Jyväskylä, August, 2016 (co-chair and lecturer)
- Chair and organizer of numerous smaller (~20 persons) workshops within KAW-project, Mistra-E4, FUNCAT, FFI-project and Chemical Physics. I arrange about three workshops every year.