

## PERSONAL INFORMATION



## Levente MÁTHÉ

 National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM), Cluj-Napoca, Romania (Romania)  
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 levente.mathe@itim-cj.ro

## WORK EXPERIENCE

19/06/2018–Present

**Scientific Researcher, Research Assistant**

National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM)  
67-103 Donath, 400293 Cluj-Napoca (Romania)  
<https://www.itim-cj.ro/>

Research area: Transport phenomena in graphene-based quantum dots, Charge transport in quantum dots connected to Majorana zero modes

**Business or sector** Government (research)

01/10/2016–30/06/2018

**Teaching Activities**

Babeş-Bolyai University - Faculty of Physics  
01 Kogălniceanu, 400027 Cluj-Napoca (Romania)  
<http://phys.ubbcluj.ro/>

Coordinating seminary activities: Solid State Physics ( 3rd year, 1st Semester: 2016/2017; 2017/2018), Electricity and Magnetism (1st year, 2nd Semester: 2016/2017; 2017/2018)

## EDUCATION AND TRAINING

01/10/2016–Present

**PhD Student**

Babeş-Bolyai University - Faculty of Physics  
01 Kogălniceanu, 400027 Cluj-Napoca (Romania)  
<http://phys.ubbcluj.ro>

Research area: Physical Properties of Low-dimensional Systems

Scientific Supervisor: Prof. dr. Ioan Grosu

2014–2016

**MSc: Solid State Physics**

Babeş-Bolyai University - Faculty of Physics  
01 Kogălniceanu, 400027 Cluj-Napoca (Romania)  
<http://phys.ubbcluj.ro>

Dissertation Title: Transport Through a Quantum Dot with Electron-Phonon Interaction

Scientific Supervisor: Prof. dr. Ioan Grosu

2014–2016

**Pedagogical Module Level 2**

Babeş-Bolyai University, Cluj-Napoca (Romania)

2010–2014

**BSc: Engineering Physics**

Babeş-Bolyai University - Faculty of Physics  
01 Kogălniceanu, 400027 Cluj-Napoca (Romania)

<http://phys.ubbcluj.ro>

Thesis Title: Measuring the Speed of Light with Laser Pulses

Scientific Supervisors: Prof. dr. Néda Zoltán, dr. ing. Tunyagi Arthur

2010–2013 **Pedagogical Module Level 1**

Babeş-Bolyai University, Cluj-Napoca (Romania)

2006–2010 **High school: Automation Technician**

Technological High School - Grup Școlar Electromureș  
5 Livezeni, 540485 Târgu Mureș (Romania)

<http://www.electromures.net>

Thesis Title: Digital Timer

Scientific Coordinator: Prof. Pethő Ladislau

PERSONAL SKILLS

Mother tongue(s) Hungarian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Romanian	C1	C1	C1	B2	B2
English	B2	C1	B2	B2	B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
Common European Framework of Reference for Languages

Communication skills Adequate written and oral communication skills that I practiced through teaching and giving presentations.

Job-related skills Teaching experience

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Independent user	Independent user	Proficient user	Proficient user	Independent user

Digital skills - Self-assessment grid

- Advanced knowledge of programs: Wolfram Mathematica, LaTeX, Autodesk Inventor, Origin and Microsoft Office;

- Basic knowledge of programs: Avogadro, Gauss View;

- Advanced knowledge of graphical applications: Corel Draw;

- Basic knowledge of programming languages: Python, C;

Other skills - I am passionate about graphic design and wood carving.

## ADDITIONAL INFORMATION

Journal Referee for: Applied Physics A

- List of publications
1. **L. Máthé**, Z. Kovács-Krausz, I. Botiz, I. Grosu, K. El Anouz, A. El Allati, and L. P. Zârbo, Phonon-assisted tunneling through quantum dot systems connected to Majorana bound states, *Nanomater.* **13**, 1616 (2023)
  2. **L. Máthé**, D. Sticlet and L. P. Zârbo, Quantum transport through a quantum dot side-coupled to a Majorana bound state pair in the presence of electron-phonon interaction, *Phys. Rev. B* **105**, 155409 (2022)
  3. **L. Máthé**, C. P. Onyenegecha, A.-A. Farcaş, L.-M. Pioraş-Țimbolmaş, M. Solaimani and H. Hassanabadi, Linear and nonlinear optical properties in spherical quantum dots: Inversely quadratic Hellmann potential, *Phys. Lett. A* **397**, 127262 (2021)
  4. **L. Máthé** and I. Grosu, Nonequilibrium Kondo effect in a graphene-coupled quantum dot in the presence of a magnetic field, *Beilstein J. Nanotechnol.* **11**, 225 (2020)
  5. **L. Máthé** and I. Grosu, Transport Through a Quantum Dot with Electron-Phonon Interaction, *Mater. Today: Proc.* **5**, 15878 (2018)

Scientometry Citations: 65 (without self-citations)  
Conference/Workshops/Schools attending: oral presentations: 7; poster presentations: 14.

- Prizes
- L. Máthé**, D. Sticlet, L. P. Zârbo, *Andreev conductance through a quantum dot-Majorana ring structure*, 4th Autumn School on Physics of Advanced Materials (PAMS 4), 24-30 September 2021, Sant Feliu de Guixols, Spain, **Sponsor's Prize** offered by American Elements
- L. Máthé**, I. Grosu, *Nonequilibrium Kondo effect in a quantum dot coupled to graphene electrodes in presence of a magnetic field*, 12th International Conference on Physics of Advanced Materials (ICPAM 12), 22-28 September 2018, Heraklion, Greece – **Nicolae Sulitanu Prize** offered by Alina Sulitanu