

# Andreas Theo Pfenning

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**Short Biography.** Andreas Pfenning is a Research Group Leader for Semiconductor Quantum Photonic Technologies at the Chair for Applied Physics (Lehrstuhl für Technische Physik) at the Julius-Maximilians-Universität Würzburg in Germany, where he is also pursuing his Habilitation in Experimental Physics. His main research focus is on the generation of quantum photonic states from semiconductor quantum dots and their application in fundamental physics and information technologies.

He received his PhD in physics (*Dr. rer. nat.*) in 2018 at the University of Würzburg for his work on the optoelectronic transport spectroscopy of resonant tunneling diode photodetectors. After his doctorate, he continued as Postdoctoral Researcher in Würzburg on nano-tailored semiconductor devices for quantum technological applications. In 2020, Andreas joined the Quantum Matter Institute of the University of British Columbia in Vancouver, Canada, as a Postdoctoral Research Fellow, where he defined and progressed the roadmap towards silicon-photonic quantum computing with spin qubits.

## Recent publications in the field of telecom-wavelength quantum light sources:

- (1) Marco De Gregorio, Shangxuan Yu, Donald Witt, Becky Lin, Matthew Mitchell, Łukasz Dusanowski, Christian Schneider, Lukas Chrostowski, Tobias Huber-Loyola, Sven Höfling, Jeff F. Young, and **Andreas Pfenning**. "Plug-and-Play Fiber-Coupled Quantum Dot Single-Photon Source via Photonic Wire Bonding." *Advanced Quantum Technologies* (2023): 2300227. doi: [10.1002/qute.202300227](https://doi.org/10.1002/qute.202300227)
- (2) Michl, Johannes, Giora Peniakov, **Andreas Pfenning**, Joonas Hilska, Abhiroop Chellu, Andreas Bader, Mircea Guina, Sven Höfling, Teemu Hakkarainen, and Tobias Huber-Loyola. "Strain-free GaSb quantum dots as single-photon sources in the telecom S-band." *Advanced Quantum Technologies* (2023): 2300180. doi: [10.1002/qute.202300180](https://doi.org/10.1002/qute.202300180)
- (3) Jochen Kaupp, Yorick Reum, Felix Kohr, Johannes Michl, Quirin Buchinger, Adriana Wolf, Giora Peniakov, Tobias Huber-Loyola, **Andreas Pfenning**, and Sven Höfling. "Purcell-Enhanced Single-Photon Emission in the Telecom C-Band." *Advanced Quantum Technologies* (2023): 2300242. doi: [10.1002/qute.202300242](https://doi.org/10.1002/qute.202300242)
- (4) Peniakov, Giora, et al Giora Peniakov, Quirin Buchinger, Mohamed Helal, Simon Betzold, Yorick Reum, Michele B. Rota, Giuseppe Ronco, Mattia Beccaceci, Tobias M. Krieger, Saimon F. Covre Da Silva, Armando Rastelli, Rinaldo Trotta, **Andreas Pfenning**, Sven Hoefling, Tobias Huber-Loyola. "Polarized and Un-Polarized Emission from a Single Emitter in a Bullseye Resonator." *arXiv preprint arXiv:2308.06231* (2023). doi: [10.48550/arXiv.2308.06231](https://doi.org/10.48550/arXiv.2308.06231)
- (5) Xiruo Yan, Sebastian Gitt, Becky Lin, Donald Witt, Mahssa Abdolahi, Abdelrahman Afifi, Adan Azem, Adam Darcie, Jingda Wu, Kashif Awan, Matthew Mitchell, **Andreas Pfenning**, Lukas Chrostowski, and Jeff F. Young. "Silicon photonic quantum computing with spin qubits." *APL Photonics* 6, 070901 (2021). doi: [10.1063/5.0049372](https://doi.org/10.1063/5.0049372)