

CV of András Pályi

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Personal data

Name	András Pályi
Position	Associate professor
Current institution	Department of Theoretical Physics, Budapest University of Technology and Economics (BME), H-1111 Budapest, Budafoki út 8, Hungary
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Date of birth	January 9, 1981

Education

2008	PhD in Physics, Eötvös University (ELTE), Budapest, Hungary
2004	MSc in Physics, ELTE

Employment

2015-	Associate professor	BME
2011-2015	Assistant professor	ELTE
2011-2015	Part-time research fellow	BME
2008-2010	Postdoctoral researcher	University of Konstanz, Germany
2007-2008	Research assistant	ELTE

Awards and prizes

2017	ÚNKP Fellowship
2015	Pál Gombás Award of the Hungarian Physical Society (ELFT)
2012-2015	János Bolyai Scholarship of the Hungarian Academy of Sciences

Research interest

- condensed-matter theory
- topology in quantum systems
- condensed-matter realizations of quantum information processing schemes

Current teaching activity

- *Quantum Computing Architectures*, lecture for physics MSc and PhD students, BME/ELTE, with Péter Makk
- *Quantum Information Processing*, lecture for physics BSc, MSc and PhD students, BME, with Zoltán Zimborás
- *Topological insulators I. (Band-structure topology and edge states in 1D and 2D)*, lecture for physics MSc and PhD students, BME/ELTE, with János Asbóth and László Oroszlány
- *Topological insulators II. (Topological superconductivity in 1D)*, lecture for physics MSc and PhD students, BME/ELTE, with János Asbóth and László Oroszlány
- *Theoretical Nanophysics*, lecture for physics MSc and PhD students, BME, with Gergely Zaránd
- *Physics M1*, quantum and condensed-matter physics for mechanical engineering MSc students, BME
- *Student seminar supervision*, for Physics MSc students, BME

Postdocs and students supervised

- Postdocs: Dr. Judit Romhányi (2012), Dr. Gábor Csiszár (2012-2014), Dr. Matthias Droth (2016-2018), Dr. Boross Péter (2019-), Dr. Vahid Derakhshan (2018-)
- PhD students: Gábor Széchenyi (2017) Péter Boross (2019)
- MSc students: Zoltán Kórádi (2015), Réka Tuza (2017), Máté Tibor Veszeli (2017), Gabriella Gorjanác (2018)
- BSc students: Zoltán Kórádi (2013), Réka Tuza (2015), Máté Tibor Veszeli (2015), Dániel Budányi (2016), Áron Rozgonyi (2017), Ákos Budai (2018).

Memberships and professional service

- Referee for Physical Review Letters, Physical Review B, Physical Review X, Physical Review Materials, Journal of Applied Physics, Nature Physics, Nature Nanotechnology
- Grant reviewer for the European Research Council and the Hungarian NSF (OTKA).
- Co-organizer, with J. Cserti and C. Beenakker, *International School on the Fundamentals of Nanoelectronics*, Keszthely, Hungary, 2006.
- Co-organizer, Nanophysics Session, *Mafihé Balaton Summer School*, Balatonalmádi, Hungary, 2012.
- Main organizer of the weekly Nanophysics Seminar at ELTE, 2012 Spring – 2015 Fall.
- HAS doctoral degree defense committee member; Opponent of 13 PhD theses, PhD defense committee member on 7 occasions.
- Member of DPG (German Physical Society)

Grants, fellowships, projects

2011-2015	EU FP7 Marie Curie Career Integration Grant, EUR 100,000, Principal investigator
2012-2015	Postdoctoral grant of the Hungarian NSF (OTKA), HUF 6,000,000, Principal investigator
2017	ÚNKP Fellowship

Invited talks at international conferences

2010	School and Conference on Spin-based Quantum Information Processing, Konstanz, Germany
2014	Spin Qubits Programme of the Kavli Institute of Theoretical Physics in China, Beijing, China
2014	2nd School and Conference on Spin-based Quantum Information Processing, Konstanz, Germany
2018	‘From Topology to Superconductivity’ Symposium, Vienna, Austria
2018	3rd School and Conference on Spin-based Quantum Information Processing, Konstanz, Germany
2018	School on Quantum Materials, Braga, Portugal

Languages

English (fluent), German (basic)

Scientific impact (according to Google Scholar, as of 21/04/2019)

31 papers in refereed journals, 1 book, 4 arxiv manuscripts

Total number of citations: 810

H-index: 12

Complete list of publications: <https://m2.mtmt.hu/gui2/?type=authors&mode=browse&sel=10019142>

Five selected publications

1. P. Udvarhelyi, V. O. Shkolnykov, A. Gali, G. Burkard, A. Palyi, *Spin-strain interaction in nitrogen-vacancy centers in diamond*, Phys. Rev. B 98, 075201 (2018).
2. J. V. Koski, A. J. Landig, A. Palyi, P. Scarlino, C. Reichl, W. Wegscheider, G. Burkard, A. Wallraff, K. Ensslin, T. Ihn, *Floquet spectroscopy of a strongly driven quantum dot charge qubit with a microwave resonator*, Phys. Rev. Lett. 121, 043603 (2018).

3. P. Boross, G. Szechenyi, A. Palyi *Hyperfine-assisted fast electric control of dopant nuclear spins in semiconductors* Phys. Rev. B 97, 245417 (2018).
4. A. Pályi, P. R. Struck, M. Rudner, K. Flensberg and G. Burkard, *Spin-orbit induced strong coupling of a single spin to a nanomechanical resonator*, Physical Review Letters 108, 206811 (2012).
5. A. Pályi and G. Burkard, *Disorder-mediated electron valley resonance in carbon nanotube quantum dots*, Physical Review Letters 106, 086801 (2011).