Curriculum Vitae — Magnus Karlsson

Personal details

- Full name: Lars Magnus Ingemar Karlsson
- Date of Birth: March 23, 1967
- Citizenship: Swedish
- Marital status: Engaged, two children
- email, web: magnus.karlsson@chalmers.se, Chalmers webpage, incl full publication list.

University degrees

- Master of Science in Engineering Physics, Chalmers University of Technology, 1991.
- Doctor of Philosophy (Ph. D) in Electromagnetic Field Theory at Chalmers University of Technology, 1994. Dissertation title: "Nonlinear propagation of optical pulses and beams." Supervisors: Profs. Dan Anderson and Mietek Lisak
- Oct 1999, Docent (Honorary research associate) at the Department of Microelectronics, Photonics Laboratory, Chalmers University of Technology.

Postdoctoral positions and external visits

- Jan.1994–Apr. 1994, Visitng researcher at Australian National University, Canberra, Australia
- Dec. 1994–May 1995, Research associate at the Department of Electromagnetic Field Theory, Chalmers University of Technology. Theoretical research in nonlinear optics, with emphasis on self-action effects such as self-focusing, self-phase modulation, solitary wave propagation and instabilities.
- June 1995–Oct. 1999, Assistant Professor at the Department of Microelectronics, Photonics Laboratory, Chalmers University of Technology.
- Feb. 2009–Apr. 2009, Visiting researcher at Univ. California San Diego, USA
- July 2013–Aug. 2013, Visiting researcher at Univ. California San Diego, USA

Present and previous positions

- Professor in Photonics at the Department of Microtechnology and Nanoscience, Chalmers University of Technology, since 2003. Full professor since 2011. During Jan 2024-Aug 2024 Acting Dean, (Head of department). Nov. 2013-Dec 2023, Aug 2024-Dec 2025 pro-dean (Deputy head of department) at the Department of Microtechnology and Nanoscience (staff 270), with special responsibility for the graduate school (comprising approx. 80 graduate students). Since Jan 2026, Head of Division (Photonics Laboratory). Lectures the master course "Wireless and photonics system engineering".
- Nov 1999–June 2003, Docent and Associate Professor at the Department of Microelectronics, Photonics Laboratory, Chalmers University of Technology. Theoretical and experimental research in fiber optic communications. Responsible for TFR and SSF projects and projects with Ericsson Telecom.

Interruption in research

- Paternity leave 2x3 months; april-june 1996, april-june 2001.

Teaching

- "Fundamentals of Photonics", masters level, 7.5 HEC, 1995-1999, lecturer and examiner 1996-1999
- "Advanced Photonics", masters level, 7.5 HEC, 1999-2002, examiner
- "Fiber optic communications", masters level, 7.5 HEC, 2002-2007, lecturer and examiner
- "Wireless and Photonics System engineering", masters level, 7.5 HEC, 2009-present, lecturer and co-examiner
- "Photonics and Lasers", masters level, 7.5 HEC, 2017-present, lecturer and examiner
- Guest lectures in various courses at Chalmers, e.g. "High frequency technology", Digital Signal processing",
- PhD student courses in: "Nonlinear Fiber optics", "Polarization effects in fibers","Coherent trans-

mission and DSP"

Supervision

- Graduated Ph.D students 2001: Henrik Sunnerud, main supervisor (ms), Jonas Hansryd, co-supervisor (cs); 2004: Jie Li (cs); 2006: Per Kylemark (ms), Thomas Torounidis (cs); 2008: Mats Sköld (ms), Hongxia Zhao (cs); 2012: Martin Sjödin (ms), Ekawit Tipsuwannakul (cs), Carl Lundström (cs); 2013: Lotfollah Beygi (cs), Johnny Karout(cs), Krzysztof Szczerba (ms); 2015: Samuel Olsson (cs), Tobias Eriksson (ms); 2017: Abel Lorences Riesgo (ms); 2018: Cristian Czegledi (cs), Henrik Eliasson (cs); 2019: Tamas Lengyel (ms), Lars Lundberg (ms), Mikael Mazur (ms), Christoffer Fougstedt (cs), Alireza Sheik (cs), 2020: Arni Alfredson (cs), Kovendhan Vijayan (cs); 2023: Ali Mirani (ms), Krishna Twayana (cs), Shen Li (cs), Alexander Caut (ms), Connor Skehan (cs), 2024: Erk Börjesson (cs), Ekaterina Deriushkina (ms), Zonglong He (cs), Mohammad Farsi (cs), Rasmus Larsson (cs).
- Currently main supervisor of 2 PhD students: (Manish Raj, Sam O'brien), co-supervising 2 PhD students (Frida Olofsson, Zicong Jiang).
- PostDoc hosting/supervision: Erik Börjesson (2025–2027), Ping Zhao (2019–2024), Mehdi Jamshidifar (2021-2023), Ben Foo (2018-2019), Diego Villafani 2018–2019, Elham Nazemosadat 2015–2018, Vitor Ribeiro 2015–2017, Nishan Dharmaweera (2015–2016), Ales Kumpera 2013–2015, Rohit Malik, 2013–2014, Bill Corcoran 2011–2013, Jianqiang Li, 2011–2012, Pontus Johannisson, 2009–2011, Zhi Tong, 2009–2011, Claudio Vinegoni, 2002–2003.

Distinctions and awards

- Appointed Fellow of IEEE 2023
- Appointed Fellow of Optica (former Optical Society of America) 2012
- Main supervisor of winners of IEEE Photonics Sweden PhD Award 2019, 2020, 2021
- Best paper award, 2011 IEEE Global Communications Conference (GlobeCom)
- Supervised best student paper awards, ECOC 2019, ECOC 2012.

Research grants (selected)

- 2025 M. Karlsson, "Modeling and Detection of Security Threats to Submarine Fiber Cables", VR, 6 MSEK
- 2025 EU project ECSTATIC, 3.5 M€, Chalmers part 360 k€.
- 2022 EU, Marie Sklodowska-Curie ITN project HOMTech, 2.8 M€, Chalmers part 293 k€.
- 2018 H. Weymeersh, E. Agrell, P. Andrekson, M. Karlsson, V. Torres-Company and J. Schröder, "Unlocking full-dimensional fiber capacity", KAW grant, 31 MSEK
- 2017 A. Larsson, P. Andrekson, M. Karlsson, V. Torres-Company and L. Oxenloewe, "ITran - Intergrated Terabit/s transmitters", VR framework, 20 MSEK
- 2016 M. Karlsson and E. Agrell, "Polarization-aware optical communication", VR project, 4 MSEK
- 2014 P. Andrekson, A. Larsson, M. Karlsson, E. Agrell, P. Larsson-Edefors, "Energy-efficicient optical fiber communication", KAW Foundation, 34 MSEK
- 2014 P. Andrekson, M. Karlsson, E. Agrell and V. Torres-Company, "Spatial division multiplexing", VR framework, 12 MSEK
- 2012 E. Agrell, H. Wymeersch, P. Andrekson and M. Karlsson, "Adaptive optical networks: Theory and algorithms for system optimization", VR framework, 12 MSEK
- 2011 M. Karlsson and P. Andrekson, "Channel estimation and performance monitoring", VR project, 4 MSEK
- 2010 M. Karlsson, "EO-Net, Elastic Optical Networks", Vinnova, 2 MSEK
- 2010 P. Andrekson, M. Karlsson, E. Agrell and H. Wymeersch, "Power efficient Terabit/s transmission", VR framework, 9.6 MSEK
- 2008 P. Andrekson, M. Karlsson, and E. Agrell, "Next generation optical communication systems", SSF, 20.8 MSEK
- 2008 M. Karlsson, P. Andrekson and A. Larsson, "Advanced modulation and transmission in short-range optical links", VR project, 2.5 MSEK

- 2008 M. Karlsson, P. Andrekson, and E. Agrell, “Advanced optical communication technologies for access and transport networks,” Vinnova/EU-Celtic, 9 MSEK
- 2005 M. Karlsson and P. Andrekson, ”New functionalities in optical networks”, VR project, 2.5 MSEK
- 2001 M. Karlsson and P. Andrekson, ”Ultrahigh speed optical transmission impairments and their remedy”, VR projects, 2.1 MSEK

Publication, professional network and scientific community activities

- Publication record: Karlsson has authored or co-authored around 500 peer reviewed scientific articles and conference papers, 6 book chapters and 2 patents, and has around 50 invited papers and presentations to various international conferences. Hirsch index: 63, nbr. of citations 17 900 (Based on Google Scholar, April 2026).
- Google Scholar citation page: Magnus Karlsson at Google Scholar
- In the advisory board for the 2012-2018 joint UC London and Aston University project ”UNLOC”.
- Mid-term and final referee for the EU/Celtic-plus project SASER, (budget: 80 M€).
- 2012-2015 in the committee for the IEEE Photonic Society Young Investigator Award, (2014-15 as committee chair).
- Associate Editor for Optics Express 2010-2015, Deputy Editor 2015-2021. item Associate Editor for Journal of Lightwave Technology, 2020-2021, Deputy Editor 2021-2024, Editor-in-Chief 2025-present.
- Member of the technical program committees (TPC) of ECOC (European Conference on Optical Communication) 2011-2014, 2016-2019, 2021-present, and OFC (Optical Fiber Communication Conference) 2005–2009 (2009 as subcommittee chair), 2017–2019, and CLEO 2018-2021. TPC co-chair for ECOC 2025.
- In the TPC for ICC (Int. Conf. on Communications) and Globecom. Previous member of TPC for OAA (OSA Topical meeting on Optical Amplifiers and Applications) 2005–2006, and ACP (Asia Communications and Photonics Conference) 2010–2015, OSA Topical meeting on Nonlinear Photonics, 2007.
- Co-chair of the 2010 IEEE Photonic Society Summer Topical Meeting on Polarization Multiplexed Transmission.
- Cofounder of Fibre-Optic Communications Research Centre (FORCE) at Chalmers, 2010 (FORCE web at Chalmers).
- External referee for $>$ 50 PhD theses, of which $>$25 outside Sweden.
- Referee for the Nobel committee in physics.
- Evaluator of tenure track positions at other universities, as well as research proposals and research quality evaluations for national funding agencies in Sweden and other countries (e.g. Canada, Israel, Japan, Italy).
- Professional contact network and collaborations (evidenced by joint publications or joint grant applications) with, e.g., Aston Univ. (Prof. S. Turitsyn, Prof. A. Ellis), Heinrich Hertz Inst., Berlin (Dr. C. Schubert), Univ. Southampton (Prof. D. Richardson, Prof. P. Petropolous), Univ. California San Diego (Prof. S. Radic, Dr. N. Alic), Stanford University (Prof. J. Kahn), Techn. Univ. Denmark (Prof. L. Oxenloewe, Prof. K Rottwitt), Nokia Bell Labs, USA (Dr. M. Mazur), Mitsubishi El. Corp., Japan (Dr. T. Yoshida), Univ. L’Aquila, Italy (Prof. A. Mecozzi, Prof. C. Antonelli), Univ. Coll. London (Prof. P. Bayvel), Techn. Univ. München (Prof. N. Hanik)