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Academic Education and Degrees

- 1999 - 2003 Ph.D. in Electrical Engineering, Stanford University, CA, USA; Thesis: „Wavelength Multiplexing by Spatial Beam Shifting in Multilayer Thin-Film Structures“ (Advisor: 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 (Advisor: Dr. G. Faris)
- 1993 - 1998 Study of Electrical Engineering at the University of Karlsruhe, Germany

Professional Career

- Since 2008 Professor (W3) for Integrated Systems and Photonics at the Faculty of Engineering, Kiel University, Germany
- 2016 Visiting professor at Glasgow University, Scotland, UK
- 2015 Founding of spin-off company Byonoy GmbH
- 2003 – 2008 Junior group leader (C1), Light Technology Institute, University of Karlsruhe, Germany
- 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

- 2020 - today DFG review board member for 408-01 Electronic Semiconductors, Components, Circuits, Systems
- 2016 Feodor Lynen research stipend of the Alexander von Humboldt Foundation
- 2014 - today Project lead Center for Networked Sensor Systems
- 2013 - today Management committee member of the Competence Center on Nanosystems Technology
- 2013 Science award of the state capital Kiel
- 2012 - 2017 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
- 1999 - 2002 Sequoia Capital Stanford Graduate Fellowship

Selected Publications

Murat, Y.; Lüder, H.; Köpke, M.; Buhl, J.; **Gerken, M.** Realizing 8 Cd A–1 Current Efficiency for Solution-Processed Inverted Top-Emitting Polymer Light-Emitting Diodes. *J. Electron. Mater.* **2021**. <https://doi.org/10.1007/s11664-021-08776-0>.

Biomedical Optical Sensors; De La Rue, R., Herzig, H. P., **Gerken, M.**, Eds.; Biological and Medical Physics, Biomedical Engineering; Springer International Publishing: Cham, **2020**. <https://doi.org/10.1007/978-3-030-48387-6>.

Krantz, M. C.; **Gerken, M.** Limit of Thermal-Vibration Noise in Magnetic Field Detection with Magnetolectric-Composite Cantilevers. *Phys. Rev. Appl.* **2020**, *13* (5), 054047. <https://doi.org/10.1103/PhysRevApplied.13.054047>.

Murat, Y.; Petersons, K.; Lanka, D.; Lindvold, L.; Yde, L.; Stensborg, J.; **Gerken, M.** All Solution-Processed ITO Free Flexible Organic Light-Emitting Diodes. *Mater. Adv.* **2020**, *1* (8), 2755–2762. <https://doi.org/10.1039/D0MA00618A>. Selected for and featured in Materials Advances HOT Article Collection.

Schmalz, J.; Kittmann, A.; Durdaut, P.; Spetzler, B.; Faupel, F.; Höft, M.; Quandt, E.; **Gerken, M.** Multi-Mode Love-Wave SAW Magnetic-Field Sensors. *Sensors* **2020**, *20* (12), 3421. <https://doi.org/10.3390/s20123421>.

Titov, I.; Köpke, M.; Schneidewind, N. C.; Buhl, J.; Murat, Y.; **Gerken, M.** OLED-OPD Matrix for Sensing on a Single Flexible Substrate. *IEEE Sens. J.* **2020**, *20* (14), 7540–7547. <https://doi.org/10.1109/JSEN.2020.2986051>.

Lüder, H.; **Gerken, M.** FDTD Modelling of Nanostructured OLEDs: Analysis of Simulation Parameters for Accurate Radiation Patterns. *Opt. Quantum Electron.* **2019**, *51* (5), 139. <https://doi.org/10.1007/s11082-019-1838-4>. Springer Nature 2019 Highlight in the area of Physics.

Nazirizadeh, Y.; Behrends, V.; Prósz, A.; Orgovan, N.; Horvath, R.; Ferrie, A. M.; Fang, Y.; Selhuber-Unkel, C.; **Gerken, M.** Intensity Interrogation near Cutoff Resonance for Label-Free Cellular Profiling. *Sci. Rep.* **2016**, *6* (1), 24685. <https://doi.org/10.1038/srep24685>.

Jahns, S.; Bräu, M.; Meyer, B.-O.; Karrock, 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. *Biomed. Opt. Express* **2015**, *6* (10), 3724. <https://doi.org/10.1364/BOE.6.003724>.

Karrock, T.; **Gerken, M.** Pressure Sensor Based on Flexible Photonic Crystal Membrane. *Biomed. Opt. Express* **2015**, *6* (12), 4901. <https://doi.org/10.1364/BOE.6.004901>.

Selected patents

Nazirizadeh, Y.; Karrock, T.; **Gerken, M.**; Roider, J.: Device for optically representing intraocular pressure, and a method for same, US 9730788 B2.

Riedel, B.; **Gerken, M.**; Hauß, J.; Lemmer, U.: Charge carrier transport layer, method for production of same and electro-optical construction element, EP 2287938 B1.