

Artur Tuktamyshev

Università degli Studi di Milano-Bicocca



Artur Tuktamyshev is an assistant professor at the Materials Science Department of the University of Milano Bicocca (Italy), the main working place is the L-NESS center in Como (Italy) ([Bicocca-4MAT site](#)). His main expertise is the Molecular Beam Epitaxy of group IV and III-V semiconductor materials. Since his PhD in Materials Science and Nanotechnology received at the University of Milano Bicocca in 2020, he focused on the formation of III-As semiconductor quantum dots (QDs) for the application in the Quantum Information Technology including the growth of telecommunication wavelength InAs QDs on GaAs(111) platform.

Recent publications in the field of telecom-wavelength QDs:

- [1] A. Tuktamyshev, D. Lambardi, S. Vichi, F. Cesura, S. Cecchi, A. Fedorov, S. Bietti, S. Sanguinetti. **Local droplet etching of a vicinal InGaAs(111)A metamorphic layer.** *Applied Surface Science*. Accepted (2024). Preprint: [10.2139/ssrn.4780683](https://doi.org/10.2139/ssrn.4780683).
- [2] A. Tuktamyshev, S. Vichi, F. Cesura, A. Fedorov, G. Carminati, D. Lambardi, J. Pedrini, E. Vitiello, F. Pezzoli, S. Bietti, S. Sanguinetti. **Strain relaxation of InAs quantum dots on misoriented InAlAs(111) metamorphic substrates.** *Nanomaterials* **12**, 3571 (2022). DOI: [10.3390/nano12203571](https://doi.org/10.3390/nano12203571).
- [3] A. Tuktamyshev, S. Vichi, F. Cesura, A. Fedorov, S. Bietti, D. Chrastina, S. Tsukamoto, S. Sanguinetti. **Flat metamorphic InAlAs buffer layer on GaAs(111)A misoriented substrates by growth kinetics control.** *Journal of Crystal Growth* **600**, 126906 (2022). DOI: [10.1016/j.jcrysgro.2022.126906](https://doi.org/10.1016/j.jcrysgro.2022.126906).
- [4] A. Barbiero, A. Tuktamyshev, G. Pirard, J. Huwer, T. Müller, R. M. Stevenson, S. Bietti, S. Vichi, A. Fedorov, G. Bester, S. Sanguinetti, A. J. Shields. **Exciton fine structure in InAs quantum dots with cavity-enhanced emission at telecommunication wavelength and grown on a GaAs(111)A vicinal substrate.** *Physical Review Applied* **18**, 034081 (2022). DOI: [10.1103/PhysRevApplied.18.034081](https://doi.org/10.1103/PhysRevApplied.18.034081).
- [5] A. Tuktamyshev, A. Fedorov, S. Bietti, S. Vichi, K. D. Zeuner, K. D. Jöns, D. Chrastina, S. Tsukamoto, V. Zwiller, M. Gurioli, S. Sanguinetti. **Telecom-wavelength InAs QDs with low fine structure splitting grown by droplet epitaxy on GaAs(111)A vicinal substrates.** *Applied Physics Letters* **118**, 133102 (2021). DOI: [10.1063/5.0045776](https://doi.org/10.1063/5.0045776).