Péter Makk

Curriculum Vitae

BME, Dept. of Physics
Budapest, 1111, Budafoki street 8
☎ *+36 1 463 3056*
✉ *peter.makk@mail.bme.hu*
http://nanoelectronics.physics.bme.hu
Birth: 1983.09.02, Székesfehérvár

Education

2012 **PhD in Physics**, *Budapest University of Technology and Economics*.
PhD work: Investigation of molecular nanocontacts beyond conductance histograms

2007 **MSc in Physics**, *Budapest University of Technology and Economics (BME)*.
Master thesis: Investigation of molecular nanocontacts with MCBJ technique

Employment

2019– **Associate Professor**, *Department of Physics, BME*.

2018–2020 **Marie Curie Fellow**, *Department of Physics, BME*.

2017–2018 **scientific coworker**, *Department of Physics, BME*.

2013–2017 **Postdoctoral fellow**, *Department of Physics, University of Basel*.

2012–2013 **SCIEX grant fellow**, *Department of Physics, University of Basel*.

scientific coworker, *Department of Physics, BME*.

2010–2012 **scientific coworker**, *Hungarian Academy of Sciences*.

Research interest

Electron transport in nanostructures, low dimensional systems.

Electron and spin transport in graphene and two dimensional materials.

Hybrid nanostructures and quantum dots in nanowires and graphene, superconducting and ferromagnetic correlations.

Atomic and molecular junctions, transport through single atoms and molecules.

Languages

English fluent

German intermediate

French basic

Hungarian mother tongue

Awards/fellowships

2018 **Marie Curie Fellowship**.

2017 **Bolyai Fellowship from Hungarian Academy of Sciences**.

2012 **Sciex postdoctoral fellowship**.

2010 **2nd place at University Research Grant**.

2007 **3rd place at the National Scientific Students Associations Conference**.

2006 **Excellent Student of the Faculty Award, BUTE**.

2006 **University Award, BUTE**.

Teaching activity

Quantum computing architectures (2018, BME).

Organizer of Journal club meetings (2013-2018, UniBas, BME).

Introduction to nanophysics (2018 BME).

MSc laboratory (2018 BME).

Quantum transport lecture (2016, 2017 UniBas).

Quantum mechanics exercise (2015, 2016, UniBas).

Nanophysics proseminar (2013-2015, UniBas).

Transport in complex nanostructures (2010-2013, BME).

New experiments in nanophysics (2011, BME).

Condensed matter physics laboratory (2007-2011, BME).

Condensed matter exercises (2013-2014, UniBas).

Condensed matter exercises (2008-2010, BME; 2013-2014).

Grants

as PI

2018 **Marie Curie fellowship, TopoGraph, European Council**.

2017 **Bolyai fellowship, Ballistic graphene nanocircuits, Hungarian Academy of Sciences**.

2018 **OTKA NN-FlagERA, Engineering topological superconductivity in graphene, Hungarian Research Fun)**.

2017 **OTKA PD121052,Ballistic electron transport in hybrid nanostructures, from Hungarian Research Fund)**.

2017 **OTKA FK123894, Ballistic electron transport in low dimensional nanostructures , Hungarian Research Fund**.

2014 **Paul Scherrer Institute, SLS beam-time grant**.

2012 **Sciex fellowship, Developing ferromagnetic analyzer nanocircuits, Swiss Government**.

as participant

OTKA NK72916 - Spin polarization in nanostructures, OTKA K76010 - Electron transport in molecular nanostructures, OTKA CNK80991 -Spin injection and detection and manipulation in nanostructures, FunMols research network, OTKA K105735 - Investigation of nanostructures smaller than the resolution of e-beam lithography, OTKA K112918 - Charge dynamics in nanostructures, FP7-FET Open - Source of Entangled Electrons in Nano Devices, Graphene Flagship Spintronics workpackage, NCCR-Quantum Science and Technology, iSpinText Flagera-network, SuperTop Quantera Network, Quantum Electronics Momentum Group (PI: Szabolcs Csonka), HunQuTech (subproject leader).

Co-supervision of PhD students

Supervision and co-supervisor of 3 PhD, 2 BSc and 5 MSc thesis, *BME*.
topics: graphene electron-optics, Cooper pair splitting , molecular electronics

Co-supervisor of 6 PhD, 2 project work and 3 MSc thesis, *UNIBAS*.
topics: graphene nanoelectronics, experiments in nanowires

Conferences

Talks, invited talks and posters in more than 20 conferences, including

Graphene Week, Spintech, Condensed Matter in Paris, International Winterschool on Electronic Properties of Novel Materials, Frontiers in Quantum Engineered Devices, International conference on molecular electronics, Moriond: Quantum Transport in Nanophysics, GM2016 international conference.

Non-conference talks

Meeting of the Physical Society, MAFIHE/IAPS Summerschools on Nanophysics, Swiss Nanoscience Institute annual meeting, Annual meeting of the Hungarian Academy of Sciences.

Membership and representation of the research group in several research networks

2018-2019 SuperTop QuantERA research network (BME).
2018-2019 Topograph Flagera research network (BME coordinator).
2016-2019 iSpinText Flagera research network (UniBas, BME).
2012-2017 Quantum Science and Technology Network, QSIT-NCCR (UniBas).
2013-2018 Graphene Flagship, Spintronics WP (UniBas).
2014-2016 Swiss two-dimensional material meetings (UniBas).
2012-2014 EU research network SE2ND (BME and UniBas).
2010-2012 EU research network FunMols (BME).

Organizing international workshops

2015 **1st Ballistic graphene workshop**, *Basel*.
including several leading graphene research groups in Europe, ∼25 participants

2017 **2nd Ballistic graphene workshop**, *Basel*.
including several leading graphene research groups in Europe, ∼35 participants

2018 **3rd Ballistic graphene workshop**, *Basel*.
including several leading graphene research groups in Europe, ∼40 participants

2018 **Topological phases in van der Waals heterostructures**, *Budapest*.
including several leading 2D material research groups in Europe, ∼25 participants

International collaborators include

Prof. Kenji Watanabe (NIMS, J - hBN growth), Prof. Takashi Taniguchi (NIMS, J - hBN growth), Prof. Stephan Hofmann (Cambridge, UK - CVD hBN), Prof. Srijit Goswami (QTech, NL - graphene superconductor devices), Prof. Klaus Richter (Uni. Regensburg, D - theory of graphene transport), Prof. Jozsef Cserti (Eotvos Uni., H - theory of superconductivity), Dr. Attila Geresdi (TUDelft, NL - superconducting nanostructures), Prof. Bart van Wees (Uni. Groningen, NL - graphene spintronics), Prof. Jesper Nygard (QDev, DK - Cooper pair splitting in nanowires), Prof. Alfredo Levy Yeyati (Uni. Madrid, S - Theory for Cooper pair splitting), Dr. Romain Maurand (CEA Grenoble, F - graphene transport experiments), Prof. Frithjof Nolting (PSI, CH - Ferromagnetic characterization), Prof. Pierre Seneor (CNRS/Thales, F - graphene spintronics), Prof. Richard Warburton (UniBas, CH - optics in 2D materials),Prof. Justin Ye (Groningen, NL - Liquid gating),Prof. Saroj Dash (Chalmers, SE - graphene spintronics), Prof. Michel Calame (UniBas, CH - graphene nanoelectronics), Prof. Patrick Maletinsky (UniBas, CH - nano-magnetic imaging), Prof. Martino Poggio (UniBas, CH - nano heat-imaging), Dr. Jan Martinek (Poznan, PL - theory of molecular electronics), Prof. Colin Lambert (Uni. Lancaster, UK - theory of molecular electronics).

Research ID

Up to date list: Google Scholar.

Number of publications: 39 (peer-reviewed journals).

Number of citations: 539.

Number of independent citations: 393.

h-index: 15.