Academic CV

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Academic milestones and positions held (selected)

02/2016-present	Ass. Professor, IST Austria, AT
06/2012-01/2016	Group leader, Institute of Semiconductor and Solid State Physics (Head: Prof. Rastelli), Johannes Kepler University/Linz/AT
12/2010-05/2012	Group leader, Institute for Integrative Nanosciences (Head: Prof. Schmidt), IFW-Dresden/DE
12/2006-11/2010	Post-doc researcher, Laboratory of electronic transport and superconductivity, group of Dr. De Franceschi, CEA-Grenoble/FR
04/2008-05/2008	Research visitor in the group of Prof. Lieber, Harvard University/USA
2002-2006	Scientific Collaborator, Max-Planck Institute for Solid State Research (Head: Prof. Kern)
April 2006	PhD, University of Konstanz, DE
06/2001-05/2002	Research Assistant (Head: Dr. Falaras), Demokritos/Athens/GR

Main areas of research

Experimental condensed matter physics, Low temperature electronic transport through low dimensional structures, Hole spin physics, Hole spin-qubits, Spin-orbit interaction, Hybrid superconductor-semiconductor devices, Topological superconductivity, Andreev Physics, Majorana Physics

Research Achievements

10 most important publications

1. D. Jirovec, A. Hofmann, A. Ballabio, P. M. Mutter, G. Tavani, M. Botifoll, A. Crippa, J. Kukucka, O. Sagi, F. Martins, J. Saez-Mollejo, I. Prieto, M. Borovkov, J. Arbiol, D. Chrastina, G. Isella, and G. Katsaros, A singlet triplet hole spin qubit in planar Ge, preprint arXiv:2011.13755 (2020).

2. M. Valentini, F. Peñaranda, A. Hofmann, M. Brauns, R. Hauschild, P. Krogstrup, P. San-Jose, E. Prada, R. Aguado, and G. Katsaros, Non-topological zero bias peaks in full-shell nanowires induced by flux tunable Andreev states, preprint arXiv:2008.02348 (2020).

3. L. Vukušić, J. Kukučka, H. Watzinger, J. Milem, F. Schäffler, and G. Katsaros, Single-shot readout of hole spins in Ge, Nano Letters **18**, 7141 (2018), doi: 10.1021/acs.nanolett.8b03217

4. H. Watzinger, J. Kukučka, L. Vukušić, F. Gao, T. Wang, F. Schäffler, J. J. Zhang, and G. Katsaros, A germanium hole spin qubit, Nat. Commun. **9**, 3902 (2018), doi: 10.1038/s41467-018-06418-4

5. H. Watzinger, C. Kloeffel, L. Vukušić, M. D. Rossell, V. Sessi, J. Kukučka, R. Kirchschlager, E. Lausecker, A. Truhlar, M. Glaser, A. Rastelli, A. Fuhrer, D. Loss and G. Katsaros, Heavy hole states in Germanium hut wires, Nano Letters **16**, 6879 (2016), doi: 10.1021/acs.nanolett.6b02715

6. N. Ares, V. N. Golovach, G. Katsaros, M. Stoffel, F. Fournel, L. I. Glazman, O. G. Schmidt, and S. De Franceschi, On the nature of electrically tunable hole g-factors in quantum dots, Phys. Rev. Lett. **110**, 046602 (2013), doi: 10.1103/PhysRevLett.110.046602

7. E. J. H. Lee, X. Jiang, R. Aguado, G. Katsaros, C. M. Lieber, and S. De Franceschi, Zero-bias anomaly in a nanowire quantum dot coupled to superconductors, Phys. Rev. Lett. **109**, 186802 (2012), doi: 10.1103/PhysRevLett.109.186802

8. J. J. Zhang, G. Katsaros, F. Montalenti, D. Scopece, R. O. Rezaev, C. Mickel, B. Rellinghaus, L. Miglio, D. De Franceschi, A. Rastelli, and O. G. Schmidt, Monolithic growth of ultra-thin Ge nanowires on Si(001), Phys. Rev. Lett. **109**, 085502 (2012), doi: 10.1103/PhysRevLett.109.085502

9. G. Katsaros, V. N. Golovach, P. Spathis, N. Ares, F. Fournel, O. G. Schmidt, L. I. Glazman, and S. De Franceschi, Observation of spin selective tunnelling in SiGe nanocrystals, Phys. Rev. Lett. **107**, 246601 (2011), doi: 10.1103/PhysRevLett.107.246601

10. G. Katsaros, P. Spathis, M. Stoffel, F. Fournel, M. Mongillo, V. Bouchiat, F. Lefloch, A. Rastelli, O. G. Schmidt, and S. De Franceschi, Hybrid superconductor-semiconductor devices made from self-assembled SiGe nanocrystals on silicon, Nat. Nanotech. **5**, 458 (2010), doi: 10.1038/NNANO.2010.84

Most important other scientific/scholarly research achievements (selected)

1. **Awards - Calls for Professorships:** Elected member of the Young Academy of the Austrian Academy of Sciences (2015); W3 Professorship for Solid State Physics (Department Chair) at the Technical University of Dresden (2014) (declined)
2. **Research projects:** ERC Starting Grant (2013-18); FWF Start Programme 2013; 2 stand-alone FWF projects, 1 FWF/DACH project, 2 FET-OPEN Projects, Marie Curie Career Integration Grant
3. **Institutional responsibilities:** Head of the Nanofabrication scientific service unit 2017/18, 2018/19, 2019/20, 2020/21
   Physics track representative 2016/17
   Student Mentor 2019/20, 2020/21
   Female faculty recruiting committee member 2018/19, 2019/20, 2020/21
4. **Reviewing activities:** Reviewer for the Natural Sciences and Engineering Research Council of Canada , European Research Council (remote reviewer Starting Grant); Reviewer for Journals: Nat. Nanotech./Commun./Quantum Information, Phys. Rev. Lett., Phys. Rev. X, Nano Letters
5. **Teaching:** The physics of quantum dots (since 2016)
6. **External PhD committees:** Florian Froning, 02.07.2020, University of Basel; Anthony Amisse, 10.12.2020, Universite Grenoble Alpes
7. **Organization of scientific meetings:** Program committee member for the 21th International Winterschool on New Developments in Solid State Physics, Mauterndorf 2020
   Program committee member for the 20th International Winterschool on New Developments in Solid State Physics, Mauterndorf 2018
8. **Invited presentations at internation conferences/schools in the past five years:**
   - 31.08-02.09.2020, CMD2020GEFES, Madrid, Spain, "Flux-tunable Andreev bound states in hybrid full-shell nanowires".
   - 02.-06.06.2019, ISTDM / ICSI Conference, Wisconsin, USA, "Hole spins and qubits in germanium hut wires".
   - 16.-23.03.2019, Quantum Mescoscopic Physics, La Tuille, FR, "A heavy hole Ge spin qubit".
   - 04.-08.03.2019, APS March Meeting, Boston, USA, "A Ge heavy hole spin qubit".
   - 16.-19.07.2018, Quantum designer Physics, San Sebastian, ES, "Ge hole spin qubit".
   - 10.-14.09.2018, Spin Qubits IV, Konstanz, DE, "Hole spin qubits in Ge self-assembled hut wires".
   - 18.-21.09.2017, European Materials Research Society Meeting, Warsaw, PL, "Heavy hole states in Germanium hut wires".
   - 14.-15.05.2015, Spin and Topological phenomena in nanostructures, Salerno, IT, "Low temperature magnetotransport through Ge hut wires".