

KRISTER FRÖJDH

EMPLOYMENT HISTORY

PROXIMION AB

Jan 2013-current: VP R&D. Responsible for R&D at Proximion AB. Also manager of IT.

PROXIMION FIBER SYSTEMS AB

Jul 2012-Dec 2012: Chief engineer R&D. Chief engineer for grating writing.

Sep 2009-Jun 2012: R&D Manager Core Technology. Head and Chief Engineer of the grating writing R&D group. Also many engineering tasks in programming, analysis and system engineering.

ZARLINK

Mar 2009-Aug 2009: Research Engineer VCSEL. Worked with development of Vertical Cavity Emitting Laser Diodes. Included measurement and modeling.

PROXIMION

Dec 2007-Feb 2009 : Senior Expert. Mainly software development

May 2006-Nov 2007: Research Manager: Head of the optics R&D team. Reporting to CEO. Member of the management team. Project manager for a software project for automation of grating writing

Mars 2005-April 2006: Optical Engineer and Project Manager: Project manager for the development of a new grating writing machine. Worked with the development of process and production equipment for UV-writing of Bragg gratings. Tasks include project management, software for control and measurements in LabVIEW, analysis of data using Matlab, measuring data storage using XML, analogue design using Orcad, optical measurements.

OPTILLION

May 2000 — Feb 2005: Senior Expert Optoelectronics and Project Manager, Was project manager and lead designer of a direct modulated 10 Gbit/s 1310 nm DFB and a 1550 nm 10 Gbit/s EML from design into full scale production The work included laser design, mask design, process design, software and set-ups for research and production test and full documentation. Also worked in the 10 Gbit/s Ethernet Task force. Member of the patent group.

ERICSSON

1998 — 2000 R&D Engineer at *Ericsson Microelectronic, Opto electronic products.* Work included optimization of electro absorptions modulators as well as project management of a joint project with a Chinese research institute in optimization of MBE grown MQWs for un-cooled lasers.

1997-1998 Research Engineer at *Ericsson Fiber Optic Research Center (FORC).* Work included FTTH lasers and building practice. Hands on experience from work in an InP semiconductor fab.

ROYAL INSTITUTE OF TECHNOLOGY (KTH), STOCKHOLM

1990-1996 PhD Student at the department of optics. Developed a device simulator of MQW devices including dynamic simulation of transport properties. Also performed experimental



work with semiconductor characterization. Worked 33% as a teacher in optics and other physics.

EDUCATIONAL BACKGROUND

1996 Ph.D. in Laser Physics at [Royal Institute of Technology, Stockholm](#), Department of Optics

1990 Master of Engineering Degree in electrical engineering [Royal Institute of Technology, Stockholm](#),

1985 Engineer Examine in medical electronics.

SKILLS

- Quick learner of a new technology.
- Focus on goals, results (deliverables) and profitability.
- System design with integration of software, electronics and mechanics.
- Project management: Experience from a number of product development project, several research project and production projects
- Line Manager: 4 years experience as a line manager over a group of approximate eight persons (several with PhD in physics). Experience includes recruitment of technical experts and being a member of the management team.
- Documentation: Efficient producer of technical documentation (specifications, report and instructions) both for internal and external use.
- Optical communication: Deep knowledge of dispersion compensation. Considerable experience of 10 Gbit/s transmission, especially using EAM transmitters.
- Optical components: Design of DFB-lasers and EAM. Design of Fiber Bragg Gratings. Design of VCSELs. Lifetest and qualification. Specifications.
- Measurements: Long experience with optical measurements. Also experience with HF opto-electrical measurements and optical vector analyzers.
- Measurement automatization: Long experience with building and programming computer controlled measurement set-ups.
- Programming: LabVIEW, Matlab, C, C++ .
- Data mining: Long experience of handling and analyzing large measurement data sets including data base sources.
- Analog design. Experience with simpler analogue design including simulation and schematics (using OrCAD)
- Patents: Both creating and managing.
- Languages: English, Swedish and some German (passively)
- Teaching/presentation: Considerable experience of teaching and oral presentation.

ACHIEVEMENTS

- Two lasers from development into industrialized product including production test
- Two dispersion compensation grating products.
- One standard: IEEE 802.3ae 10Gb/s Ethernet
- One grating writing machine from development into full scale production
- Numerous computer programs for research, production test and data analysis
- Nine Patents

MEMBERSHIPS

- Worked in the IEEE 802.3ae 10 Gbit Ethernet task force in the optical serial group.
- Member IEEE since 1988

- Member of the board of the Swedish electronics and computer engineer society [SER](#) 2005-2007

HOBBIES

Music, photographing and sailing.

FAMILY

Married with five children: born 1990 to 2006. Live in a house in Älvsjö, a suburb approx. 10 km south of Stockholm city. Born 1965 in Stockholm, Sweden

CONTACT INFORMATION

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PATENTS

11 patents in the field of optical communication and semiconductor lasers:

- **WO 00/36448** AN OPTICAL TRANSMITTER-RECEIVER MODULE
- **WO 01/52369** INTEGRATED WAVELENGTH MONITOR
- **WO 01/90794** METHOD AND DEVICE FOR PASSIVE ALIGNMENT
- **WO 02/49173** DISTRIBUTED FEEDBACK LASER WITH VARYING ELECTRICAL RESISTANCE FOR UNIFORM GAIN INSIDE THE OPTICAL WAVEGUIDE
- **WO 03/047057** METHOD AND SYSTEM FOR AN OPTICAL DEVICE
- **WO 03/034121** OPTICAL SUB-ASSEMBLY
- **WO 03/026084** COOLING OF OPTICAL TRANSMITTER MODULES
- **WO 03/032491** REDUCTION OF RINGING AND INTER-SYMBOL INTERFERENCE IN OPTICAL COMMUNICATIONS
- **WO 03/007443** MANUFACTURING SEMICONDUCTOR LASERS HAVING GRATINGS
- **WO 05/122348** WAVELENGTH STABILIZED LASER MODULE.
- **WO 05/110004** DRIVING CIRCUIT FOR ELECTRO ABSORPTION MODULATOR

PUBLICATIONS

1. S. Marcinkevicius , K. Fröjdh and K. Naudzius, "Photoluminescence study of carrier transfer into InGaAs/GaAs quantum wells under different excitation intensities" J.. Luminescence, **54**, 89-93 (1992). ([abstract](#))
2. K. Fröjdh, U. Olin and R. Planel, "Space-charge-induced interband optical nonlinearities in asymmetric coupled quantum wells" Optical and Quantum Electr. **26**, S565-S569 ([abstract](#))
3. S. Marcinkevicius , K. Fröjdh and K. Naudzius, "Photoluminescence study of carrier transfer into InGaAs/GaAs quantum wells under different excitation intensities" J.. Luminescence, **54**, 89-93 (1992). (abstract)
4. K. Fröjdh, U. Olin and R. Planel, "Space-charge-induced interband optical nonlinearities in asymmetric coupled quantum wells" Optical and Quantum Electr. **26**, S565-S569 (abstract)
5. K. Fröjdh, S. Marcinkevicius, U. Olin, C. Silfvenius, B. Stålnacke, and G. Landgren. "Interwell carrier transport in InGaAsP multiple quantum well laser structures. " Appl. Phys. Lett. **69**, 3695-3697 (1996).

6. S. Marcinkevicius, H. Hillmer, R. Lösch, K. Fröjdh and U. Olin: "Interwell carrier distribution in InAlGaAs quantum well laser structures." *Phys. Stat. Sol. (b)* 204, 577-580 (1997).
7. S. Marcinkevicius, K. Fröjdh, H. Hillmer, R. Lösch and U. Olin: "Vertical carrier transport in InP-based quantum well laser structures." *Materials Science and Engineering B* 51, 30 (1998).
8. S Bischoff, J Mørk, T Franck, S D Brorson, M Hofmann, K Fröjdh, L Prip and M P Sørensen "Monolithic colliding pulse mode-locked semiconductor lasers" 1997 *Quantum Semiclass. Opt.* 9 655-674
9. M. Hofmann, K. Fröjdh, S. D. Brorson, and J. Mørk: "Temporal and spectral dynamics in Multiquantum well semiconductor saturable absorbers", *IEEE Photon. Technol. Lett.* 9, 622 (1997).
10. M. Hofmann, S. Bischoff, T. Franck, L. Prip, S.D. Brorson, J. Mørk and K. Fröjdh: "Chirp of monolithic colliding pulse mode-locked diode lasers", *Appl. Phys. Lett.* 70, 2514 (1997).
11. K Fröjdh "Carrier transport effects in semiconductor heterostructures for optical application" Doctoral Thesis, 1996 KTH Stockholm.
12. P. Granstrand, K. Fröjdh, O. Sahlén, B. Stoltz, J. Wallin, "Gain characteristics of QW Lasers, European Conference on Optical Communication (ECOC'98), pp. 431-432, Sept. 1998.
13. K. Fröjdh, "New Manufacturing of Ultra-Long FBG's (> 10 m) whilst Maintaining High Performance Characteristics," in *Bragg Gratings, Photosensitivity, and Poling in Glass Waveguides*, OSA Technical Digest (CD) (Optical Society of America, 2010), paper BMA1.