Short CV

Name: Hugo Manuel Brito Águas
Born: 27, September, 1973, Barreiro, Portugal

Professional Information:
Position: Assistant Professor at the Materials Science Department (since 2005)
(Coordinator of the Materials for Electronics, Optoelectronics and Nanotechnology section)
(Coordinator of the Integrated Master Course in Micro and Nanotechnologies)
(Researcher at CENIMAT/I3N – National Associated Laboratory, Ranked top 10 in Portugal in all scientific areas, and at CEMOP/UNINOVA)
Institution: Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa
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Academic Formation:
(2005) PhD in Materials Engineering, Speciality in Microelectronics and Optoelectronics, by the Faculdade de Ciências e tecnologia da Universidade Nova de Lisboa, with the thesis "Devices of Metal-Insulator-Semiconductor (MIS) structure: Application to Position Sensors of Amorphous Silicon"
(2000) Master Degree in Materials Engineering by Universidade Nova de Lisboa, with the thesis "Influence of the R.F. Electrode Configuration of a PECVD Reactor in the Plasma Properties"
(1996) Graduate in Materials Engineering by the Faculty of Science and Technology of the Universidade Nova de Lisboa.

Expertise fields: Amorphous, Polymorphous and microcrystalline silicon films; silicon nanoparticles synthetized by Plasma Enhanced Chemical Vapour (PECVD); Plasma characterization; Optical characterization of materials; Spectroscopic Ellipsometry. Fabrication of Solar cells devices; Biosensors and Microfluidics; SERS; Photonic materials.

Publications:
- ResearcherID: C-4484-2013
- **ISI/WoK Nº of publications:** 131
- **ISI/WoK Nº of citations: >** 1530
- **WoK H impact factor:** 19
- **Google Scholar H impact factor:** 21

Top most relevant articles (*corresponding author):
- **Hugo Águas***, S. K. Ram, A. Araújo, D. Gaspar, A. Vicente, S. A. Filonovich, E. Fortunato, R. Martins, I. Ferreira, "Silicon thin film solar cells on commercial tiles", Energy Environ. Sci., 4 (2011) 4620, DOI: 10.1039/c1ee02303a **Impact Factor 15.49**
- **Hugo Águas***, Tiago Mateus, António Vicente, Diana Gaspar, Manuel J. Mendes, Wolfgang A. Schmidt, Luís Pereira, Elvira Fortunato, Rodrigo Martins, "Thin Film Silicon Photovoltaic Cells on Paper for Flexible Indoor Applications", Adv. Funct. Mater. (2015), DOI: 10.1002/adfm.201500636 **Impact Factor 10.4**
- António Vicente, **Hugo Águas**, Tiago Mateus, Andreia Araújo, Andriy Lyubchyk, Simo Siitonen, Elvira Fortunato, Rodrigo Martins,"Solar cells for self-sustainable intelligent packaging" J. Mater. Chem. A, 2015, Advance Article. DOI: 10.1039/C5TA01752A **Impact Factor 6.626**
- Bernacka-Wojcik, P. Lopes, A.C. Vaz, B. Veigas, P.J. Wojcik, P. Simões, D. Barata, E. Fortunato, P.V. Baptista, **Hugo Águas***, R. Martins, "Bio-microfluidic platform for gold nanoprobe based DNA detection — application to Mycobacterium tuberculosis", Biosensors and Bioelectronics 48 (2013) 87–93. DOI: 10.1016/j.bios.2013.03.079 **Impact Factor: 6.451**
- D. Gaspar, A. C. Pimentel, T. Mateus, J. P. Leitão, J. Soares, B. P. Falcão, A. Araújo, A. Vicente, S. A. Filonovich, **Hugo Águas**, R. Martins, I. Ferreira, "Influence of the layer thickness in plasmonic gold nanoparticles produced by thermal evaporation", Scientific Reports, 3 (2013) 1469, DOI: 10.1038/srep01469 **Impact Factor: 5.078**
- Iwona Bernacka-Wojcik, **Hugo Águas***, Fabio Ferreira Carlos, Paulo Lopes, Pawel Jerzy Wojcik, Mafalda Nascimento Costa, Bruno Veigas, Rui Igreja, Elvira Fortunato, Pedro Viana Baptista, Rodrigo Martins, "Single nucleotide polymorphism detection using gold nanoprobes and bio-microfluidic platform with embedded microlenses" Biotechnology and Bioengineering, (2015) Published Online: 10 MAR 2015 DOI 10.1002/bit.25542 **Impact Factor: 4.164**
- Iwona Bernacka-Wojcik, Susana Ribeiro, Pawel Jerzy Wojcik, Pedro Urbano Alves, Tito Busani, Elvira Fortunato, Pedro Viana Baptista, José António Covas, Loic Hilliou, **Hugo Águas***, Rodrigo Martins,

"Experimental optimization of a passive planar rhombic micromixer with obstacles for effective mixing in a short channel length", RSC Advances 4 (99), (2014) 56013-56025, DOI:10.1039/C4RA10160J **Impact Factor 3.708**

- Manuel J Mendes, Seweryn Morawiec, Tiago Mateus, Andriy Lyubchyk, **Hugo Águas**, Isabel Ferreira, Elvira Fortunato, Rodrigo Martins, Francesco Priolo, Isodiana Crupi, "Broadband light trapping in thin film solar cells with self-organized plasmonic nano-colloids" Nanotechnology 26 (2015) 135202 doi:10.1088/0957-4484/26/13/135202 **Impact Factor 3.672**
- Andreia Araújo, Carlos Caro, Manuel J Mendes, Daniela Nunes, Elvira Fortunato, Ricardo Franco, **Hugo Águas***, Rodrigo Martins, "Highly efficient nanoplasmonic SERS on cardboard packaging substrates", Nanotechnology 25 (2014) 415202 (8pp), doi:10.1088/0957-4484/25/41/415202. **Impact Factor 3.672**
- Andriy Lyubchyk, António Vicente, Bertrand Soule, Pedro Urbano Alves, Tiago Mateus, Manuel J Mendes, **Hugo Águas**, Elvira Fortunato, Rodrigo Martins, "Mapping the Electrical Properties of ZnO-Based Transparent Conductive Oxides Grown at Room Temperature and Improved by Controlled Postdeposition Annealing", Adv. Elect. Mat., First published: 18 Nov. 2015, DOI: 10.1002/aelm.201500287.

Funded Projects as PI or Institution Responsible:

- PTDC/SAU-BEB/102247/2008 - Hybrid electro optical microfluidic device for single cell analysis **(60 k€, Proj. Resp.)**
- ADI - 2009/003380 - "Solar Tiles - Desenvolvimento de Sistemas Solares Fotovoltaicos em Coberturas e Revestimentos Cerâmicos". **(380 k€, Proj. Resp.)**
- PTDC/CTMMET/113486/2009 - Cu2ZnSn(S,Se)4, a Novel In Free Absorber for Thin Film Solar Cells **(40 k€, Proj. Resp.)**
- PTDC/CTM-ENE/2514/2012 - Low temperature controlled incorporation of Si quantum dots in amorphous matrices (Si, SiC, and SiN) for application as active layers in single- and multi-junction solar cells **(200 k€, PI)**
- PTDC/BBB-IMG/1225/2012 - Development of a microfluidic platform for single cell studies **(50 k€, Proj. Resp.)**
- EXPL/CTM-NAN/0754/2013 - Disposable Low Cost Nanostructured Plasmonic Substrates for Ultrasensitive Surface Enhanced Raman: Application to the Detection of Pesticides **(50 k€, PI)**
- PTDC/CTM-NAN/2912/2014 - Disposable SERS Microfluidic platforms for food toxin detection **(190 k€, PI)**

Collaborative funded projects: Has participated in several national and international projects being the most relevant:

- "European Network on Amorphous-Silicon Device Technology-ASINET"; Brite-EuRam, GTC1-2000-28040 (2000/2003);
- "Development of new production techniques for highly efficient polymorphous solar cells- H-Alpha Solar"; Brite-EuRam, NNE5-1999-00133 (2000/2003);
- "Micropowder processing using low-pressure plasma technology – dusty plasmas" Brite-EuRam II, BRE2-CT94-0944 (1994/97).

Teaching Experience: Biosensores; Nanomaterials and Nanotechnology; Materials Processing for Electronics; Thin Film Technology; Materials Characterization Techniques; Materials for Energy Conversion.

PhD supervisions:

- Iwona Bernacka-Wojcik – "*Fabrication and optimisation of biosensors for biomolecular recognition based in the interaction of light with functionalised Au and TiO2 nanoparticles*". Especialidade em Nanomateriais e Nanotecnologia. (2008-2014);
- António Vicente – "*Desenvolvimento de células solares Nanomorfas em substratos cerâmicos para aplicação industrial*". Financiado pelo programa MIT-Portugal, Especialidade em Sistemas de Bio-Engenharia. (2009-);
- Andreia Araújo- *"Development of nanoparticle based plasmonic structures for Si solar cell applications ".* (2013-)

Relevant positions taken at National and International levels:

- Project evaluator for Fundação para a Ciência e Tecnologia;
- Project evaluator for Czech Science Foundation;
- Member of the Program Committee of PHOTONICS (International Conference on Photonics, Optics and Lasers)

Awards received: 2012 - Innovation Award in EnergyLiveExpo event for the Solar Tiles Project; 1996 - Best Student to graduate from Material Engineering course;

Caparica, 11th May, 2016

Hugo Águas