



## PERSONAL INFORMATION



## Mrs. Iulia ANTOHE (ARGHIR)

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Skype: arghir.iulia1

Sex: Female | Date of birth: 13/02/1988 | Nationality: Romanian | Marital Status: Married

## WORK EXPERIENCE

2016 – present\*

\*from 2017 I am in  
maternity leave

### Scientific Researcher (CS)

Laser Department, National Institute for Lasers, Plasma and Radiation Physics, Măgurele, Romania

- Development of a fiber optic - surface plasmon resonance (FO-SPR) sensing platform
- Biofunctionalization of nanomaterials (gold/magnetic particles) with different bioreceptors (i.e. DNA aptamers, antibodies, etc.)
- Materials synthesis and characterization
- Writing articles for peer-reviewed journals

2011 – 2016

### Marie Curie Early Stage Researcher

Biosensors group, MeBioS, BIOSYST, KU Leuven, Leuven, Belgium

- Improvements of fiber optic - surface plasmon resonance (FO-SPR) biosensors, used in medical diagnostics and in agro-food sector
- Bioassays development
- Laboratory sessions to master students
- Writing scientific reports on a periodical basis
- Scientific communications through conferences and workshops
- Writing articles for peer-reviewed journals

2014 (4 months)

### Visiting researcher

Institute of Nanoscience and Nanotechnology (ICN2), Barcelona, Spain

- Research on peanut allergen detection using surface plasmon resonance (SPR) and localized surface plasmon resonance (LSPR) platforms
- Cleanroom experience in the fabrication of LSPR sensors

2014 (2 months)

### Visiting researcher

Chemistry Department, Autonomous University of Barcelona, Barcelona, Spain

- Immunoglobulin E detection using a magnetic particle-based electrochemical platform
- Bio-functionalization of magnetic particles with different bioreceptors (e.g. antibodies, aptamers, etc.)

2009 – 2011

### Research assistant (ACS)

MDEO, Faculty of Physics, University of Bucharest, Bucharest, Romania  
National Institute of Material Physics, Bucharest, Romania

- Research in physics and nanotechnologies referring to the preparation and characterization of photovoltaic cells based on organic thin films and hybrid inorganic/organic structures
- Attended lectures, seminars and laboratory sessions
- Scientific communications through conferences

2010 (5 months)

### Socrates/Erasmus fellow

Université catholique de Louvain, Louvain-la-Neuve, Belgium

- Cleanroom experience in the fabrication of microelectromechanical systems
- Attended lectures, seminars and laboratory sessions

## MAIN RESEARCH INTERESTS

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- Research and development in materials science and bioengineering
- Synthesis and characterization of nanostructured materials
- Design and characterization of nano- /plasmonic biosensors
- Bioassay development

## EDUCATION AND TRAINING

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September 2011 – May 2016

### **Doctoral program (Ph.D.) in Bioscience Engineering**

Faculty of Bioscience Engineering, KU Leuven, Belgium

- PhD thesis: “*Fiber optic surface modifications for improved plasmonic biosensing*”

September 2009 – July 2011

### **Master program (M.Sc.) in Advance Materials and Nanostructures for Electronics and Optoelectronics**

University of Bucharest, Faculty of Physics, Bucharest – Măgurele, Romania

- Dissertation thesis: “*Fabrication and characterization of ZnO thin films for photovoltaic applications*”

September 2006 – July 2009

### **Bachelor program (B.Sc.) in Physics**

University of Bucharest, Faculty of Physics, Bucharest – Măgurele, Romania

- Specialization: “Medical Physics”
- Diploma thesis: “*Preparation and characterization of Hybrid photovoltaic structures based on nanostructured ZnO/CuPc*”

## ADDITIONAL TRAINING

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2011 – 2015

### **Thematic and Skills Courses Attendance**

University of Leuven, Leuven, Belgium

- Challenges in Materials Research; Biosensor Technology and Bio-electronics; Managing my PhD; Scientific writing; Effective Graphical Displays; Introduction to statistics with JMP

2009 – 2015

### **Summer Schools Attendance**

Autonomous University of Barcelona, Barcelona, Spain

- Magnetic particle based platforms and bioassays

International Conference Center of Transilvania University, Brasov, Romania

- International Summer School on Fundamentals and Basic Methods of Crystal Growth

Aristotle University of Thessaloniki, Thessaloniki, Greece

- 3<sup>rd</sup> International Summer School on Nanosciences & Nanotechnologies

2011 – 2015

### **Workshops Attendance**

Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

- Workshop on Microfabrication/Microfluidics

Uppsala University, Uppsala, Sweden

- Practical Workshop “Advanced Techniques in Molecular Medicine”

IMEC, Heverlee, Belgium

- NanoInk Nanolithography workshop

Philips, Eindhoven, Netherlands

- Systems architecture of integrated biosensors workshop

## PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C1	C2
French	B2	B2	B1	A2	A1
Spanish	B2	B1	A2	A2	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user  
Common European Framework of Reference for Languages

- Communication and writing skills** Excellent communication and scientific dissemination skills acquired through:
- Many scientific presentations and laboratory/seminar sessions held
  - Several attendances to conferences, workshops and summer schools
  - Writing of various scientific reports and peer-reviewed publications
- Analytical thinking** Problem solving and managerial skills acquired through:
- Experimental planning; Data analysis; Scientific writing; Lectures
- Organisational skills** Acquired through:
- Organization and presentation of 2 seminars, KU Leuven, Belgium (2014, 2015)
  - Member in the organizing committee of the first European Conference on Novel Technologies for In Vitro Diagnostics, KU Leuven, Belgium (2014)
  - Organization of a demonstration from “NanoSight” about nanoparticle tracking analysis, KU Leuven, Belgium (2012)
  - Member in the organizing committee of the National Fair of Education, University of Bucharest, Bucharest (2007-2009)
  - General secretary and active member of the Local Association of Physics Students, University of Bucharest, Bucharest (2008-2011)
- Mentoring skills** Acquired through:
- Laboratory sessions to master students (2012-2015)
  - Supervision of new PhD students in the group and master students (2012-2015)
- Computer skills**
- Proficient user of the Microsoft products (Windows, Office suite) and of the LaTeX platform
  - Origin (OriginLab); ImageJ; Photo, audio and video processing

## SCIENTIFIC OUTPUT

- Scholarships and awards**
- 2017:
- Materials Research Express – IOP Outstanding Reviewer Award 2017
  - Materials Research Express – IOP International Advisory Board Member
- From 2011 to 2014:
- Early stage researcher Marie Curie fellowship - European Commission
- From 2006 to 2009:
- Bachelor scholarship awarded by University of Bucharest
- Conferences**
- Participation at more than 20 national and international communication events.
- Scientific publications**
- I am the first author or co-author of 9 research papers published in peer-reviewed journals; 1 book and 2 book chapters
- Scientific reviewer**
- Materials Research Express; Biomedical Physics & Engineering Express; Nanotechnology; Journal of Optics; Journal of Physics D; Optics Communications

## WORKSHOPS &amp; CONFERENCES

**National and international conferences**

1. **Arghir, I.**, Spasic, D., Delpont, F., Lammertyn, J. *Surface modification strategies toward more stable and sensitive fiber optic – SPR biosensors*, Diatech 2014, Leuven, Belgium, 2014 (poster presentation).
2. Delpont, F., Knez, K., Janssen, K., **Arghir, I.**, Lu, J., Mariën, N., Spasic, D., Lammertyn, J. *Fiber optic biosensing for multiplex DNA and protein quantification*, Diatech 2014, Leuven, Belgium, 2014 (oral presentation).
3. **Arghir, I.**, Spasic, D., Decrop, D., Knez, K., Delpont, F., Lammertyn, J. *Silanization of 3D surfaces: a step forward toward more stable Fiber Optic – SPR biosensing platforms*, Biosensors 2014, Melbourne, Australia, 2014 (poster presentation).
4. Delpont, F., Knez, K., **Arghir, I.**, Mariën, N., Spasic, D., Lammertyn, J. *Fiber optic biosensing platform for real-time multiplex quantification and detection of bacterial DNA*, Biosensors 2014, Melbourne, Australia, 2014 (oral presentation).
5. Delpont, F., Knez, K., Janssen, K., **Arghir, I.**, Mariën, N., Tran, D., Spasic, D., Vermeir, S., Pollet, J., Lammertyn, J. *Aptamer and DNA hybridization assays on gold fiber optic sensors with nanoparticle signal enhancement*, OSA optical sensors, Barcelona, Spain, 2014 (oral presentation).
6. Delpont, F., Knez, K., **Arghir, I.**, Mariën, N., Spasic, D., Vermeir, S., Lammertyn, J. *Fiber optic biosensing for allergen and pathogen screening in food*, Rapid Methods Europe, Noordwijkerhout, The Netherlands, 2014 (oral presentation).
7. **Arghir, I.**, Delpont, F., Knez, K., Spasic, D., Lammertyn, J. *Strategies for Enhancing Fiber Optic SPR Sensor Performance*, Conference on Plasmonics, Leuven, Belgium, 2013 (poster presentation).
8. **Arghir, I.**, Knez, K., Janssen, K., Decrop, D., Spasic, D., Lammertyn, J. *Surface Nanostructuring and Silanization for Improved Fiber Optic SPR Biosensing*, 18th National Symposium on Applied Biological Sciences, Ghent, Belgium, 2013 (poster presentation).
9. **Arghir, I.**, Knez, K., Janssen, K., Pollet, J., Lammertyn, J., Spasic, D. *Nanostructuring Optical Surfaces towards FO-SPR Biosensors with Improved Performances*, International Conference on Scientific and Clinical Applications of Magnetic Carriers. Minneapolis, MN, USA, 2012 (poster presentation).
10. **Arghir, I.**, Knez, K., Janssen, K., Pollet, J., Lammertyn, J., Spasic, D. *Nanostructuring Fiber Optic – SPR Surfaces for Improving Bioassay Performance*, 2nd NanoSensEU symposium on biosensor development. Trends and technology, Hasselt, Belgium, 2012 (poster presentation).
11. Iftime, S., Majkic, A., Besleaga, C., Radu, A., **Arghir, I.**, Florica, C., Radu, M., Bratina, G., Antohe, S. *Study of Physical Properties of ITO/PEDOT/P3HT:PCBM(1:1)/LiF/Al Photovoltaic Cells*, Annual Scientific Conference, University of Bucharest, Romania, 2010 (oral presentation).
12. Simon, S., Besleaga, C., Stan, G.E., Ion, L., **Arghir, I.**, Antohe, S. *The Influence of Magnetron Sputtering Conditions on the Physical Properties of (001) Oriented Nanostructured ZnO Thin Films*, Physics Conference Tim-10, Timisoara, Romania, 2010 (poster presentation).
13. Iftime, S., Besleaga, C., **Arghir, I.**, Florica, C., Ion, L., Antohe, S. *Electrical and optical properties of ITO/PEDOT/P3HT:PCBM (1:1)/LiF/Al photovoltaic cells*, National Physics Conference (CNF), Iasi, Romania, 2010 (poster presentation).
14. Besleaga, C., Stan, G., **Arghir, I.**, Florica, C., Radu, A., Nemnes, G.A. *Structural, electrical and optical properties of rf-magnetron sputtered ZnO thin films*, National Physics Conference (CNF), Iasi, Romania, 2010 (poster presentation).
15. Besleaga, C., Nistor, M., **Arghir, I.**, Simon, S., Ion, L., Antohe, S. *Metal-Semiconductor transition in q-2D Disordered Systems*, Annual Scientific Conference 2010, University of Bucharest, Romania, 2010 (oral presentation).
16. Iftime, S., Majkic, A., Besleaga, C., Radu, A., **Arghir, I.**, Florica, C., Radu, M., Ion, L., Bratina, G., Antohe, S. *Study of Physical Properties of ITO/PEDOT/P3HT:PCBM(1:1)/LiF/Al Photovoltaic Cells*, 11th International Balkan Workshop on Applied Physics, Constanta, Romania, 2010 (oral presentation).
17. Iftime, S., Majkic, A., Besleaga, C., Radu, A., Tazlaoanu, C., **Arghir, I.**, Radu, M., Craciun, S., Ion, L., Bratina, G., Antohe, S. *Study of electrical and optical properties of ITO/PEDOT/P3HT:PCBM(1:1)/LiF/Al photovoltaic structures*, E-MRS Spring Meeting, Strasbourg, France, 2010 (poster presentation).
18. Besleaga, C., Stan, G.E., **Arghir, I.**, Ion, L., Antohe, S. *Structural, Electrical and Optical Properties of RF-Sputtered ZnO Thin Films*, 11th International Balkan Workshop on Applied Physics, Constanta, Romania, 2010 (oral presentation).
19. **Arghir, I.**, Besleaga, C., Florica, C., Mitran, T., Tazlaoanu, C., Covlea, V., Ion, L., Antohe, S. *Properties of nanostructured ZnO Thin Films for Photovoltaic Applications*, Annual Scientific Conference 2009, University of Bucharest, Romania, 2009 (oral presentation).
20. Besleaga, C., **Arghir, I.**, Mitran, T., Tazlaoanu, C., Dina, N., Covlea, V., Nemnes, A., Ion, L., Antohe, S. *Preparation and Characterization of Hybrid Photovoltaic Structures Based on nanostructured ZnO/CuPc*, Brasov, Romania, 2009 (oral presentation).
21. Iftime, S., Skraba, P., Tazlaoanu, C., Radu, A., Magherusan, L., Radu, M., Besleaga, C., **Arghir, I.**, Ion, L., Bratina, G., Antohe, S. *Electrical and Photoelectrical Properties of Organic Photovoltaic Cells*, 6th International Conference – NN09 & 3rd International Summer School- SS-NN09 on Nanosciences & Nanotechnologies, Thessaloniki, Greece, 2009 (poster presentation).
22. **Arghir, I.**, Besleaga, C., Florica, C., Mitran, T., Tazlaoanu, C., Covlea, V., Ion, L., Antohe, S. *Properties of nanostructured ZnO Thin Films for Photovoltaic Applications*, Annual Scientific Conference 2009, University of Bucharest, Romania, 2009 (oral presentation).
23. Florica, C., **Arghir, I.**, Skraba, P., Crisan, A.D., Magherusan, L., Tazlaoanu, C., Ion, L., Antohe, S. *Electrical and Photoelectrical Properties of Organic Photovoltaic Cells*, International Workshop on RENEWABLE ENERGY SOURCES, Bucharest, Romania, 2008 (poster presentation).
24. Florica, C., **Arghir, I.**, Crisan, A.D., Tazlaoanu, C., Ion, L., Antohe, S. *Electrical and Photoelectrical Properties of Organic Photovoltaic Cells*, International Conference of Physics Students (ICPS), Krakow, Poland, 2008 (poster presentation).

## SCIENTIFIC PUBLICATIONS

### Reviews, proceedings and research papers

1. **Antohe, I.**, Spasic D., Delpont, F., Li, J., Lammertyn, J. *Nanoscale patterning of gold-coated optical fibers for improved plasmonic sensing*, Nanotechnology, 2017, 28 (21), 215301, doi: [10.1088/1361-6528/aa6b53](https://doi.org/10.1088/1361-6528/aa6b53).
2. **Antohe (Arghir), I.**, Schouteden, K., Goos, P., Delpont, F., Spasic D., Lammertyn, J. *Thermal annealing of gold coated fiber optic surfaces for improved plasmonic biosensing*, Sensors and Actuators B, 2016, Chemical, 229, 678-685, doi: [10.1016/j.snb.2016.02.034](https://doi.org/10.1016/j.snb.2016.02.034).
3. **Arghir, I.**, Delpont, F., Spasic, D., Lammertyn, J. *Smart design of fiber optic surfaces for improved plasmonic biosensing*, New Biotechnology, 2015, 32 (5), 473-484, doi: [10.1016/j.nbt.2015.03.012](https://doi.org/10.1016/j.nbt.2015.03.012).
4. Shokribousjein, Z., Riveros Galan, D., Losada-Pérez, P., Wagner, P., Lammertyn, J., **Arghir, I.**, Golreihani, A., Verachtert, H., Aydın, A., De Maeyer, M., Titze, J., Ilberg, V., Derdelinckx, G. *Mechanism of Nonpolar Model Substances to Inhibit Primary Gushing Induced by Hydrophobin HFBI*, Journal of Agricultural and Food Chemistry, 2015, 63, 4673-4682, doi: [10.1021/acs.jafc.5b01170](https://doi.org/10.1021/acs.jafc.5b01170).
5. **Arghir, I.**, Spasic, D., Verlinden, E., Delpont, F., Lammertyn, J. *Improved surface plasmon resonance biosensing using silanized optical fibers*, Sensors and Actuators B, 2015, Chemical, 216, 518-526, doi: [10.1016/j.snb.2015.04.069](https://doi.org/10.1016/j.snb.2015.04.069).
6. Besleaga, C., Ion, L., Ghenescu, V., Socol, G., Radu, A., **Arghir, I.**, Florica, C., Antohe, S. *Transparent indium zinc oxide thin films used in photovoltaic cells based on polymer blends*, Thin Solid Films, 2012, 520(22), 6803-6806, doi: [10.1016/j.tsf.2012.07.030](https://doi.org/10.1016/j.tsf.2012.07.030).
7. Simon, S., Besleaga, C., Stan, G.E., Ion, L., **Arghir, I.**, Antohe, S. *The influence of magnetron sputtering conditions on the physical properties of (00) oriented nanostructured ZnO thin films*, AIP Conference Proceedings, 2011, 1387, 198-202, doi: [10.1063/1.3647074](https://doi.org/10.1063/1.3647074).
8. Florica, C., **Arghir, I.**, Ion, L., Enculescu, I., Antohe, V.A., Radu, A., Radu, M., Chisulescu, G., Dina, N., Antohe, S. *Production and characterization of CdTe wire arrays for hybrid inorganic/organic photovoltaic cells*, Digest Journal of Nanomaterials and Biostructures, 2011, 6(1), 21-27.
9. Iftime, S., Majkic, A., Besleaga, C., Antohe, V.A., Radu, A., Radu, M., **Arghir, I.**, Florica, C., Ion, L., Bratina G., Antohe, S. *Study of electrical and optical properties of ITO/PEDOT/P3HT:PCBM (1:1) LiF/Al photovoltaic structures*, Journal of optoelectronics and advanced materials, 2010, 12(10), 2171-2175.

### Books and book chapters

1. **Antohe, I.** *Fiber Optic Surface Modifications for Improved Plasmonic Biosensing*, LAMBERT Academic Publishing, Republic of Moldova, 2017, ISBN: [978-3-330-32427-5](https://www.amazon.com/dp/9783330324275).
2. Delpont, F., Knez, K., Janssen, K., **Arghir, I.**, Mariën, N., Tran, D., Spasic, D., Vermeir, S., Pollet, J., Lammertyn, J. *Aptamer and DNA hybridization assays on gold fiber optic sensors with nanoparticle signal enhancement*, Advanced Photonics, OSA Technical Digest, paper JTU1C.2, 2014, doi: [10.1364/BGPP.2014.JTU1C.2](https://doi.org/10.1364/BGPP.2014.JTU1C.2); ISBN: [978-1-55752-820-9](https://www.amazon.com/dp/9781557528209).
3. Antohe, S., Enculescu, I., Besleaga, C., **Arghir, I.**, Antohe, V. A., Covlea, V., Radu, A., Ion, L. *Hybrid Nanostructured Organic/Inorganic Photovoltaic Cells*, Nanostructured Materials and Nanotechnology IV: Ceramic Engineering and Science Proceedings (Eds: S. Mathur, S. S. Ray and T. Ohji), 2010, 31(7), Ch. 9, John Wiley & Sons, Inc., Hoboken, NJ, USA, ISBN: [978-0-470-59472-8](https://www.amazon.com/dp/9780470594728), doi: [10.1002/9780470944042.ch9](https://doi.org/10.1002/9780470944042.ch9).