Curriculum vitae

PERSONAL INFORMATION

Máté Kedves

7700, Mohács, Nimród utca 4, Hungary

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kedvesm@edu.bme.hu

Gender Male | Date of birth 5 September 1994 | Nationality Hungarian

EDUCATION AND TRAINING

2019–present

PhD in Physics

Budapest University of Technology and Economics, Budapest, Hungary

- Topic: Investigation of 2D hybrid nanostructures
- Supervisor: Dr. Péter Makk

2017–2019

Master of Science in Physics

Budapest University of Technology and Economics, Budapest, Hungary

- Title of thesis: Quantum effects in graphene
- Supervisor: Dr. Péter Makk
- classification: excellent (score: 4.73/5)

2014–2017

Bachelor of Science in Physics

Budapest University of Technology and Economics, Budapest, Hungary

- Title of thesis: Locally gated hBN/graphene heterostructures
- Supervisor: Dr. Szabolcs Csonka
- classification: good (score: 4.24/5)

WORK EXPERIENCE

July 2016 – Present

Research assistant

Nanoelectronics Research Group, Department of Physics, Budapest University of Technology and Economics
1111, Budapest, Budafoki út 8 (Hungary)

Investigation of high quality quantumelectronic devices based on graphene encapsulated in hBN

INTERNSHIPS

2020

Technical University Delft, QuTech Institute

Lorentzweg 1, 2628 CJ Delft (the Netherlands)

- Group of Srijit Goswami
- Duration: 3 months
- electronic transport measurements of graphene-based SQUIDs in cryogenic environment

2018

University of Basel, Department of Physics

Klingelbergstrasse 82, CH-4056 Basel (Switzerland)

- Group of Prof. Christian Schönenberger
- Duration: 2 months
- fabrication of hBN/graphene/WSe_2 heterostructures
- transport measurements in cryogenic environment
- investigation of proximity-induced spin–orbit coupling in bilayer graphene/WSe_2 heterostructures

2017

University of Basel, Department of Physics

Klingelbergstrasse 82, CH-4056 Basel (Switzerland)

- Group of Prof. Christian Schönenberger
- Duration: 2 months
- fabrication of ultra-clean hBN/graphene quantum electronic devices
- electron-beam lithography

CONFERENCES

7-10 May 2024 **QUANTUMatter 2024**

San Sebastian (Spain)

- poster presentation entitled "Self-heating effects and switching dynamics in graphene multi-terminal Josephson junctions"

16-18 August 2023 **7th Graphene workshop**

University of Basel, Basel (Switzerland)

27-30 June 2023 **Graphene 2023**

Manchester (England)

- poster presentation entitled "Investigation of graphene-based multiterminal Josephson junctions"

11-14 June 2023 **Bound States 2023**

Budapest (Hungary)

- poster presentation entitled "Current—phase relation measurements of graphene-based Josephson junctions"

7-14 May 2023 **The Capri Spring School on Transport in Nanostructures 2023**

Capri (Italy)

19-21 October 2022 **6th Graphene and 2D heterostructure Workshop**

Budapest University of Technology and Economics (Hungary)

- oral presentation entitled "Switching current distribution measurements in graphene-based multiterminal Josephson junctions"

5-9 September 2022 **Graphene Week 2022**

BMW Welt, Munich (Germany)

- poster presentation entitled "Investigation of graphene-based multiterminal Josephson junctions"

9-11 May 2022 **SuperTop workshop**

Budapest University of Technology and Economics (Hungary)

- poster presentation entitled "Current—phase relation measurements of graphene-based Josephson junctions"

12-14 October 2021 **Low dimensional superconducting hybrids for novel quantum functionalities**

Paris, College de France (France)

- poster presentation entitled "Current—phase relation measurements of graphene-based Josephson junctions"

9 May 2019 **1st Contemporary Condensed Matter Physics Challenges, Workshop of the BME and EPFL**

Budapest University of Technology and Economics (Hungary)
– oral presentation entitled "Graphene Josephson junctions"

3-8 Februaury 2019 **Graphene Study Winter 2019**

Obergurgl (Austria)
– poster presentation entitled "Proximity spin–orbit coupling in WSe_2/Gr/hBN heterostructures"

19-23 Februaury 2018 **3rd Grandmaster Early-Career Workshop in Physics**

Technical University of Vienna (TU Wien) (Austria)
– oral presentation entitled "Locally gated hBN/graphene heterostructures"

COMPETITIONS AND AWARDS

2019 **OTDK – National research competition for students**

Eger (Hungary)
– Special award of the solid state physics section
– Thesis and presentation entitled "Towards engineering topological states in graphene"

2018 **TDK - University research competition for students**

Budapest University of Technology and Economics
– 3rd place award of the experimental and nanophysics section
– Thesis and presentation entitled "Towards engineering topological states in graphene"

TEACHING ACTIVITY

Physics lab course
– 5 semesters
– for Physics BSc and MSc students

Mathematics A1
– 1 semester
– for Chemical Engineer BSc students

Preparatory exercises for the International Physics Olympiad
– 2 weeks
– for Saudi Arabian students

SUPERVISION

BSc students
– Tamás Pápai, BSc thesis title: "Current–phase relation in graphene heterostructures"
– Margarita Rahimkulov, assembly of 2D Van der Waals heterostructures
– Milán Varga, assembly of 2D Van der Waals heterostructures

MSc students
– Tamás Pápai, MSc thesis title: "Investigation of Graphene Josephson Junctions"

PERSONAL SKILLS

Mother tongue Hungarian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
French	B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
Common European Framework of Reference (CEF) level