

András Halbritter – Curriculum Vitae

Degree

PhD	Budapest University of Technology and Economics, 2003 <i>Investigation of atomic-sized conductors with the mechanically controllable break junction technique</i>
Habilitation	Budapest University of Technology and Economics, 2012

Languages

English	Intermediate Level Write and read (C)
German	Advanced Level Write and read (C)

Qualifications

1999	MSC in physics
2003	Ph.D. in Physics

Decorations

2004	Award for "Outstanding PhD/DLA works" <i>by:</i> Foundation for the Hungarian Higher Education and Research <i>Achievement:</i> Ph.D. work
2005	Young Scientist Award of the Academy <i>by:</i> Hungarian Academy of Sciences <i>Achievement:</i> Scientific Research
2005-2008	Bolyai Janos Research Fellowship <i>by:</i> Hungarian Academy of Science <i>Achievement:</i> Postdoctoral Research
2009-2012	Bolyai Janos Research Fellowship <i>by:</i> Hungarian Academy of Science <i>Achievement:</i> Postdoctoral Research
2011	"TDK MUNKÁÉRT" emléklapok <i>by:</i> Budapest University of Technology and Economics <i>Achievement:</i> supervision of undergraduate students

Study trips

1998 – 2002 (6 months)	University of Nijmegen, The Netherlands <i>Sponsor:</i> University of Nijmegen, The Netherlands <i>Research topic:</i> Point-contact spectroscopy
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Workplaces

2002 - 2004	Budapest University of Technology and Economics, Department of Physics <i>Position:</i> Scientific Coworker
2004 -	Budapest University of Technology and Economics, Department of Physics <i>Position:</i> Assistant Professor
2008 -	Budapest University of Technology and Economics, Department of Physics <i>Position:</i> Associate Professor
2009 -	Budapest University of Technology and Economics, Department of Physics <i>Position:</i> vice head of department, associate professor
2012 -	Budapest University of Technology and Economics, Department of Physics <i>Position:</i> head of department, associate professor

Specialty

solid state physics, nanophysics

Teaching

- Undergraduate physics laboratory 1-2 (Physics BSc) 2004-
- Advanced physics laboratory (Physics MSc), 1999-
- Solid state physics exercises (Physics BSc), 2000-2003
- Nanophysics (Physics MSc, PhD), 2005-
- Transport in complex nanostructures (Physics MSc, PhD), 2011-
- Nanophysics seminar (Physics MSc), 2011-
- Applied solid state physics (Physics BSc), 2014-
- Measurement techniques (Physics BSc), 2014-
- Development of several novel laboratory exercises, and computer controlled measurement courses
- Development of the e-learning site fizipedia.bme.hu
- Organization of several activities for high school students (see felvi.phy.bme.hu)
- Key role in the reform of the Physics BSc curriculum (2014)

Supervision of students

PhD:

- Makk Péter (summa cum laude, 2012.)
- Balogh Zoltán (in progress)
- Pósa László (in progress)
- Magyarkuti András (in progress)

MSc:

- Magyarkuti András (2013)
- Balogh Zoltán (2012)
- Pósa László (2012)
- Vigh Máté (2010)
- Makk Péter (2007.)

BSc:

- Magyarkuti András - Fizika BSc szakdolgozat (2011.)
- Balogh Zoltán - Fizika BSc szakdolgozat (2010.)
- Pósa László – Fizika BSc szakdolgozat (2010.)

TDK (*scientific work and thesis for the scientific student competition*):

- Magyarkuti András (2011, first prize at the university, and first prize at the national competition)
- Gubicza Ágnes (2012, first prize at the university, and second prize at the national competition)
- Balogh Zoltán (2011, second prize at the university, and third prize at the national competition.)
- Pósa László (2010, second prize at the university competition)
- Gyenis András (2008, first prize at the university, and third prize at the national competition)
- Makk Péter (2006, third prize at the university, and third prize at the national competition.)
- Csonka Szabolcs (2000, first prize at the university, and first prize at the national competition)

Selected publications

- [1] Z. Balogh, D. Visontai, P. Makk, K. Gillemot, L. Oroszlány, L. Posa, C. Lambert, A. Halbritter, Precursor configurations and post-rupture evolution of Ag-CO-Ag single-molecule junctions. *NANOSCALE* advance article (2014)
- [2] A. Geresdi, M. Csontos, A. Gubicza, A. Halbritter, and G. Mihály, A fast operation of nanometer-scale metallic memristors: highly transparent conductance channels in Ag₂S devices. *Nanoscale*, *6*, 2613 (2014)
- [3] S. V. Aradhya, M. Frei, A. Halbritter, and L. Venkataraman, Correlating Structure, Conductance, and Mechanics of Silver Atomic-Scale Contacts. *ACS Nano*, *7*, 3706 (2013)
- [4] P. Makk, D. Tomaszewski, J. Martinek, Z. Balogh, Sz. Csonka, M. Wawrzyniak, M. Frei, L. Venkataraman, and A. Halbritter, Correlation Analysis of Atomic and Single-Molecule Junction Conductance. *ACS Nano*, *6*, 3411 (2012)
- [5] P. Makk, D. Visontai, L. Oroszlány, D. Z. Manrique, S. Csonka, J. Cserti, C. Lambert, and A. Halbritter, Advanced simulation of conductance histograms validated through channel-sensitive experiments on indium nanojunctions. *Phys. Rev. Lett.*, *107*, 276801 (2011)
- [6] A. Halbritter, P. Makk, S. Mackowiak, S. Csonka, M. Wawrzyniak, and J. Martinek. Regular Atomic Narrowing of Ni, Fe, and V Nanowires Resolved by Two-Dimensional Correlation Analysis. *Phys. Rev. Lett.*, *105*, 266805 (2010)
- [7] A. Halbritter, P. Makk, S. Csonka, and G. Mihály, Huge negative differential conductance in Au-H₂ molecular nanojunctions. *Phys. Rev. B*, *77*, 075402 (2008)
- [8] S. Csonka, A. Halbritter, and G. Mihály, Pulling gold nanowires with a hydrogen clamp: Strong interactions of hydrogen molecules with gold nanojunctions. *Phys. Rev. B*, *73*, 075405 (2006)
- [9] S. Csonka, A. Halbritter, G. Mihály, O. I. Shklyarevskii, S. Speller, and H. van Kempen, Conductance of Pd-H nanojunctions. *Phys. Rev. Lett.*, *93*, 016802 (2004)
- [10] A. Halbritter, L. Borda, and A. Zawadowski, Slow Two-Level Systems in Point Contacts (review article). *Advances in Physics*, *53*, 939 (2004)