

PERSONAL INFORMATION MIHAELA FILIPESCU (former MORAR)

 National Institute for Lasers, Plasma, and Radiation Physics

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Sex Female | Date of birth 16/02/1978 | Nationality Romanian

WORK EXPERIENCE

June 2019 – present

Scientific researcher I

National Institute for Lasers, Plasma, and Radiation Physics, Magurele, Romania

- Processing of metal oxides by laser and plasma techniques for applications in the field of sensors; investigations of surfaces morphology and structure

June 2016 – May 2019

Scientific researcher II

National Institute for Lasers, Plasma, and Radiation Physics, Magurele, Romania

- Processing of advanced materials as thin films by laser and plasma methods

2008 – May 2016

Scientific researcher III

National Institute for Lasers, Plasma, and Radiation Physics, Magurele, Romania

- Growth of nuclear ceramics as nanostructured thin films by laser and plasma techniques; thin film surface investigations by atomic force microscopy

2004 – 2008

Scientific researcher

National Institute for Lasers, Plasma, and Radiation Physics, Magurele, Romania

- Thin film processing with lasers and plasma (boron nitride, zinc oxide, tungsten oxide)

2001 – 2004

Research assistant

National Institute for Lasers, Plasma, and Radiation Physics, Magurele, Romania

- Laser processing of high-k dielectric materials

EDUCATION AND TRAINING

October 2004 – June 2011

PhD in Physics

University of Bucharest, Faculty of Physics

- Title of the thesis: Contributions at the study of structural, electrical, and optical properties of nanostructured thin layers used for obtaining electronic and optoelectronic devices; PhD supervisor: Prof. Dr. Stefan Antohe
- Level in national or international classification: Summa cum laudae

October 2001 – July 2002

MSc in Physics

University of Bucharest, Faculty of Physics

- Title of the thesis: Growth of ZrO₂ thin films by laser ablation
- Area of study: Optical Technologies with lasers and plasma

October 1996 – July 2001

BSc in Physics

University of Bucharest, Faculty of Physics

- Title of the thesis: InN thin films deposited by laser ablation

PERSONAL SKILLS

Mother tongue(s) Romanian

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

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)

Organisational / managerial skills

PROJECT MANAGEMENT

- Within the PN II program – Human Resources, post-doctoral project, **PD 100**, *Sensors based on tungsten oxide nanostructured obtained by laser and plasma techniques for the detection of nitrogen dioxide* (SENSWO) 09.01.2012 - 13.12.2013 (**project director**);
- SCIEX Fellowship – Romania-Switzerland, **SCIEX 13.251**, *Laser printing of hybrid nanocomposited for chemiresistive sensors* (NANO-SENS) 01.09.2014 - 28.02.2015 (**project director**);
- Within PN II, Partnerships in priority fields, **PCCA 38**, project, *Antireflex thin films for high power lasers with ultra-short pulses* (ARCOLAS) 01.07.2014 - 30.09.2017 (**project director**);
- Complex projects completed in consortia CDI, **33PCCDI** project, *Multiagent intelligent systems platform for the monitoring of water quality on the Romanian sector of the Danube and Danube Delta* (MultiMonD2) 01.03.2018 – 31.12.2020 (**project director**);
- **Project responsible:** in the frame of PN III Program: **314PED/2020**: Biosensor with graphene-based surface acoustic waves functionalized with anti-alpha-fetoprotein monoclonal antibody for the diagnosis of liver cancer (SAWSENSE), August 2020 – July 2022; **459PED/2020**: Air-Water Innovative System for Environment Monitoring (AWISEM), November 2020 – November 2022;
- PN III, **TE1**, Tungsten oxide/polymer composites for sensor applications (CO-POLYSENS), 15.05.2022 – 14.05.2024 (**project director**);
- **Scientific coordinator** from INFLPR for **disertation thesis** with title „MAPLE processed sensors for the detection of nitrites in water”, June 2022.

ORGANISATIONAL SKILLS

- **Deputy Head of Lasers Department** (S200) during November 2021 – September 2022;
- **Head of Photonic Processing of Advanced Materials group** (<http://ppam.inflpr.ro/>) – coordinator of 20 people from 3 March 2021 to September 2022;
- **Co-organizer** of the symposium *Laser Interactions with Materials: from fundamentals to applications*, during the EMRS Spring Meeting, Nice – France, 27 - 31 May 2019;
- **Member of the Steering Committee** of the conference: International Conference on Laser Ablation: USA (2019), Japan (2022), Greece (2024);
- **Member of the Organizing Committee** of the ICLPR-ST conference: Romania (2022, 2024);
- **Member of the INFLPR Scientific Council** between May 2018 and May 2022;
- **Member** in a doctoral committee at University of Craiova.

Job-related skills	<ul style="list-style-type: none"> ▪ Participation at summer schools: 1st International School on <i>Laser-surface interactions for new materials production: tailoring structure and properties</i> (13-20 July 2008, Venice – Italy) ▪ Graduation from the Executive Manager Course (February 21-23, 2018) organized by SC Schultz Consulting SRL ▪ Graduation from FIT-4-NMP 4th Technology Transfer Interactive Workshop (ATTP recognised), ASTP (18-19 September 2023) Bucharest, Romania
Digital competence	Microsoft Office, XLS, Origin
Other skills	<p>Reviewer for Applied Surface Science, Romanian Reports in Physics; Applied Physics A, Journal of Molecular Structure, Journal of Microscopy and Ultrastructure, Nanomaterials</p> <p>Evaluator for national and international projects;</p> <p>Guest Editor to Applied Surface Science, Volume 513, 30 May 2020;</p>
Driving licence	B
Publications	<p>The results of the activity in the area of processing and characterization of thin films resulted in: 86 published papers (70 in ISI journals), and 4 book chapters. Hirsch index: 15;</p> <p>The total number of citations according to Web of Science: 700</p>
The profile address	<p>Scopus ID: https://www.scopus.com/authid/detail.uri?authorId=16835872500;</p> <p>ORCID: https://orcid.org/0000-0003-4073-8555;</p> <p>Researcher ID: http://www.researcherid.com/rid/A-7196-2017;</p> <p>Brainmap: https://www.brainmap.ro/public-profile-82826012;</p>
Presentations	<p>Over 100 presentations: posters, oral and invited presentations (most recent):</p> <ol style="list-style-type: none"> 1. Invited lecture: M. Filipescu, Alexandra Palla Papavlu, Valentina Dinca, Anca Bonciu, Maria Dinescu, Laser fabricated coatings for biomedicine, HPLA Conference, SUA - Santa Fe, 13-15 April 2021 2. Oral presentation: A. I. Radu, V-A. Antohe, S. Iftimie, I. Antohe, M. Filipescu, A. Radu, D. Coman, M.L. Stingescu, E-I. Bancu, M. Dinescu, S.Antohe, New composite based on SnO₂ nanoparticles P3HT:PC71BM co-polymer blend, as absorber in bulk heterojunction photovoltaic cells, E-MRS, France, 30.05 - 03.06.2022 3. Oral presentation: S. Brajnicov, A. Palla-Papavlu, M. Filipescu, V. Satulu, T. Tozar, M. Dinescu, Application of matrix-assisted pulsed laser evaporation for the realization of superhydrophobic polymer surfaces, E-MRS, France, 30.05 - 03.06.2022 4. Oral presentation: A. I. Bercea, C. Romanitan, C. Craciun, L. M. Stingescu, M. Filipescu, M. Dinescu, Lead zirconate titanate thin films made by pulsed laser deposition on 4-inch silicon substrates, COLA 2021/2022 16th International Conference on Laser Ablation April Matsue, Japan, 24 – 29.04.2022; 5. Oral presentation: I.A. Bercea, M. L. Ciurea, A.M. Lepadatu, M. Dragoman. M. Filipescu, V. Ion, A. Moldovan, V.A. Maraloiu, V.S. Teodorescu, Maria Dinescu, PLD of ferroelectric HfO₂ thin films, E-MRS, France, 30.05 - 03.06.2022 6. Oral presentation: F. Nedelcuț, M. Filipescu, M. Dumitru, Coandă effect aerodyne – a new platform fit for monitoring environment in wetlands using sensing membranes based on CNT, ICLPR-ST Conference, Romania, 7-10 iunie 2022; 7. Oral presentation: M. Filipescu, A. Palla Papavlu, A. Bercea, M. Dinescu, Dielectric layers prepared by PLD for optical coatings, AIV XXVI Conference, Italy, 10-15.11.2023; 8. Oral presentation: A. Bonciu, S. Orobeti, L. Sima, M. Icriverzi, M. Filipescu, A. Moldovan, A. Popescu, V. Dinca, A. Vasilescu, M. Dinescu, PLD-based pyramidal-shaped ceria biointerfaces, EMRS Conference, France, 29.05 -2.12.2023; 9. Oral presentation: S. Dobrescu, A. Bercea, S. Brajnicov, I. Boerasu, A. Bonciu, C. Craciun, M. Filipescu, M. Dinescu, Nanocomposite layers based on tungsten oxide/polymer processed by laser methods, Bucharest University Faculty of

- Physics 2023 Meeting, 26.05.2023, Romania
10. Oral presentation: M. Filipescu, A. Palla Papavlu, A. Bercea, M. Dinescu, Dielectric layers prepared by PLD for optical coatings, aiv XXVI Conference, Sapienza University of Rome, Nov 07 – 10 2023, Lazio - Italy

ANNEXES

- Chapters in books**
1. Vasilescu, A., Dinca, V., **Filipescu, M.**, Rusen, L., Hosu, I.S., Boukherroub, R., Szunerits, S., Dinescu, M., Peteu, S.F.
Chapter 9: Recent approaches to enhance the selectivity of peroxydinitrite detection,
Book: Peroxydinitrite Detection in Biological Media: Challenges and Advances
Print publication date: 21 Oct 2015
RSC Detection Science, (7), pp. 166-185.
 2. **Filipescu M.**, Palla Papavlu A., Dinescu M.
Chapter 3: Functional metal oxide thin films grown by pulsed laser deposition
Book: Crystalline and Non-crystalline Solids
(2016) InTech, pp. 37-55
ISBN 978-953-51-4721-3
 3. Palla Papavlu A, Dinca V, **Filipescu M**, Dinescu M
Chapter 8: Matrix assisted pulsed laser evaporation of organic thin films: Applications in biology and chemical sensors
Book: Laser Ablation - From Fundamentals to Applications
(2017) InTech, pp. 171-189
 4. **M. Filipescu**, A. Palla-Papavlu, P. M. Ossi, M. Dinescu,
Chapter 15: Nanostructured tungsten oxide using pulsed laser deposition for bio- and environmental sensing applications,
Book: Functional nanostructured interfaces for environmental science and biomedical applications
(2019) Elsevier, ISBN: 978-0-12-814401-5
- Recent published papers**
1. Sirjita, E.N., Rusen, L., Brajnicov, S., Craciun C., Ion V., Filipescu, M., Dinescu, M.
Properties of hafnium and aluminium silicates coatings obtained by PLD
(2021) Coatings, 11(7), 753
 2. Bonciu, A.F.; Filipescu, M.; Voicu, S.I.; Lippert, T.; Palla-Papavlu, A.
Facile Fabrication of Hybrid Carbon Nanotube Sensors by Laser Direct Transfer
(2021) Nanomaterials, 11, 2604.
 3. C. Craciun; M. Filipescu; A. Palla-Papavlu; S. Brajnicov; T. Tozar; F. Scheaua; A. Bonciu; F. Nedelcu; M. Dinescu
Sensing membranes based on CNT nanocomposites processing for air and water monitoring,
(2021) International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters (MetroSea),
 4. Radu, A.I., Antohe, V.-A., Iftimie, S., Antohe, I., Filipescu, M., Radu, A., Coman, D., Stingescu, M.L., Dinescu, M., Antohe
Study of a new composite based on SnO₂ nanoparticles - P3HT:PC71BM co-polymer blend, used as potential absorber in bulk heterojunction photovoltaic cells
(2022) Materials Today Communications, 33, art. no. 104757
 5. Nicoara, A.I., Eftimie, M., Elisa, M., Vasiliu, I.C., Bartha, C., Enculescu, M., Filipescu, M., Aguado, C.E., Lopez, D., Sava, B.A., Oane, M.
Nanostructured PbS-Doped Inorganic Film Synthesized by Sol-Gel Route
(2022) Nanomaterials, 12 (17), art. no. 3006
 6. Palla-Papavlu, A., Vizireanu, S., Filipescu, M., Lippert, T. High-Sensitivity Ammonia Sensors with Carbon Nanowall Active Material via Laser-Induced Transfer
(2022) Nanomaterials, 12 (16), art. no. 2830,
 7. Andrei, F., Boerasu, I., Filipescu, M., Palla-Papavlu, A.
Facile Modification of Flexible Electrodes via Laser Transfer
(2022) Materials, 15 (7), art. no. 2488, .
 8. Craciun, C., Andrei, F., Bonciu, A., Brajnicov, S., Tozar, T., Filipescu, M., Palla-Papavlu, A., Dinescu, M.
Nitrites Detection with Sensors Processed via Matrix-Assisted Pulsed Laser Evaporation
(2022) Nanomaterials, 12 (7), art. no. 1138
 9. M. Filipescu , S. Dobrescu, A. I. Bercea, A. F. Bonciu , V. Marascu , S. Brajnicov, A. Palla-Papavlu,

Polypyrrole–Tungsten Oxide Nanocomposite Fabrication through Laser-Based Techniques for an Ammonia Sensor: Achieving Room Temperature Operation, (2024) Polymers, 16(1), 79

- Awards:**
1. Special Award , gold medal, Electrochemical Sensors based on micro and nano structured Ceria Layers obtained by laser methods for th detection of NADH and biosensors, Dinca V, Bonciu A., Vasilescu A, Filipescu M, International Exhibition of Scientific Research, Euroinvent 14 Edition European Exhibition of Creativity and Inovation, 26-28 May 2022
 2. Bronze medal, Electrochemical Sensors based on micro and nano structured Ceria Layers obtained by laser methods for th detection of NADH and biosensors, Dinca V, Bonciu A., Vasilescu A, Filipescu M, International Exhibition of Scientific Research, Euroinvent 14 Edition European Exhibition of Creativity and Inovation 2022, 26-28 May 2022
 3. Gold medal, Tungsten oxide/polymer composites for sensor applications (CO-POLYSENS), M. Filipescu, A. Bercea, A. Palla-Papavlu, 4th International Exhibition InventCor, 14 – 16 September 2023, Deva – Romania
 4. Gold medal, Laser transfer of graphene sheets for the fabrication of sensors: process optimization via time-resolved imaging, A. Palla-Papavlu, M. Filipescu, C. Viespe, A. Bonciu, 4th International Exhibition InventCor, 14 – 16 September 2023, Deva – Romania
 5. Gold medal, Electrochemical Sensors based on micro and nano structured Ceria Layers obtained by laser methods for th detection of NADH and biosensors, Dinca V, Bonciu A., Filipescu M, Vasilescu A, 4th International Exhibition InventCor, 14 – 16 September 2023, Deva – Romania
 6. Diploma of excellence and Gold medal, Method for obtaining WO₃-PPy composite layers with high specific surface area that can be integrated into resistive sensors, M. Filipescu, A. Bercea, S. Brajnicov, A. Bonciu, A. Palla Papavlu, The International Exhibition of Research, Innovations and Inventions - PRO INVENT XXI, 25-27 October 2023, Cluj-Napoca – România
 7. Diploma of excellence, Method for obtaining WO₃-PPy composite layers with high specific surface area that can be integrated into resistive sensors, M. Filipescu, A. Bercea, S. Brajnicov, A. Bonciu, A. Palla Papavlu, The International Exhibition of Research, Innovations and Inventions - PRO INVENT XXI, 25-27 October 2023, Cluj-Napoca – România
 8. Diploma of excellence and Gold medal, Method for obtaining ceria thin films with mesoporous arhitecture for green energy, A. Bercea, M. Filipescu, I. Boerasu, A. Palla Papavlu, The International Exhibition of Research, Innovations and Inventions - PRO INVENT XXI, 25-27 October 2023, Cluj-Napoca – România
 9. Diploma of excellence and Gold medal, Resistive sensor for ammonia detection with sensitive materials based on graphene and an obtaining procedure, A. Palla Papvlu, M. Filipescu, S. Brajnicov, The International Exhibition of Research, Innovations and Inventions - PRO INVENT XXI, 25-27 October 2023, Cluj-Napoca – România
 10. Special award, Electrochemical Sensors based on micro and nano structured Ceria Layers obtained by laser methods for th detection of NADH and biosensors, Dinca V, Bonciu A., Vasilescu A, Filipescu M, 4th International Exhibition InventCor, 14 – 16 September 2023, Deva – Romania
- Patents :**
1. Request A/00462/18.08.2023
M. Filipescu, A. Bercea, Ș. Dobrescu, A. Palla-Papavlu, Process for obtaining tungsten oxide layers with mesoporous morphology for resistive sensors
 2. Request A/00510/19.09.2023
M. Filipescu, A. Bercea, S. Brajnicov, A. Bonciu, A. Palla-Papavlu, Method for obtaining WO₃-PPy composite layers with high specific surface area that can be integrated into resistive sensors

3. Request A/00480/01.09.2023
A. Bercea, M. Filipescu, I. Boerasu, A. Palla Papavlu, Process for obtaining of mesoporous ceria thin films for green energy
4. Request A/00474/29.08.2023
A. Palla-Papavlu, M. Filipescu, S. Brajnicov, Resistive sensor for ammonia detection with sensitive materials based on graphene and an obtaining procedure
5. Published a202100717/26.11.2021
V. Dinca, A. Bonciu, M. Filipescu, A. Vasilescu, Electrochemical Sensors based on micro and nano structured Ceria Layers obtained by laser methods for th detection of NADH and biosensors
6. Request A/00256/19.05.2023
A. Moldovan, M. Filipescu, I. Boerasu, A. Marinescu, A. Radu, M. Dinescu, Platform for morphological evaluation of AFM tips
7. Request A/00657/06.11.2023
M. Filipescu, A. Bercea, Ş. Dobrescu, C. Crăciun, I. Boeraşu, Process for obtaining micro/nano/mesoporous ceria membranes usable in the elimination of contaminants resulting from nuclear activities
8. Request A/00605/25.10.2023
A. Bercea, M. Filipescu, A. Moldovan, A. Radu, M. Dinescu, Process for obtaining PZT perovskite films by adapting a large-area PLD system

Date: 04.02.2024