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24.01.1973

Christian-Albrechts-Universität zu Kiel (CAU)
Integrated Systems and Photonics
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Professor (W3)

1,5 years parental leave for four children

Education

- 1999 - 2003 Ph.D. in Electrical Engineering, Stanford University, CA, USA; Thesis: „Wavelength Multiplexing by Spatial Beam Shifting in Multilayer Thin-Film Structures“ (with Prof. D. A. B. Miller)
- 1998 M.Sc. Thesis „Measuring the optical properties of turbid media“ at the Molecular Physics Laboratory, SRI International, Menlo Park, CA, USA (with Dr. G. Faris)
- 1993 - 1998 Study of Electrical Engineering at the University of Karlsruhe

Professional Career

- Since 2008 Professor (W3) for Integrated Systems and Photonics at the Faculty of Engineering of the CAU
- 2014 Offer of the professorship (W3) „Optoelectronic systems in medicine and biosciences“, Department for Electrical and Information Engineering, Karlsruhe Institute of Technology (KIT) (declined)
- 2014 Offer of the professorship (W3) „Measurement and sensing technology“, Department for Electrical and Information Engineering, Technical University Darmstadt (declined)
- 2003 – 2008 Junior group leader (C1), Light Technology Institute, University of Karlsruhe
- 2001 (summer) Visiting scientist, Institute for High Frequency and Quantum Electronics, University of Karlsruhe
- 1999 – 2003 Ph.D. student, Ginzton Laboratory, Stanford University, CA, USA
- 1998 – 1999 Research assistant, Molecular Physics Laboratory, SRI International, Menlo Park, CA, USA

Important Scientific Functions and Prizes

- 2016 - today Steering committee member of the CRC 1261 “Magnetolectric Sensors: From Composite Materials to Biomagnetic Diagnostics”
- 2013 - today Management committee member of the Competence Center on Nanosystems Technology
- 2013 Science award of the state capital Kiel
- 2012 - 2018 ERC Starting Grant
- 2008 - 2012 Management committee member of COST Action MP0702: Towards Functional Sub-Wavelength Photonic Structures

2008	Adolf-Martens-Award for the Area of Material sciences, material research and testing
2007 - 2012	NanoFutur-Award of the BMBF
2007 - 2008	Member of the Executive Board of the Karlsruhe School of Optics and Photonics
1999 - 2002	Sequoia Capital Stanford Graduate Fellowship

Selected Publications

Paulsen, M.; Neustock, L. T.; Jahns, S.; Adam, J. and Gerken, M.; Simulation methods for multiperiodic and aperiodic nanostructured dielectric waveguides. *Optical and Quantum Electronics*, 49(3) (2017), 107.

Nazirizadeh, Y.; Behrends, V.; Prósz, A.; Orgovan, N.; Horvath, R.; Ferrie, A. M.; Fang, Y.; Selhuber-Unkel, C. and Gerken, M.: Intensity interrogation near cutoff resonance for label-free cellular profiling. *Scientific Reports* 6 (2016), 24685.

Gugat, J. L.; Schmalz, J.; Krantz, M. C. and Gerken, M.: Magnetic Flux Concentration Effects in Cantilever Magnetolectric Sensors. *IEEE Transactions on Magnetics*, 52(5) (2016), 1-8.

Neustock, L. T.; Jahns, S.; Adam, J. and Gerken, M.: Optical waveguides with compound multiperiodic grating nanostructures for refractive index sensing. *Journal of Sensors* 501 (2015), 6174527.

Karroock, T. and Gerken, M.: Pressure sensor based on flexible photonic crystal membrane. *Biomedical Optics Express* 6(12) (2015), 4901-4911.

Jahns, S.; Bräu, M.; Meyer, B. O.; Karroock, T.; Gutekunst S. B.; Blohm, L.; Selhuber-Unkel, C.; Buhmann, R.; Nazirizadeh, Y.; Gerken, M.: Handheld imaging photonic crystal biosensor for multiplexed, label-free protein detection. *Biomedical Optics Express* 6 (2015), 3724-3736.

Krantz, M. C.; Gugat J.L. and Gerken, M.: Resonant magnetolectric response of composite cantilevers: Theory of open vs. short circuit operation and layer sequence effects, *AIP Advances* 5 (2015), 117230.

Threm, D.; Nazirizadeh, Y.; Gerken, M.: Photonic crystal biosensors towards on-chip integration, *Journal of Biophotonics* 5 (2012), 601-616.

Gerken, M. and Miller, D. A. B.: Multilayer Thin-Film Structures with High Spatial Dispersion; *Applied Optics* 42 (2003), 1330.

Gerken, M. and Faris, G. W.: High-precision frequency-domain measurements of the optical properties of turbid media. *Optics letters* 24(14) (1999), 930-932.