Selected Publications

- T. Gao, M. von Helversen, C. Anton-Solanas, C. Schneider, **T. Heindel**: *Atomically-thin Single-photon Sources for Quantum Communication*, npj 2D Materials & Applications 7, 4 (2023)
- T. Gao, L. Rickert, F. Urban, J. Große, N. Srocka, S. Rodt, A. Musiał, K. Żołnacz, P. Mergo, K. Dybka, W. Urbańczyk, G. Sęk, S. Burger, S. Reitzenstein, and **T. Heindel**: *A Quantum Key Distribution Testbed using a Plug&Play Telecom-wavelength Single-Photon Source*, Applied Physics Reviews 9, 011412 (2022)
- D. A. Vajner, L. Rickert, T. Gao, K. Kaymazlar, **T. Heindel**: *Quantum Communication Using Semiconductor Quantum Dots*, Advanced Quantum Technologies 5, 2100116 (2022) **Review**
- T. Kupko, M. v. Helversen, L. Rickert, J.-H. Schulze, A. Strittmatter, M. Gschrey, S. Rodt, S. Reitzenstein, and **T. Heindel**: *Tools for the performance optimization of single-photon quantum key distribution*, npj Quantum Information 6, 29 (2020)
- **T. Heindel**, C.A. Kessler, M. Rau, C. Schneider, M. Fürst, F. Hargart, W.M. Schulz, M. Eichfelder, R. Roßbach, S. Nauerth, M. Lermer, H. Weier, M. Jetter, M. Kamp, S. Reitzenstein, S. Höfling, P. Michler, H. Weinfurter, und A. Forchel: *Quantum key distribution using quantum dot single-photon emitting diodes in the red and near infrared spectral range*, New Journal of Physics 14, 083001 (2012)

Recent Preprints (submitted to journals)

- D. A. Vajner, P. Holewa, E. Zięba-Ostój, M. Wasiluk, M. von Helversen, A. Sakanas, A. Huck, K. Yvind, N. Gregersen, A. Musiał, M. Syperek, E. Semenova, and **T. Heindel**: *On-demand Generation of Indistinguishable Photons in the Telecom C-Band using Quantum Dot Devices*, arXiv:2306.08668 (2023)
- Y. Karli, D. A. Vajner, F. Kappe, P. C. A. Hagen, L. M. Hansen, R. Schwarz, T. K. Bracht, C. Schimpf, S. F. Covre da Silva, P. Walther, A. Rastelli, V. M. Axt, J. C. Loredo, V. Remesh, **T. Heindel**, D. E. Reiter, and G. Weihs: *Controlling the Photon Number Coherence of Solid-state Quantum Light Sources for Quantum Cryptography*, arXiv:2305.20017 (2023)
- P. Holewa, E. Zięba-Ostój, D. A. Vajner, M. Wasiluk, B. Gaál, A. Sakanas, M. Burakowski, P. Mrowiński, B. Krajnik, M. Xiong, A. Huck, K. Yvind, N. Gregersen, A. Musiał, **T. Heindel**, M. Syperek, and E. Semenova: *Scalable quantum photonic devices emitting indistinguishable photons in the telecom C-band*, arXiv:2304.02515 (2023)

Peer-Reviewed Journal Articles

1. **T. Heindel**, J.-H. Kim, N. Gregersen, A. Rastelli, S. Reitzenstein: Quantum dots for photonic quantum information technology, Advances in Optics and Photonics 15, 613–738 (2023) **Review**
2. L. Rickert, F. Betz, M. Plock, S. Burger, **T. Heindel**: *High-performance designs for fiber-pigtailed quantum-light sources based on quantum dots in electrically-controlled circular Bragg gratings*, Optics Express 31, 14750 (2023)
3. T. Gao, M. von Helversen, C. Anton-Solanas, C. Schneider, **T. Heindel**: Atomically-thin Single-photon Sources for Quantum Communication, npj 2D Materials & Applications 7, 4 (2023)
4. J. Michl, C. C. Palekar, S. A. Tarasenko, F. Lohof, C. Gies, M. von Helversen, R. Sailus, S. Tongay, T. Taniguchi, K. Watanabe, **T. Heindel**, B. Rosa, M. Rödel, T. Shubina, S. Höfling, S. Reitzenstein, C. Anton-Solanas, C. Schneider: *Intrinsic circularly polarized exciton emission in a twisted van der Waals heterostructure*, Physical Review B 105, L241406 (2022)
5. D. A. Vajner, L. Rickert, T. Gao, K. Kaymazlar, **T. Heindel**: *Quantum Communication Using Semiconductor Quantum Dots*, Advanced Quantum Technologies 5, 2100116 (2022) **Review**
6. T. Gao, L. Rickert, F. Urban, J. Große, N. Srocka, S. Rodt, A. Musiał, K. Żołnacz, P. Mergo, K. Dybka, W. Urbańczyk, G. Sęk, S. Burger, S. Reitzenstein, **T. Heindel**: A Quantum Key Distribution Testbed using a Plug&Play Telecom-Wavelength Single-Photon Source, Applied Physics Reviews 9, 011412 (2022)
7. T. K. Bracht, M. Cosacchi, T. Seidelmann, M. Cygorek, A. Vagov, V. M. Axt, **T. Heindel**, D. Reiter: Swing-Up of Quantum Emitter Population Using Detuned Pulses, PRX Quantum 2, 040354 (2021)
8. L. Rickert, F. Schröder, T. Gao, C. Schneider, S. Höfling, **T. Heindel**: *Fiber-pigtailing quantum-dot cavity-enhanced light emitting diodes*, Applied Physics Letters 119, 131104 (2021)

9. H. Georgieva, M. A. Lopez, H. Hofer, J. Christinck, B. Rodiek, P. Schnauber, A. Kaganskiy, **T. Heindel**, S. Rodt, S. Reitzenstein, S. Kück: *Radiometric characterization of a triggered narrow-bandwidth single-photon source and its use for the calibration of silicon single-photon avalanche detectors*, Metrologia 57, 055001 (2020)
10. N. Srocka, P. Mrowiński, J. Große, M. von Helversen, **T. Heindel**, S. Rodt, S. Reitzenstein: *Deterministically fabricated quantum dot single-photon source emitting indistinguishable photons in the telecom O-band*, Applied Physics Letters 116, 231104 (2020)
11. T. Kupko, M. v. Helversen, L. Rickert, J.-H. Schulze, A. Strittmatter, M. Gschrey, S. Rodt, S. Reitzenstein, **T. Heindel**: *Tools for the performance optimization of single-photon quantum key distribution*, npj Quantum Information 6, 29 (2020)
12. M. Schmidt, M. v. Helversen, S. Fischbach, A. Kaganskiy, R. Schmidt, A. Schliwa, **T. Heindel**, S. Rodt, und S. Reitzenstein: *Deterministically fabricated spectrally-tunable quantum dot based single-photon source*, Optical Materials Express 10, 76 (2020)
13. S. Rodt, S. Reitzenstein, und **T. Heindel**: *Deterministically Fabricated Solid-State Quantum-light Sources*, Journal of Physics: Condensed Matter 32, 153003 (2020) **Review**
14. L. Rickert, T. Kupko, S. Rodt, S. Reitzenstein, und **T. Heindel**: *Optimized Designs for Telecom-Wavelength Quantum Light Sources Based on Hybrid Circular Bragg Gratings*, Optics Express 27, 36824 (2019)
15. L. Bremer, S. Fischbach, S.-I. Park, S. Rodt, J.-D. Song, **T. Heindel**, S. Reitzenstein: *Cesium-Vapor-Based Delay of Single Photons Emitted by Deterministically Fabricated Quantum Dot Microlenses*, Advanced Quantum Technologies, DOI:10.1002/qute.201900071 (2019)
16. M. von Helversen, J. Böhm, M. Schmidt, M. Gschrey, J,-H, Schulze, A. Strittmatter, S. Rodt, J. Beyer, **T. Heindel**, and S. Reitzenstein: *Quantum Metrology of Solid-State Single-Photon Sources using Photon-Number-Resolving Detectors*, New Journal of Physics 21, 035007 (2019)
17. M. Schmidt, M. v. Helversen, M. López, F. Gericke, E. Schlottmann, **T. Heindel**, S. Kück, S. Reitzenstein, und J. Beyer: *Photon-Number-Resolving Transition-Edge Sensors for the Metrology of Quantum Light Sources*, Journal of Low Temperature Physics https://doi.org/10.1007/s10909-018-1932-1 (2018)
18. P. Schnauber, J. Schall, S. Bounouar, T. Höhne, S.-I. Park, G.-H. Ryu, **T. Heindel**, S. Burger, J.-D. Song, S. Rodt, and S. Reitzenstein: *Deterministic Integration of Quantum Dots into on-Chip Multimode Interference Beamsplitters Using in Situ Electron Beam Lithography*, Nano Letters 18, 2336-2342 (2018)
19. A. Schlehahn, S. Fischbach, R. Schmidt, A. Kaganskiy, S. Strittmatter, S. Rodt, **T. Heindel**, and S. Reitzenstein: *A stand-alone fiber-coupled single-photon source*, Scientific Reports 8, 1340 (2018)
20. A. Kaganskiy, F. Gericke, T. Heuser, **T. Heindel**, X. Porte, and S. Reitzenstein: *Micropillars with a controlled number of site-controlled quantum dots*, Applied Physics Letters 112, 071101 (2018)
21. A. Kaganskiy, S. Fischbach, A. Strittmatter, S. Rodt, **T. Heindel**, and S. Reitzenstein: *Enhancing the photon-extraction efficiency of site-controlled quantum dots by deterministically fabricated microlenses*, Optics Communications 413, 162–166 (2018)
22. F. Gericke, M. Segnon, M. v. Helversen, C. Hopfmann, **T. Heindel**, C. Schneider, S. Höfling, M. Kamp, A. Musiał, X. Porte, C. Gies, and S. Reitzenstein: *Controlling the gain contribution of background emitters in few-quantum-dot microlasers*, New Journal of Physics 20, 023036 (2018).
23. **T. Heindel**, A. Thoma, I. Schwartz, E. R. Schmidgall, L. Gantz, D. Cogan, M. Strauß, P. Schnauber, M. Gschrey, J.-H. Schulze, A. Strittmatter, S. Rodt, D. Gershoni, and S. Reitzenstein: *Accessing the dark exciton spin in deterministic quantum-dot microlenses*, APL Photonics 2, 121303 (2017)
24. S. Fischbach, A. Kaganskiy, E. B. Y. Tauscher, F. Gericke, A. Thoma, R. Schmidt, A. Strittmatter, **T. Heindel**, S. Rodt, und S. Reitzenstein: *Efficient single-photon source based on a deterministically fabricated single quantum dot - microstructure with backside gold mirror*, Applied Physics Letters 111, 011106 (2017)
25. S. Fischbach, A. Schlehahn, A. Thoma, N. Srocka, T. Gissibl, S. Ristok, S. Thiele, A. Kaganskiy, A. Strittmatter, **T. Heindel**, S. Rodt, A. Herkommer, H. Giessen, und S. Reitzenstein: *Single Quantum Dot with Microlens and 3D-Printed Micro-objective as Integrated Bright Single-Photon Source*, ACS Photonics 4 (6), 1327–1332 (2017)
26. C. Gies, F. Gericke, P. Gartner, S. Holzinger, C. Hopfmann, **T. Heindel**, J. Wolters, C. Schneider, M. Florian, F. Jahnke, S. Höfling, M. Kamp, und S. Reitzenstein: *Strong light-matter coupling in the presence of lasing*, Physical Review A 96, 023806 (2017)

27. P. Munnelly, **T. Heindel**, A. Thoma, M. Kamp, S. Höfling, C. Schneider, und S. Reitzenstein: *Electrically Tunable Single-Photon Source Triggered by a Monolithically Integrated Quantum Dot Microlaser*, ACS Photonics 4 (4), 790-794 (2017)
28. **T. Heindel**, A. Thoma, M. von Helversen, M. Schmidt, A. Schlehahn, M. Gschrey, P. Schnauber, J.-H. Schulze, A. Strittmatter, J. Beyer, S. Rodt, A. Carmele, A. Knorr, und S. Reitzenstein: *A bright triggered twin-photon source in the solid state*, Nature Communications 8, 14870 (2017)
29. P. Munnelly, B. Lingnau, M. M. Karow, **T. Heindel**, M. Kamp, S. Höfling, K. Lüdge, C. Schneider, und S. Reitzenstein: *On-chip optoelectronic feedback in a micropillar laser-detector assembly*, Optica 4 (3), 303-306 (2017)
30. V. A. Gaisler. I. A. Derebezov, A. V. Gaisler, D. V. Dmitriev, A. I. Toropov, S. Fischbach, A. Schlehahn, A. Kaganskiy, **T. Heindel**, S. Bounouar, S. Rodt, und S. Reitzenstein: *Hybrid microcavity for superminiature single quantum dot-based emitters*, Optoelectronics, Instrumentation and Data Processing 53, 178 (2017)
31. A. Thoma, P. Schnauber, J. Böhm, M. Gschrey, J.-H. Schulze, A. Strittmatter, S. Rodt, **T. Heindel**, und S. Reitzenstein: *Two-photon interference from remote deterministic quantum dot microlenses*, Applied Physics Letters 110, 011104 (2017)
32. A. Schlehahn, A. Thoma, P. Munnelly, M. Kamp, S. Höfling, **T. Heindel**, C. Schneider, und S. Reitzenstein: *An electrically driven cavity-enhanced source of indistinguishable photons with 61% overall efficiency*, APL Photonics 1, 011301 (2016)
33. M. M. Karow, P. Munnelly, **T. Heindel**, M. Kamp, S. Höfling, C. Schneider, und S. Reitzenstein: *On-chip light detection using monolithically integrated quantum dot micropillars*, Applied Physics Letters 108, 081110 (2016)
34. A. Thoma, P. Schnauber, M. Gschrey, M. Seifried, J. Wolters, J. -H. Schulze, A. Strittmatter, S. Rodt, A. Carmele, A. Knorr, **T. Heindel**, und S. Reitzenstein: *Exploring Dephasing of a Solid-State Quantum Emitter via Time- and Temperature- Dependent Hong-Ou-Mandel Experiments*, Physical Review Letters 116, 033601 (2016)
35. A. Schlehahn, R. Schmidt, C. Hopfmann, J. -H. Schulze, A. Strittmatter, **T. Heindel**, L. Gantz, E. R. Schmidgall, D. Gershoni, und S. Reitzenstein: *Generating single photons at GHz modulation-speed using electrically controlled quantum dot microlenses*, Applied Physics Letters 108, 021104 (2016)
36. P. Schnauber, A. Thoma, C. V. Heine, A. Schlehahn, L. Gantz, M. Gschrey, R. Schmidt, C. Hopfmann, B. Wohlfeil, J.-H. Schulze, A. Strittmatter, **T. Heindel**, S. Rodt, U. Woggon, D. Gershoni, und S. Reitzenstein: *Bright Single-Photon Sources Based on Anti-Reflection Coated Deterministic Quantum Dot Microlenses*, Technologies 4, 1 (2015)
37. P. Munnelly, **T. Heindel**, M. M. Karow, S. Hofling, M. Kamp, C. Schneider, und S. Reitzenstein: *A Pulsed Nonclassical Light Source Driven by an Integrated Electrically Triggered Quantum Dot Microlaser*, IEEE Journal of Selected Topics in Quantum Electronics 21, 681 (2015)
38. A. Schlehahn, M. Gaafar, M. Vaupel, M. Gschrey, P. Schnauber, J.-H. Schulze, S. Rodt, A. Strittmatter, W. Stolz, A. Rahimi-Iman, **T. Heindel**, M. Koch, und S. Reitzenstein: *Single-photon emission at a rate of 143 MHz from a deterministic quantum-dot microlens triggered by a mode-locked vertical-external-cavity surface-emitting laser*, Applied Physics Letters 107, 041105 (2015)
39. M. Gschrey, A. Thoma, P. Schnauber, M. Seifried, R. Schmidt, B. Wohlfeil, L. Krüger, J.-H. Schulze, **T. Heindel**, S. Burger, F. Schmidt, A. Strittmatter, S. Rodt, und S. Reitzenstein: *Highly indistinguishable photons from deterministic quantum-dot microlenses utilizing three- dimensional in situ electron-beam lithography*, Nature Communications 6, 7662 (2015)
40. A. Kaganskiy, M. Gschrey, A. Schlehahn, R. Schmidt, J.-H. Schulze, **T. Heindel**, A. Strittmatter, S. Rodt, und S. Reitzenstein: *Advanced in-situ electron-beam lithography for deterministic nanophotonic device processing*, Review of Scientific Instruments 86, 073903 (2015)
41. A. Musiał, C. Hopfmann, **T. Heindel**, C. Gies, M. Florian, H. A. M. Leymann, A. Foerster, C. Schneider, F. Jahnke, S. Höfling, M. Kamp, und S. Reitzenstein: *Correlations between axial and lateral emission of coupled quantum dot–micropillar cavities*, Physical Review B 91, 205310 (2015)
42. E. R. Schmidgall, I. Schwartz, D. Cogan, L. Gantz, **T. Heindel**, S. Reitzenstein, und D. Gershoni: *All-Optical Depletion of Dark Excitons from a Semiconductor Quantum Dot*, Applied Physics Letters 106, 193101 (2015)
43. A. Schlehahn, L. Krüger, M. Gschrey, J.-H. Schulze, S. Rodt, A. Strittmatter, **T. Heindel**, und S. Reitzenstein: *Operating single quantum emitters with a compact Stirling cryocooler*, Review of Scientific Instruments 86, 013113 (2015)

44. M. Rau, **T. Heindel**, S. Unsleber, T. Braun, J. Fischer, S. Frick, S. Nauerth, C. Schneider, G. Vest, S. Reitzenstein, M. Kamp, A. Forchel, S. Höfling, und H. Weinfurter: *Free space quantum key distribution over 500 meters using electrically driven quantum dot single-photon sources - A proof of principle experiment*, New Journal of Physics 16, 043003 (2014)
45. M. Gschrey, F. Gericke, A Schüssler, R. Schmidt, J. -H. Schulze, **T. Heindel**, S. Rodt, A Strittmatter, und S. Reitzenstein: *In situ electron-beam lithography of deterministic single-quantum-dot mesa-structures using low-temperature cathodoluminescence spectroscopy*, Applied Physics Letters 102, 251113 (2013)
46. W. Unrau, D. Quandt, J. -H. Schulze, **T. Heindel**, T. D. Germann, O. Hitzemann, A Strittmatter, S. Reitzenstein, U. W. Pohl, und D. Bimberg: *Electrically driven single photon source based on a site-controlled quantum dot with self-aligned current injection*. Applied Physics Letters 101, 211119 (2012)
47. **T. Heindel**, C.A. Kessler, M. Rau, C. Schneider, M. Fürst, F. Hargart, W.M. Schulz, M. Eichfelder, R. Roßbach, S. Nauerth, M. Lermer, H. Weier, M. Jetter, M. Kamp, S. Reitzenstein, S. Hofling, P. Michler, H. Weinfurter, und A. Forchel: *Quantum key distribution using quantum dot single-photon emitting diodes in the red and near infrared spectral range*, New Journal of Physics 14, 083001 (2012)
48. C. Schneider, **T. Heindel**, A. Huggenberger, T.A. Niederstrasser, S. Reitzenstein, A. Forchel, S. Höfling, und M. Kamp: *Microcavity enhanced single photon emission from an electrically driven site-controlled quantum dot*, Applied Physics Letters 100, 091108 (2012)
49. S. Reitzenstein, **T. Heindel**, C. Kistner, F. Albert, T. Braun, C. Hopfmann, P. Mrowinski, M. Lermer, C. Schneider, S. Höfling, M. Kamp, und A. Forchel: *Electrically Driven Quantum Dot Micropillar Light Sources*, IEEE Journal of Selected Topics in Quantum Electronics 17, 1670 (2011)
50. A. Huggenberger, C. Schneider, C. Drescher, S. Heckelmann, **T. Heindel**, S. Reitzenstein, M. Kamp, S. Höfling, L. Worschech, und A. Forchel: *Site-controlled In(Ga)As/GaAs quantum dots for integration into optically and electrically operated devices*, Journal of Crystal Growth 323, 194 (2011)
51. F. Albert, T. Braun, **T. Heindel**, C. Schneider, S. Reitzenstein, S. Höfling, L. Worschech, und A. Forchel: *Whispering gallery mode lasing in electrically driven quantum dot micropillars*, Applied Physics Letters 97, 101108 (2010)
52. J. Heinrich, A. Huggenberger, **T. Heindel**, S. Reitzenstein, S. Höfling, L. Worschech, und A. Forchel: *Single photon emission from positioned GaAs/AlGaAs photonic nanowires*, Applied Physics Letters 96, 211117 (2010)
53. F. Albert, S. Stobbe, C. Schneider, **T. Heindel**, S. Reitzenstein, S. Höfling, P. Lodahl, L. Worschech, und A. Forchel: *Quantum efficiency and oscillator strength of site-controlled InAs quantum dots*, Applied Physics Letters 96, 151102 (2010)
54. Peijun Yao, P. K. Pathak, E. Illes, S. Hughes, S. Münch, S. Reitzenstein, P. Franeck, A. Löffler, **T. Heindel**, S. Höfling, L. Worschech, und A. Forchel: *Nonlinear photoluminescence spectra from a quantum-dot-cavity system: Interplay of pump-induced stimulated emission and anharmonic cavity QED*, Physical Review B 81, 033309 (2010)
55. **T. Heindel**, C. Schneider, M. Lermer, S. H. Kwon, T. Braun, S. Reitzenstein, S. Höfling, M. Kamp, und A. Forchel: *Electrically driven quantum dot-micropillar single photon source with 34% overall efficiency*, Applied Physics Letters 96, 011107 (2010)
56. C. Schneider, A. Huggenberger, T. Sünner, **T. Heindel**, M. Strauss, S. Göpfert, P. Weinmann, S. Reitzenstein, L. Worschech, M. Kamp, S. Höfling, und A. Forchel: *Single site-controlled In(Ga)As/GaAs quantum dots: growth, properties and device integration*, Nanotechnology 20, 434012 (2009)
57. S. Münch, S. Reitzenstein, P. Franeck, A. Löffler, **T. Heindel**, S. Höfling, L. Worschech, und A. Forchel: *The role of optical excitation power on the emission spectra of a strongly coupled quantum dot-micropillar system*, Optics Express 17, 12821 (2009)
58. C. Schneider, **T. Heindel**, A. Huggenberger, P. Weinmann, C. Kistner, M. Kamp, S. Reitzenstein, S. Höfling, und A. Forchel: *Single photon emission from a site-controlled quantum dot-micropillar cavity system*, Applied Physics Letters 94, 111111 (2009)
59. C. Kistner, **T. Heindel**, C. Schneider, A. Rahimi-Iman, S. Reitzenstein, S. Höfling, und A. Forchel: *Demonstration of strong coupling via electro-optical tuning in high-quality QD-micropillar systems*, Optics Express 16, 15006 (2008)

60. S. Reitzenstein, **T. Heindel**, C. Kistner, A. Rahimi-Iman, C. Schneider, S. Höfling, und A. Forchel: *Low threshold electrically pumped quantum dot-micropillar lasers*, Applied Physics Letters 93, 061104 (2008)

Book Chapters

- S. Rodt, P.-I. Schneider, L. Zschiedrich, **T. Heindel**, S. Bounouar, M. Kantner, T. Koprucki, U. Bandelow, S. Burger and S. Reitzenstein: *Deterministic Quantum Devices for Optical Quantum Communication*, in Book „Semiconductor Nanophotonics – Materials, Models, Devices", Springer 2020, Online ISBN: 978-3-030-35656-9, edited by M. Kneissl, A. Knorr, S. Reitzenstein
- U.W. Pohl, A. Strittmatter, A. Schliwa, M. Lehmann, T. Niermann, **T. Heindel**, S. Reitzenstein, M. Kantner, U. Bandelow, T. Koprucki, H.-J. Wünsche: *Stressor-Induced Site Control of Quantum Dots for Single-Photon Sources*, in Book „Semiconductor Nanophotonics – Materials, Models, Devices", Springer 2020, Online ISBN: 978-3-030-35656-9, edited by M. Kneissl, A. Knorr, S. Reitzenstein
- **T. Heindel**, S. Rodt, und S. Reitzenstein: *Single-Photon Sources Based on Deterministic Quantum-Dot Microlenses*, in Book „Quantum Dots for Quantum Information Technologies", pages 199 - 232, Springer 2017, Online ISBN: 978-3-319-56378-7, edited by P. Michler

Patents

- A. Schlehahn, **T. Heindel**, S. Rodt, und S. Reitzenstein:
  Optoelectronic Device (EP3088927 A1, US9599782 B2, 2017)

Selected Conference Paper

- Lucas Rickert, Timm Gao, Felix Urban, Jan Große, Nicole Srocka, Sven Rodt, Anna Musiał, Kinga Żołnacz, Paweł Mergo, Kamil Dybka, Wacław Urbańczyk, Grzegorz Sęk, Sven Burger, Stephan Reitzenstein, **T. Heindel**: A Plug&Play Telecom-Wavelength Single-Photon Source for Quantum Key Distribution, Quantum 2.0 2022, Paper QTu4C.6
- L. Rickert, T. Gao, F. Urban, J. Große, N. Srocka, S. Rodt, A. Musiał, K. Żołnacz, P. Mergo, K. Dybka, W. Urbańczyk, G. Sęk, S. Burger, S. Reitzenstein, **T. Heindel**: A Quantum Key Distribution Testbed Using Plug&Play Telecom-Wavelength Single-Photons, Quantum Information and Measurement (QIM) Conference 2022, DOI:10.1364/QIM.2021.M2C.1
- **T. Heindel**, A. Thoma, M. von Helversen, M. Schmidt, A. Schlehahn, M. Gschrey, P. Schnauber, J.-H. Schulze, A. Strittmatter, J. Beyer, S. Rodt, A. Carmele, A. Knorr, und S. Reitzenstein: A bright triggered twin-photon source in the solid state, Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC) 2017, DOI:10.1109/CLEOE-EQEC.2017.8087338
- **T. Heindel**, M. Rau, S. Unsleber, T. Braun, J. Fischer, C. Schneider, S. Frick, S. Nauerth, G. Vest, S. Reitzenstein, A. Forchel, S. Höfling, H. Weinfurter, und M. Kamp: *Free Space Quantum Key Distribution over 500 Meters using Electrically Triggered Quantum Dot Single-Photon Sources* Quantum Information and Measurement, QW3A. 4, DOI:10.1364/QIM.2014.QW3A.4
- **T. Heindel**, C. Schneider, M. Lermer, S. Höfling, S. Reitzenstein, L. Worschech, und A. Forchel: *Highly efficient electrically triggered quantum dot micropillar single photon source*, Journal of Physics Conference Series 09/2010; 245(1). DOI:10.1088/1742-6596/245/1/012005

Presented Conference Talks

Invited Talks (Conferences/Workshops)

1. *Engineered Solid-State Quantum-Light Sources for Quantum Networking*, **Quantum Systems in Noronha - QuSys 2023**, Fernando de Noronha, Brazil, 12.-17.11.2023
2. **Keynote:** *Quantum Materials for Quantum Networking*, 8th Polish Conference **"Graphene and other 2D materials"**, Toruń, Poland, 24.-27.09.2023
3. *Quantum Networking using Engineered Solid-State Quantum-Light Sources*, **NOEKS16**, Faueninsel, Germany, 17.-20.09.2023
4. *Engineered Solid-State Quantum-Light Sources for Quantum Networking*, **META 2023**, Paris, France, 18.-21.07.2023

5. *Towards Quantum Networks using Engineered Solid-State Quantum-Light Sources*, **International Workshop on Advances in Photonics in Semiconductor Quantum Systems IWAPSQS**, Würzburg, 25.10.2022
6. *Making Single-Photon QKD Plug&Play*, **1st International Workshop on Telecom Quantum Dot Non-classical Light Sources for Quantum Communication QDotCom 2022**, **Wroclaw University of Science and Technology**, Poland, 18.05.2022
7. *Semiconductor Nanophotonics for Applications in Photonic Quantum Technologies*, **Photonics Days Berlin-Brandenburg 2021**, Berlin-Adlershof, 05.10.2021
8. *Boosting Single-Photon Quantum Key Distribution,* **DPG Lecture-Series** "Semiconductors for Breakfast", Online, Germany, 16.04.2020
9. *Engineered Solid-State Quantum-Light Sources for Quantum Communication*, Workshop on Theoretical and Numerical Tools for Nanophotonics **TNTN2020**, Berlin, Germany, 12.-14.09.2020
10. *Single-Photon QKD using Engineered Solid-State Quantum-Light Sources*, **9th French-Korean-German Workshop**, Würzburg, Germany, 03.12.2019
11. *Single-Photon QKD using Engineered Solid-State Quantum-Light Sources*, **Symposium at the Wroclaw University of Science and Technology**, Poland, 12.11.2019
12. *Quantum Communication using Engineered Solid-State Quantum-Light Sources*, **International Symposium "Semiconductor Nanophotonics" by CRC787**, TU Berlin, Germany, 04./05.11.2019
13. *Towards Quantum Communication Networks Exploiting Solid-State Quantum-Light Sources,* **DPG Fall Meeting** (SAMOP, SKM, and SMuK), Main Talk, Freiburg, Germany, 23.-27.09.2019
14. *Towards Quantum Communication Networks Exploiting Solid-State Quantum-Light Sources*, **METANANO 2019**, St. Petersburg, Russia, 15.07.2019
15. *Towards Quantum Communication Networks Exploiting Solid-State Quantum-Light Sources*, **DPG Spring Meeting (SKM)**, Main Talk HL 26.5, Regensburg, Germany, 03.04.2019
16. *Accessing the Dark Exciton Spin Qubit in Deterministic Quantum-Dot Microlenses*, International Conference on the Physics of Semiconductors **ICPS 2018**, Montpellier, France, 08/2018
17. *Exploiting the Bright and the Dark Side of Deterministic Solid-State Quantum-Light Sources*, **DPG Spring Meeting (SKM)**, Main Talk HL 25.7, Berlin, Germany, March 14, 2018
18. *Quantum Optics with Deterministic Quantum Dot Microlenses*, **Mauterndorf 2016** - 19th International Winterschool, Mauterndorf, Austria, February 26, 2016
19. *Exploring the Time-Dependent Coherence of a Quantum Emitter via Two-Photon Interference*, **5th French-Korean-German Workshop**, Würzburg, Germany, December 15, 2015
20. *Advanced Quantum Dot Devices* - Enabling On-Chip Quantum Optics and Highly Indistinguishable Photons, Energy, Material & Nanotechnology **EMN Fall Meeting**, Las Vegas, USA, November 18, 2015
21. *Quantum Optics with Deterministic Quantum Dot Microlenses*, **International Symposium "Semiconductor Nanophotonics" by CRC787**, TU Berlin, Germany, 02./03.11.2015
22. *Quantum Light from Deterministic Quantum-Dot Devices*, **4th Korean-German-French Workshop**, Gangneung, Southkorea, October 13, 2014

Invited (Gradschools/Seminars)

- **3 Lectures** – **VCQ & AppQInfo Summer School**, Vienna, 2022
- **1 Lecture** - **2nd Summer school QUDOT-TECH**, Marie Curie Innovative Training Network, 2021
- **1 Lecture** - **Berlin-wide Graduate School BOS.QT**, Berlin, Germany, 2020
- **3 Lectures** - **School of Nanophotonics (CRC787)**, Graal-Müritz, Germany, 2019/2017/2015
- **7 Seminar Talks** (Technion, Haifa, Israel; University of Magdeburg, Oldenburg, Würzburg)

Contributed Talks

- T. Gao, M. von Helversen, C. Anton-Solanas, C. Schneider, **T. Heindel**, *Employing Atomically-Thin Single-Photon Sources in Quantum Communication*, Talk ThS11_04, Single Photon Workshop SPW2022, Seoul, Südkorea, 03. November 2022

- T. Gao, L. Rickert, F. Urban, J. Große, N. Srocka, S. Rodt, A. Musiał, K. Żołnacz, P. Mergo, K. Dybka, W. Urbańczyk, G. Sęk, S. Burger, S. Reitzenstein, **T. Heindel**, *A Quantum Key DistributionTestbed using a Plug&Play Telecom-Wavelength Single-Photon Source*, Talk MonS2_03, Single Photon Workshop SPW2022, Seoul, Südkorea, 31. Oktober 2022
- T. Kupko, L. Rickert, M. v. Helversen, A. Schlehahn, S. Rodt, C. Schneider, S. Höfling, M. Rau, H. Weinfurter, S. Reitzenstein, and **T. Heindel**, *Single-Photon QKD using Engineered Solid-State Quantum-Light Sources*, Single Photon Workshop 2019, Milano, Italy, 23.10.2019
- T. Kupko, L. Rickert, M. v. Helversen, A. Schlehahn, S. Rodt, C. Schneider, S. Höfling, S. Reitzenstein, and **T. Heindel**, *Towards Quantum Communication Networks Exploiting Solid-State Quantum-Light Sources*, 2nd International Symposium on Single Photon based Quantum Technologies, Berlin-Adlershof, Germany, 23.05.2019
- **T. Heindel**, A. Thoma, M. v. Helversen, M. Schmidt, A. Schlehahn, M. Gschrey, P. Schnauber, J.-H. Schulze, A. Strittmatter, J. Beyer, S. Rodt, A. Carmele, A. Knorr, and S. Reitzenstein, *A Bright Triggered Twin-Photon Source in the Solid State*, 1st International Symposium on Single Photon based Quantum Technologies, Berlin-Adlershof, Germany, 31.05.2018
- **T. Heindel**, A. Thoma, M. v. Helversen, M. Schmidt, A. Schlehahn, M. Gschrey, P. Schnauber, J.-H. Schulze, A. Strittmatter, J. Beyer, S. Rodt, A. Carmele, A. Knorr, and S. Reitzenstein, *A Bright Triggered Twin-Photon Source in the Solid State*, OPON 2018, Münster, Germany, 16.02.2018
- **T. Heindel**, A. Thoma, M. v. Helversen, M. Schmidt, A. Schlehahn, M. Gschrey, P. Schnauber, J.-H. Schulze, A. Strittmatter, J. Beyer, S. Rodt, A. Carmele, A. Knorr, and S. Reitzenstein, *A Bright Triggered Twin-Photon Source in the Solid State*, CLEO/Europe-EQEC 2017, Munich, Germany, 28.06.2017
- **T. Heindel**, A. Thoma, M. v. Helversen, M. Schmidt, A. Schlehahn, M. Gschrey, P. Schnauber, J.-H. Schulze, A. Strittmatter, J. Beyer, S. Rodt, A. Carmele, A. Knorr, and S. Reitzenstein, *A Bright Triggered Twin-Photon Source in the Solid State*, DPG Spring Meeting (SKM), HL 49.1, Dresden, Germany, 22.03.2017
- **T. Heindel**, A. Thoma, M. v. Helversen, M. Schmidt, A. Schlehahn, M. Gschrey, P. Schnauber, J.-H. Schulze, A. Strittmatter, J. Beyer, S. Rodt, A. Carmele, A. Knorr, and S. Reitzenstein, *A deterministic twin-photon source in the solid-state*, DPG Spring Meeting (SAMOP), Q 12.7, Mainz, Germany, 06.03.2017
- **T. Heindel**, A. Schlehahn, A. Thoma, P. Munnelly, M. Kamp, S. Höfling, C. Schneider, and S. Reitzenstein, *An electrically driven cavity-enhanced source of indistinguishable photons with 61% overall efficiency*, DPG Spring Meeting (SKM), HL 5.4, Regensburg, Germany, 07.03.2016
- **T. Heindel**, A. Schlehahn, M. Gaafar, M. Vaupel, M. Gschrey, P. Schnauber, J.-H. Schulze, S. Rodt, A. Strittmatter, W. Stolz, A. Rahimi-Iman, M. Koch, und S. Reitzenstein, *Deterministic quantum dot single-photon source triggered by a frequency-doubled mode-locked VECSEL at 500 MHz*, Single Photon Workshop 2015 (SPW2015), Genf (Schweiz), 13.-17.07.2015
- **T. Heindel**, A. Thoma, E. Schmidgall, L. Gantz, I. Schwartz, M. Gschrey, P. Schnauber, J.-H. Schulze, A. Strittmatter, S. Rodt, D. Gershoni, and S. Reitzenstein, *Toward long-lived excitonic qubits in deterministic quantum-dot microlenses*, DPG Spring Meeting (SKM), HL 109.7, Berlin, Germany, 20.03.2015
- **T. Heindel**, L. Krüger, M. Gschrey, M. Seifried, R. Schmidt, J.-H. Schulze, S. Rodt, A. Strittmatter, and S. Reitzenstein, *Indistinguishable Photons Generated from Deterministic Quantum Light Sources Fabricated by In-Situ Electron-Beam Lithography*, DPG Spring Meeting (SKM), HL 54.3, Dresden, Germany, 01.04.2014
- **T. Heindel**, M. Rau, S. Unsleber, T. Braun, J. Fischer, C. Schneider, S. Frick, S. Nauerth, G. Vest, S. Reitzenstein, A. Forchel, S. Höfling, H. Weinfurter, and M. Kamp: *Free Space Quantum Key Distribution over 500 Meters using Electrically Triggered Quantum Dot Single-Photon Sources*. Quantum Information and Measurement, Berlin, Germany, 19.03.2014
- **T. Heindel**, E. Stock, C. Hopfmann, F. Albert, M. Lermer, C. Schneider, S. Höfling, A. Forchel, M Kamp, and S. Reitzenstein, *On-Chip Quantum Optics with Quantum Dot Microcavities*, DPG Spring Meeting (SKM), HL 82.6, Regensburg, Germany, 20.03.2013
- **T. Heindel**, C. Schneider, M. Lermer, S. H. Kwon, T. Braun, S. Reitzenstein, S. Höfling, M. Kamp and A. Forchel: *Highly efficient electrically driven quantum dot micropillar single photon sources*, 6th International Conference on Quantum Dots 2010 (QD2010), Nottingham, England, 26.-30.04.2010