

CV of Prof. László P. BIRÓ

POSITION HELD:

Research Professor, Nanostructures Department,
Institute of Technical Physics and Materials
Science (MFA), Centre for Energy Research
(EK), Hungarian Academy of Sciences (HAS),
Budapest, Hungary
<http://www.nanotechnology.hu/>



DIPLOMAS & EARLIER POSITIONS & HONORS

- 1979 **Diploma in Physics** (*with distinction*), Babes-Bolyai University, Cluj-Napoca (Kolozsvár), Romania, (*Thesis title: Growth and characterization of CaF₂ single crystals*)
- 1979 – 1983 Work in industrial Quality Control: Machine & Spare Parts Works, Gheorgheni, Romania. Head of the Physical Testing Laboratory, later Head of all Laboratories.
- 1984 – 1990 Research Associate at the Institute of Isotopic and Molecular Technology, Cluj-Napoca, Romania.
- 1991 – 1987 Research Associate at the HAS Research Institute for Technical Physics and Materials Science (MFA), Budapest, Hungary
- 1997 **PhD in Physical Engineering** (*summa cum laude*), Technical University Budapest, Budapest, Hungary (*Thesis title: New methods in characterizing and engineering defects during ion irradiation*)
- 1998 – 2003 Senior researcher, Founder and Head of the Nanostructures Laboratory at the HAS Research Institute for Technical Physics and Materials Science (MFA), Budapest, Hungary
- 2004 – 2007 Scientific Advisor, Head of the Nanotechnology Department at the HAS Research Institute for Technical Physics and Materials Science (MFA), Budapest, Hungary
- 2005 **Doctor of the Hungarian Academy of Sciences**, Hungarian Academy of Sciences, Budapest, Hungary (*Thesis title: Carbon nanotube type nanostructures: production and characterization*)
- 2008 – 2013 Scientific Advisor, Head of the Nanostructures Department at the HAS Research Institute for Technical Physics and Materials Science (MFA), Budapest, Hungary
- 2008 - Honorary Professor of the University of Szeged, Szeged, Hungary
- 2009 - Member of the Solid State Committee of the Physical Division of the Hungarian Academy of Sciences
- 2010 - 2013 Member of Engineering and Natural Sciences College of the Hungarian Scientific Research Fund
- 2013 - Member of the Interdivisional Committee for Biophysics of the Hungarian Academy of Sciences
- 2010 – 2015 European Materials Research Society (E-MRS) member of the Executive Committee
- 2013 **Corresponding Member of the Hungarian Academy of Sciences**
- 2013 - .2014 Research Professor, Head of the Nanostructures Department at the HAS Institute of Technical Physics and Materials Science (MFA), Research Centre for Natural Sciences (TTK), Budapest, Hungary
- 2014 - .2015 Research Professor, Head of the Nanostructures Department at the HAS Institute of Technical Physics and Materials Science (MFA), Centre for Energy Research (EK), Budapest, Hungary
- 2014 – Member of the Hungarian Academy of Engineering
- 2015 - Research Professor, Nanostructures Department at the HAS Institute of Technical Physics and Materials Science (MFA), Centre for Energy Research (EK), Budapest, Hungary

MAJOR SCIENTIFIC VISITS

1993 March - May.	Institute for Atomic and Molecular Physics - Amsterdam, The Netherlands,
1993 – 1997 17 months	Fraunhofer Institut für Integrierte Schaltungen - Erlangen, Germany, EC Mobility fellowship & Eötvös Hungarian State Fellowships
1996 Oct.-Dec.	Fellowship of the Belgian CGRI of the French Community of Belgium at Facultes Universitaires Notre-Dame de la Paix, Namur, Belgium
1997 Oct. – Nov.	Fellowship offered by the Max Born Institute für Nichtlinear Optik und Kurzzeitspektroskopie, Berlin, Germany
1997 – 2009	OSTC and FNRS fellowships and FNRS-HAS joint research agreement at
1996 - 2013 55 months	University of Namur (earlier: Facultes Universitaires Notre Dame de la Paix), Namur, Belgium

The research career of Prof. Biró has started in materials science in single crystal growth at the Institute for Isotopic and Molecular Technology (Cluj-Napoca, Romania), his diploma thesis was focused on the growth of CaF₂ single crystals. In the period 1984 - 1990, Prof. Biró worked in the same institute on the growth, sensitization and characterization of PbSe thin film IR detectors. In 1991 Prof. Biró has moved to Budapest to the Research Institute for Technical Physics and Materials Science (MFA). He used scanning tunneling microscopy (STM) and atomic force microscopy (AFM) to investigate the surface modification induced by ion irradiation of various targets, he developed several new methods in the scanning probe microscopy (SPM) characterization of irradiated samples.

In the period 1998 – 2003, Prof. Biró is appointed for the founding and heading of the Nanostructures Laboratory in the MFA, carbon nanotubes are the main focus of his research interest. *As a recognition of his achievements, in the year 2000 Prof. Biró is the Director of a NATO Advanced Study Institute he organized in Budapest focusing on carbon nanotubes and carbon filaments.*

In the period 2003 – 2005 the main focus of Prof. Biró's work concentrates on various carbon nanotube type nanoarchitectures, like regularly coiled carbon nanotubes, Y-junctions, double spirals, necklaces, etc. In 2005 he obtains the title of Doctor of the Hungarian Academy of Sciences.

In 2004 Prof. Biró is appointed Head of the Nanotechnology Department in the MFA.

Since 2003 Prof. Biró becomes interested in bioinspired materials: in photonic crystal type nanoarchitectures occurring in the scales of blue and green butterflies. He and his collaborators contribute to the founding of a new research direction focusing on the materials science and physical aspects of the photonic nanoarchitectures of biologic origin.

Since 2005 Prof. Biró has shifted the focus of his work on carbon nanostructures to graphene and other novel 2D materials. Under his supervision *several new methods were developed that allow the crystallographically controlled nanopatterning of graphene. He was the HPI of the Korean-Hungarian Joint Laboratory for Nanosciences (2010 – 2013, 2014 - 2017), which achieved several breakthroughs in the characterization and nanolithography of CVD graphene and other 2D materials.*

Prof. Biró has published more than 260 papers and received more than 4900 citations, he has a Hirsch index: h =39.