

Curriculum Vitae

Particulars

Name: Dr. **Emil Agócs**
Date of birth: 8. september 1984, Budapest, Hungary.
E-mail: agocs.emil at energia.mta.hu



Affiliation

2016 - now Research fellow at [Institute of Technical Physics and Materials Science](#), Hungarian Academy of Science, Division of Photonics/[Ellipsometry Laboratory](#), Budapest, Hungary
2016 - 2018 Guest Researcher at [National Institute of Standards and Technology](#)(NIST), Physical Measurement Laboratory(PML), Nanoscale Metrology Group, Gaithersburg, Maryland, USA
2015-2016 Research fellow at Physikalisch- Technischen Bundesanstalt (PTB), Braunschweig, Germany, Division of Optics/Imaging and Wave Optics/[Ultra-high Resolution Microscopy](#)
2012-2015 Assistant research fellow at [Institute of Technical Physics and Materials Science](#), Hungarian Academy of Science, Division of Photonics/[Ellipsometry Laboratory](#), Budapest, Hungary

Education

2009-2014 University of Pannonia, Faculty of Information Technology, Doctoral School in Molecular and Nanotechnology,
PhD project: Optical properties of nanocrystalline and ion implanted structures
Location: MTA MFA Fotonics Department, Ellipsometry Laboratory
2003-2009 Budapest University of Technology and Economics, Faculty of Natural Sciences, Materials Science Module, Engineering Physicist
Degree project: Production and structure analysis of CrN based thin films
Location: MTA MFA Thin Films Department
1995-2003 Bálint Balassi Grammar School

Experience

- Through-focus optical microscopy method (TSOM)
- Advanced application of Spectroscopic Ellipsometry
- Development of optical models (Finite Element method)
- Development of measurement devices (Scaterometer, Waveguide sensors, Optical microscopy)
- Preparation of thin films (PVD sputter system)
- Preparation techniques for TEM (Ar-ion beam, FIB)
- Basic usage of TEM, qualitative (structural and phase analysis) and quantitative analysis (EDS, EELS)
- texture analysis (X-Ray Diffraction, TEM)

Schools and conferences

2016	7th. Internatioanal Spectroscopic Ellipsometry Conference, Berlin (Germany)
2015	SPIE Optics + Photonics, San Diego (USA)
2015	9th Workshop Ellipsometry, Enschede (Netherlands)
2014	13th. European Vacuum Conference, Aveiro (Portugal)
2013	6th. Internatioanal Spectroscopic Ellipsometry Conference, Kyoto (Japan)
2012	E-MRS Spring Meeting 2012, Strasbourg (France)
2012	7th Workshop Ellipsometry, Leipzig (Germany)
2011	EuroNanoForum, Budapest (Hungary)
2010	4th. International Conference on Micro-, Nanoelectronics, Nanotechnologies and MEMs, Athens (Greece)
2010	5th. Internatioanal Spectroscopic Ellipsometry Conference, Albany, New York (USA)
2007	Students' Scholarly Circle
2005	National Presenter Competition

Language skills

English	intermediate level exam(2009)
German	intermediate level exam(2002)

Software

Programming language: MATLAB, C, JCM, EM-Suite, Python
Other software: Origin, Microsoft Office, Photoshop, Maple.

Participation in Projects

2017-2019	NVKP_16-1-2016-0014, „Az atomerőművekben használt cirkónium ötvözetek anyagszerkezeti változásainak hatása a fűtőelemek épségére és a környezeti terhelésre”
2015-2019	OTKA K115852, The Hungarian Scientific Research Fund Title: Development and optical monitoring of nanostructures for sensing
2015-2016	TÉT_12_DE-1-2013-0002, Hungarian–German Intergovernmental S&T Cooperation Programme Title: Szerves vékonyrétegek alapvető paramétereinek meghatározása optikai és röntgen módszerek kombinálásával
2015-2016	TÉT_14_FR-1-2015-0041, Hungarian–French Intergovernmental S&T Cooperation Programme Title: Characterization methods of semi-conductor nanowires grown by novel electromechanical techniques
2013-2015	TÉT_12_FR-1-2013-0016, Hungarian–French Intergovernmental S&T Cooperation Programme Title: Characterization of porous materials for microelectronics
2011-2012	TÉT_10-1-2011-0754, Hungarian–French Intergovernmental S&T Cooperation Programme Title: Defect engineering controlled by low energies He implantation in

	Si and GaN
2010-2012	OTKA K81842, The Hungarian Scientific Research Fund Title: Protein and nanocrystalline semiconductor layers for sensors and photovoltaics.
2015-2016	TÉT_14_FR-1-2015-0041, Hungarian–French Intergovernmental S&T Cooperation Programme Title: Characterization methods of semi-conductor nanowires grown by novel electromechanical techniques
2013-2015	TÉT_12_FR-1-2013-0016, Hungarian–French Intergovernmental S&T Cooperation Programme Title: Characterization of porous materials for microelectronics
2011-2012	TÉT_10-1-2011-0754, Hungarian–French Intergovernmental S&T Cooperation Programme Title: Defect engineering controlled by low energies He implantation in Si and GaN
2010-2012	OTKA K81842, The Hungarian Scientific Research Fund Title: Protein and nanocrystalline semiconductor layers for sensors and photovoltaics.

Publications (last five)

Emil Agocs, Ravikiran Attota, „Enhancing optical microscopy illumination to enable quantitative imaging”, Scientific Reports 8, 4782 (2018)

Agocs E, Zolnai Z, Rossall AK, van den Berg JA, Fodor B, Lehninger D, Khomenkova L, Ponomaryov S, Gudymenko O, Yukhymchuk V, Kalas B, Heitmann J, Petrik P., „Optical and structural characterization of Ge clusters embedded in ZrO₂”, APPLIED SURFACE SCIENCE 421: pp. 283-288. (2017)

Agocs Emil, Kozma Peter, Nador Judit, Hamori Andras, Janosov Milan, Kalas Benjamin, Kurunczi Sandor, Fodor Balint, Ehrentreich-Förster Eva, Fried Miklos, Horvath Robert, Petrik Peter, „Grating coupled optical waveguide interferometry combined with in situ spectroscopic ellipsometry to monitor surface processes in aqueous solutions”, APPLIED SURFACE SCIENCE 421: pp. 289-294. (2017)

Andras Saftics, Sándor Kurunczi, Barbara Türk, **Emil Agócs**, Benjámín Kalas, Péter Petrik, Miklós Fried, Attila Sulyok, Szilvia Bósze, Robert Horváth, “Spin coated carboxymethyl dextran layers on TiO₂ optical waveguide surfaces”, REVUE ROUMAINE DE CHIMIE 62:(10) pp. 775-781. (2017)

Fodor Bálint, Defforge Thomas, Agócs Emil, Fried Miklós, Gautier Gaël, Petrik Péter, „Spectroscopic ellipsometry of columnar porous Si thin films and Si nanowires”, APPLIED SURFACE SCIENCE 421: pp. 397-404. (2017)

Further (about 38) publications are collected on the hungarian official [MTMT](#) database

1st Marc 2019