GÁBOR ERDEI

Personal data

Name	Gábor Erdei, dr.
Position	Associate professor
Current institution	Department of Atomic Physics, Budapest University of Technology and Economics 1111 Budapest, Budafoki út 8 Hungary
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Date of birth	1971

Education

1989	Madách Imre Secondary Grammar School, Budapest
1995	MSc degree in Electrical Engineering, BME, Hungary
2002	PhD in Applied Physics (optics), BME Hungary and Université de Paris-Sud XI, Orsay, France

Employment

1996-2001	Optical engineer	Optilink Magyarország Rt, Hungary
2002-2003	Optical engineer	Optimal Optik Kft, Hungary
2003-2011	Assistant professor	BME AFT, Hungary
2012-	Associate professor	BME AFT, Hungary

Awards and prizes

2012	“Excellent Teacher” of the Faculty of Natural Sciences
2013	“Praise from the Rector” (for organising a sub-congress of the Students’ National Scientific Conference, OTDK)
2013	“Special Prize for Educators” (ProProgressio Foundation)
2017	“Memorial Plaquette” for organising Students’ Scientific Conference
2018	“Innovation Prize of the ProProgressio Foundation”

Research interest

- Design of coherent and incoherent optical systems (imaging and illumination systems for visual and scientific applications)
- Development and application of optical measuring techniques

Teaching activity

- Optics (BSc)
- Fundamentals of Optical Design (MSc)
- Advanced Laboratory Exercises in Physics I-II-III (BSc)
- Physics Laboratory Optics-Photonics (MSc)
- Project Laboratory and Diploma Laboratory coordinator (MSc)

Students supervised

- BSc students: Gresits Iván (2010), Karner Máté (2010), Szekeres Tamás (2011), Czopf Anna (2012), Kurucz Máté (2013), Holló Csaba (2017), Czigléczki Janka
- MSc students: Boja Bence (2005), Dolgos Gergely (2008), Horváth Katalin (2009), Játékos Balázs (2010), Karner Máté (2012), Nemes-Czopf Anna (2014), Kurucz Máté (2015), Fülep Csilla (2015), Buttinger Milán (2018), Bercsényi Dániel (2019), Holló Csaba
- PhD students: Játékos Balázs (2019), Timár-Fülep Csilla
- OTDK prizes: Játékos Balázs (I), Nemes-Czopf Anna (I), Timár-Fülep Csilla (I), Holló Csaba (I), Gyökös Réka (III)

Memberships and professional service

- Public body member of the Royal Academy of Sciences
- Member of the International Society of Optics and Photonics (SPIE)

Grants, fellowships, projects (since 1997)

1997-1998 TEMPUS PhD scholarship, 1 MFt
1999-2000 Soros Foundation PhD scholarship, 500 eFt
1998-2002 Participation, Holographic Memory Card project (Optilink Magyarország Rt)
2002-2003 Participation, Head-mounted display development project (Optimal Optik Kft.)
2004-2005 Participation, Holographic Security Card project, Bayer Innovation R&D contract
2005- cont. Proj. leader, Projects for urine measuring devices, 77Elektronika Kft R&D contract, 15 MFt
2006-2009 Participation, PET detector development project, Jedlik Ányos program, A1-06-017
2007-2012 Participation, Semiconductor measuring head development project, Semilab R&D contract
2010-2013 Participation, SPAD detector development project, SPADnet EU project, 7th framework
2011-2015 Proj. leader, Tokamak diagnostics development, R&D contract with Wigner RMI, 5 MFt
2014-2017 Proj. leader, Intraocular lens development project, VKSZ-12-1-2013-80, 73 MFt
2016-2017 Proj. leader, Microscope objective development, 77Elektronika R&D contract, 67 MFt

Languages

English (intermediate), French (beginner)

Scientific impact (as of 01/1996)

25 papers in refereed journals (mtmt)
34 papers in conference proceedings (mtmt)
11 international patents (mtmt)
1 European patent (mtmt)
9 Hungarian patents (mtmt)
Total number of independent citations: 225 (mtmt)
H-index: 14 (scholar.google.hu)

Complete list of publications:
https://m2.mtmt.hu/gui2/?type=authors&mode=browse&sel=10011638
https://scholar.google.hu/citations?user=6R4XViEAAAAJ&hl=hu

Five selected publications

1. Z. Göröcs, G. Erdei, T. Sarkadi, F. Ujhelyi, J. Reményi, P. Koppa and E. Lőrincz, "*Hybrid multinary modulation using a phase modulating spatial light modulator and a low-pass spatial filter*", Optics Letters **Vol. 32**, No. 16, pp. 2336-2338, 2007.
2. E. Lőrincz, G. Erdei, I. Péczeli, C. Steinbach, F. Ujhelyi and T. Bükki, "*Modeling and optimization of scintillator array for PET detectors*", IEEE Transactions on Nuclear Science, **Vol. 57**(1), pp. 48-54, 2010.
3. B. Játékos, G. Patay, E. Lőrincz, G. Erdei, "*Integrated optical and nuclear simulation of a monolithic LYSO: Ce based PET detector module*", Journal of Instrumentation **12** (05), P05018, 2017.
4. M. Lampert, G. Anda, A. Czopf, G. Erdei, D. Guszejnov, Á. Kovácsik, G. I. Pokol, D. Réfy, Y. U. Nam and S. Zoletnik, "*Combined hydrogen and lithium beam emission spectroscopy observation system for Korea Superconducting Tokamak Advanced Research*", Review of Scientific Instruments, **86**(7):073501, 2015.
5. Cs. Fülep, I. Kovács, K. Kránitz, G. Erdei, "*Simulation of visual acuity by personalizable neuro-physiological model of the human eye*", Scientific Reports, **Vol. 9**, art. num. 7815, 2019.