

List of Publications

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[§]corresponding author, *equal contribution

I. Publications in peer-reviewed journals

1. **F. Tabataba-Vakili**[§], L. Krelle*, L. Husel, H. P. G. Nguyen, Z. Li, I. Bilgin, K. Watanabe, T. Taniguchi, A. Högele[§], Metasurface of strongly coupled excitons and plasmonic arrays, *Nano Lett.* **24**, 10090 (2024).
2. **F. Tabataba-Vakili**[§], H. P. G. Nguyen, A. Rupp, K. Mosina, A. Papavasileiou, K. Watanabe, T. Taniguchi, P. Maletinsky, M. M. Glazov, Z. Sofer, A. S. Baimuratov[§], and A. Högele[§], Doping-control of excitons and magnetism in few-layer CrSBr, *Nat. Commun.* **15**, 4735 (2024).
3. M. L. Drechsler^{*§}, L. Sung-Min Choi*, **F. Tabataba-Vakili***, F. Nippert, A. Koulas-Simos, M. Lorke, S. Reitzenstein, B. Alloing, P. Boucaud, M. R. Wagner, and F. Jahnke, Multimode Emission from GaN Microdisk Lasers, *Laser Photonics Rev.* 2400221 (2024).
4. Z. Li*, **F. Tabataba-Vakili**[§], S. Zhao*, A. Rupp, I. Bilgin, Z. Herdegen, B. März, K. Watanabe, T. Taniguchi, G. R. Schleder, A. S. Baimuratov, E. Kaxiras, K. Müller-Caspary, and A. Högele[§], Lattice reconstruction in MoSe₂-WSe₂ heterobilayers synthesized by chemical vapor deposition, *Nano Lett.* **23**, 4160 (2023).
5. M. Gromovyi[§], M. El Kurdi, X. Checoury, E. Herth, **F. Tabataba-Vakili**, N. Bhat, A. Courville, F. Semond, and P. Boucaud[§], Low-loss GaN-on-insulator platform for integrated photonics, *Opt. Express* **30**, 20737 (2022).
6. H. Zi, W. Y. Fu, **F. Tabataba-Vakili**, H. Kim-Chauveau, E. Frayssinet, P. De Mierry, B. Damilano, J-Y. Duboz, P. Boucaud, F. Semond, and H. W. Choi[§], Whispering-gallery mode InGa_N microdisks on GaN substrates, *Opt. Express* **29**, 21280 (2021).

7. **F. Tabataba-Vakili**, C. Brimont, B. Alloing, B. Damilano, L. Doyennette, T. Guillet, M. El Kurdi, S. Chenot, V. Brändli, E. Frayssinet, J.-Y. Duboz, F. Semond, B. Gayral, and P. Boucaud[§], Analysis of low-threshold optically pumped III-nitride microdisk lasers, *Appl. Phys. Lett.* **117**, 121103 (2020).
8. **F. Tabataba-Vakili**, B. Alloing, B. Damilano, H. Souissi, C. Brimont, L. Doyennette, T. Guillet, X. Checoury, M. El Kurdi, S. Chenot, E. Frayssinet, J.-Y. Duboz, F. Semond, B. Gayral, and P. Boucaud[§], Monolithic integration of ultraviolet microdisk lasers into photonic circuits in a III-nitride-on-silicon platform, *Opt. Lett.* **45**, 4276 (2020).
9. **F. Tabataba-Vakili**, L. Doyennette, C. Brimont, T. Guillet, S. Rennesson, B. Damilano, E. Frayssinet, J.-Y. Duboz, X. Checoury, S. Sauvage, M. El Kurdi, F. Semond, B. Gayral, and P. Boucaud[§], Demonstration of critical coupling in an active III-nitride microdisk photonic circuit on silicon, *Sci. Rep.* **9**, 18095 (2019).
10. **F. Tabataba-Vakili**, S. Rennesson, B. Damilano, E. Frayssinet, J.-Y. Duboz, F. Semond, I. Roland, B. Paulillo, R. Colombelli, M. El Kurdi, X. Checoury, S. Sauvage, L. Doyennette, C. Brimont, T. Guillet, B. Gayral, and P. Boucaud[§], III-nitride on silicon electrically injected microrings for nanophotonic circuits, *Opt. Express* **27**, 11800 (2019).
11. **F. Tabataba-Vakili**, L. Doyennette, C. Brimont, T. Guillet, S. Rennesson, E. Frayssinet, B. Damilano, J.-Y. Duboz, F. Semond, I. Roland, M. El Kurdi, X. Checoury, S. Sauvage, B. Gayral, and P. Boucaud[§], Blue Microlasers Integrated on a Photonic Platform on Silicon, *ACS Photonics* **5**, 3643 (2018).
12. **F. Tabataba-Vakili**, I. Roland, T.-M. Tran, X. Checoury, M. El Kurdi, S. Sauvage, C. Brimont, T. Guillet, S. Rennesson, J.-Y. Duboz, F. Semond, B. Gayral, and P. Boucaud[§], Q factor limitation at short wavelength (around 300 nm) in III-nitride-on-silicon photonic crystal cavities, *Appl. Phys. Lett.* **111**, 131103 (2017).
13. **F. Tabataba-Vakili**, T. Wunderer[§], M. Kneissl, Z. Yang, M. Teepe, M. Batres, M. Feneberg, B. Vancil, and N.M. Johnson, Dominance of radiative recombination from electron-beam-pumped deep-UV AlGaN multi-quantum-well heterostructures, *Appl. Phys. Lett.* **109**, 181105 (2016).
14. K. Bellmann[§], **F. Tabataba-Vakili**, T. Wernicke, M. Rychetsky, S. Kalinowski, G. Callsen, A. Hofmann, and M. Kneissl, Desorption induced GaN QDs on (0001) AlN by MOVPE, *Phys. Status Solidi RRL* **9**, 526 (2015).

II. Monographs

1. **F. Tabataba-Vakili**, III-nitrides on silicon: a platform for integrated photonics from the ultraviolet to the near-infrared, PhD thesis, Université Paris-Sacaly (2020).

III. Patents

1. **F. Tabataba-Vakili** and T. Wunderer. 2017. Vertical external cavity surface emitting laser utilizing an external micromirror array. US patent number US9780532B1, submitted 21 November 2016, and published 3 March 2017.

IV. Talks (invited, contributed, seminars, workshops)

1. *Flatlands beyond Graphene 2024*, Wroclaw, Poland, 09-13 September 2024.
2. *YRLGW24 - Young Research Leaders Group Workshop: Correlation and Topology in magnetic materials*, Wasem Kloster Engelthal, Ingelheim am Rhein, Germany, 16-18 July 2024 (invited).
3. *CRC 1238 Seminar*, Universität zu Köln, Cologne, Germany, 19 June 2024 (invited by Prof. E. Boquillon)
4. *1st International Workshop on CrSBr*, Garching, Germany, 3 June 2024 (co-organizer, invited by Dr. F. Dirnberger and Dr. N. Wilson).
5. *2D Seminar, AG Wurstbauer*, Universität Münster, Münster, Germany, 29 April 2024 (invited by Prof. U. Wurstbauer).
6. *Seminar at LENA, TU Braunschweig*, Braunschweig, Germany, 3 April 2024 (invited by Prof. U. Schlickum).
7. *MCQST START Fellowship Interview Day, IAS, Technische Universität München*, Garching, Germany, 21 February 2024 (invited).
8. *Engineered Quantum Matter Sub-Group, Walther-Schottky-Institute, Technische Universität München*, Garching, Germany, 13 February 2024 (invited by Dr. N. Wilson).
9. *TMD Meeting*, Technische Universität Dresden, Dresden, Germany, 24-25 January 2024.
10. *QM2PO 2023 - The International Workshop on Quantum Materials for 2D Photonics & Optoelectronics*, Singapore, 21-24 November 2023 (invited).
11. *Chair for Organic Semiconductors, Optical Nanostructures*, Universität Regensburg, Regensburg, Germany, 13 November 2023 (invited by Prof. J. Lupton).
12. *Institute of Applied Physics*, Technische Universität Dresden, Dresden, Germany, 9 November 2023 (invited by Prof. A. Chernikov).
13. *Flatlands beyond Graphene 2023*, Prague, Czech Republic, 25-29 September 2023.
14. *SPIE Optics & Photonics 2023*, San Diego, CA, USA, 20-24 August 2023 (invited).
15. *OECS18 – Optics of Excitons in Confined Systems*, Lecce, Italy, 12-16 June 2023.
16. *TMD Meeting*, LMU Munich, Munich, Germany 25-26 May 2023.
17. *IFW PhD Winter School*, Potsdam, Germany, 1-3 February 2023 (invited).
18. *TMD Meeting*, INSA Toulouse, Toulouse, France, 17-18 November 2022.
19. *IV. Physikalisches Institut*, Universität Göttingen, Göttingen, Germany, 7 October 2022 (invited by Prof. S. Mathias).
20. *Solid State and SFB 1073 Seminar*, Universität Göttingen, Göttingen, Germany, 15 July 2021 (invited by Prof. T. Weitz).
21. *Experimental Nanophysics and Photonics Group, Technische Universität Berlin (TU Berlin)*, Berlin, Germany, 6 January 2021 (invited by Prof. M. Kneissl).
22. *CNRS-CRHEA, Université Côte d'Azur*, Valbonne, France, 30 September 2020 (invited by Dr. P. Boucaud).
23. *Centre de Nanosciences et Nanotechnologies (C2N), CNRS, Université Paris-Saclay, Palaiseau, France*, 24 September 2020.

24. *Nanophotonics Group, Ludwig-Maximilians-Universität (LMU) München, Munich, Germany.* 7 September 2020 (invited by Prof. A. Högele).
25. *ICNS 13 - 13th International Conference on Nitride Semiconductors, Bellevue, WA, USA.* 7-12 July 2019.
26. *39ièmes Journées Nationales d'Optique Guidée (JNOG) 2019, Palaiseau, France.* 2-4 July 2019 (invited).
27. *Electronic Materials and Devices Laboratory, PARC, a Xerox Company, Palo Alto, CA, USA.* 9 May 2019 (invited by Dr. T. Wunderer).
28. *Solid State Lighting and Energy Electronics Center, University of California, Santa Barbara (UCSB), Santa Barbara, CA, USA.* 30 April 2019 (invited by Dr. B. Bonef).
29. *Semiconductor Lighting and Display Group, University of Hong Kong, Hong Kong.* 21 November 2018 (invited by Prof. H. W. Choi).
30. *International Workshop on Nitride Semiconductors 2018 (IWN 2018), Kanazawa, Japan.* 11-16 November 2018.
31. *CNRS-CRHEA, Université Côte d'Azur, Valbonne, France.* 11 October 2018 (invited by Dr. P. Boucaud).
32. *32nd Heimbach Workshop, AG Kneissl, Mansfeld, Germany.* 17-21 September 2018 (invited).
33. *DPG Spring Meeting 2018, Berlin, Germany.* 11 March - 16 March 2018.
34. *Photonics West 2018, San Francisco, CA, USA.* 27 January - 1 February, 2018.
35. *Experimental Sensing Group, Technische Universität Chemnitz, Chemnitz, Germany.* 31 May 2016 (invited by Prof. U. Schwartz).
36. *Quantum Dot and Photonic Nanostructures Group, Institut d'Électronique Fondamentale (IEF) CNRS-Université Paris-Sud, Orsay, France.* 25 May 2016 (invited by Dr. P. Boucaud).
37. *Nanophysics and Semiconductor Group, CEA-INAC, Grenoble, France.* 24 May 2016 (invited by Dr. B. Gayral).
38. *CNRS-CRHEA, Université Côte d'Azur, Valbonne, France.* 23 May 2016 (invited by Dr. J.-Y. Duboz).
39. *III-V Materials and Devices Group, Tyndall National Institute, Cork, Ireland.* 27 April 2016 (invited by Dr. B. Corbett).
40. *Experimental Nanophysics and Photonics Group, TU Berlin, Berlin, Germany.* 13 April 2016.
41. *Electronic Materials and Devices Laboratory, PARC, a Xerox Company, Palo Alto, CA, USA.* 23 March 2016.
42. *28th Heimbach Workshop, AG Kneissl, Mansfeld, Germany.* 8-12 September 2014.
43. *DPG Spring Meeting 2014, Dresden, Germany.* 30 March - 4 April 2014.
44. *Experimental Nanophysics and Photonics Group, TU Berlin, Berlin, Germany.* 30 October 2013.

V. Posters

1. 2D Materials Conference, attocube system AG, Haar, Germany, 3-7 June, 2024.
2. Young Semiconductor Forum, DPG Spring Meeting 2024, Berlin, Germany, 17-22 March, 2024.
3. Lavoisier Discussions Series: Quantum Emitters in 2D, Côte d'Azur, France, 9-11 January, 2023.
4. Bridging the Gap: Nano Meets Quantum – CeNS/MCQST Workshop, San Servolo, Italy, 19-22 September 2022.

5. ICSCE-11 – 11th International Conference on Spontaneous Coherence in Excitonic Systems, Burlington, VT, USA. 7-11 August 2022.
6. Munich Conference on Quantum Science and Technology 2022, Sonthofen, Germany. 4-6 July 2022.
7. Micro- and Nanophotonics Days 2019, Palaiseau, France. 20-21 November 2019.
8. ICPS 2018 - 34th International conference on the physics of semiconductors, Montpellier, France. 29 July - 3 August 2018.
9. ICNS 12 - 12th International Conference on Nitride Semiconductors, Strasbourg, France. 24 July - 28 July 2017.