

PERSONAL
INFORMATION

Bogdana MITU



 National Institute for Laser, Plasma and Radiation Physics
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Sex F | Date of birth 06/09/1974 | Nationality Romanian

 POSITION WITHIN THE
PROJECT

Senior scientist

 WORK
EXPERIENCE

Employer:

National Institute for Laser, Plasma and Radiation Physics (INFLPR)
 (Research and development institution, non-profit organization)
www.infim.ro

1 July 2014
– present

Head of Low Temperature Plasma Physics Laboratory

Insures the integrated activity of the research groups of the Laboratory in order to accomplish the institutional scientific strategy; represents the Laboratory in relation to the other Departments and to various research organizations and companies in order to establish collaborations; manages research and economical contracts, disseminates the results by presenting them to the international conferences and meetings, and by publishing.

November 2016
– June 2017

Scientific Secretary INFLPR

Identifies the opportunities for participation in research programmes and projects, for promoting the research, development and innovation results in the private, academic and social media, supervises the scientific events of the Institute with the participation of Romanian and foreign experts; organizes, guides and controls the publications for increasing the institute visibility.

Represents the Institute interests, according to the delegation, in relation with the financing and monitoring scientific organizations, with research organizations and companies.

1 October 2011 onward

**Research
Senior Scientist, Ist degree**

Project manager for grants and research projects, elaboration of scientific papers, design and coordination of experiments in the field of plasma diagnostics, material processing by plasma and lasers for modification of surface properties, synthesis of new materials and composites with various applications, dissemination of results

April 2009 – October 2011

Senior Scientist, IInd degree

Design and coordination of laboratory experiments (plasma diagnostics, thin film deposition by plasma and laser techniques, material characterization); proposals and management of research projects and grants; elaboration of scientific papers, publications and dissemination

September 1997 – April 2009 Passing through all scientific degrees from research assistant to Senior Scientist IIIrd degree; complexity of attributions and responsibilities increased along the years

EDUCATION AND TRAINING

December 1997- March 2003 **PhD degree in exact sciences, physics specialization; qualification “very good” and distinction “Summa cum Laudae”**
University of Bucharest, Faculty of Physics
Thesis title: “Research regarding the physical-chemical processes in plasmas used in carbon-rich film deposition” – fundamental and applicative aspects related to the plasma and laser processing of carbon – based materials.

October 1992-June 1997 **Physicist Engineer, specialization Technological Physics, department of Optotechniques and optical technologies with lasers and plasmas**
University of Bucharest, Faculty of Physics
Licence title: “Carbon nitride deposition by plasma beam generated in combined RF and DC discharge” – plasma generation in combined configuration and its use for carbon nitride thin film deposition.

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1 proficient user	C2 proficient user	C1 proficient user	C1 proficient user	C2 proficient user
Italian	B1 independent user	B2 independent user	B2 independent user	B1 independent user	A2 basic user

Replace with name of language certificate. Enter level if known.

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

Communication skills Team leader for projects won by competition (5), communication and collaborative skills; Team work in various research teams, according to projects specificity, with people having different levels of knowledge, specialization or nationalities;
Mediating skills: 4 years' experience in the Disciplinary commission of the Institute, representing the syndicate members and 4 years representant of employer
Chairman during several sessions on E-MRS Conferences in 2010, 2014, 2015 and 2016 and ESCAMPIG Conference in 2016

Organisational / managerial skills

- Scientific Secretary of Plasma Physics Division, Romanian Physical Society, since June 2017
- Vicepresident of Plasma Physics Division, Romanian Physical Society 2013-May 2017
- Scientific secretary of Low Temperature Plasma Physics Department in the period 2008 - 2014
- Scientific secretary of the 14th, 15th and 16th editions of the International Conference of Plasma Physics and Application (CPPA 2007, Brasov, CPPA 2010 Iasi, CPPA2013, Magurele Romania), managing especially during the 14th & 16th editions the conference programmes, Book of Abstracts and the Conference volumes
- Scientific Secretary of Fusion for Energy – Romania Programme – Capacities, Module III – October 2010 – March 2012, June - December 2013, October - December 2014
- Scientific Secretary of the Scientific Council of the Institute (NILPRP) since May 2014

Job-related skills

- Development of innovative deposition systems by using combined techniques (e.g. combined deposition from sublimation and plasma polymerization of the solid monomers (parylene), RF discharge assisted pulsed laser deposition, plasma enhanced chemical vapor deposition combined with magnetron sputtering) for obtaining multifunctional materials with improved properties;
- Spectral, electrical and mass spectrometry diagnostics of the plasma sources used in materials processing, in order to identify the active species, the radicals formed upon chemical reactions in the plasma and of the processes responsible for the deposition mechanisms.
- Synthesis of new materials by using plasma and laser techniques, for applications in various fields, from gas sensors to modern electronics based on transparent and conductive oxides, conductive polymers, fuel cells; characterization of the obtained materials by using specific techniques like XPS, XRD, AFM, SEM, TEM, ellipsometric spectroscopy, UV-Vis absorption, electrical measurements and contact angle measurements.

Digital competence

Competent with Microsoft Word, Excel, PowerPoint, Outlook, Origin programs

Driving licence

B, since 1995..

ADDITIONAL INFORMATION
Publications

- 50 papers in ISI journals, from which 22 in the last 5 years - See Annex 1 for the list of publications in the last 5 years
- more than 30 extended proceedings & more than 70 contributions as oral and poster presentations at international conferences
- more than 280 citations of the published articles, excluding self-citations; Hirsch index 12
- 9 invited lectures and seminaries abroad

Projects

- 1 NATO- reintegration PDD (CP)-(CPB.EAP.RIG 981644) project May 2005- October 2008 - "Multifunctional oxides prepared by laser and plasma techniques" – project director
- November 2004- July 2006- National CERES Programme – Contract 4- 177/2004 "Organic composite materials obtained by plasma polymerization" –project director
- November 2005 – October 2007 - National CEEX Programme Young researchers project 3173- "Metalic oxides with High k dielectric constant obtained by laser and plasma techniques" –project director
- September 2007 – December 2010 – National Partnership programme D11-032 "Organic thin films for transparent and flexible electronics (ELECTRA) – project director

- August 2010 – September 2013 – National Human Resources Programme –young teams TE_229 “Metal-polymer nanocomposites obtained by combined plasma techniques” – project director
- March 2016 – present Nucleus Programme “LAPLAS IV- project PN16470101 “Advanced research on matter under extreme conditions” – project director
- July 2012 – present National Partnership programme 26/2012 „New chemical systems based on nanocrystalline frameworks and porous architectures for IT-SOFC operating with biogas (NANOBIOSOFCC)” –project responsible
- 1 FP7 project (2013)and 1 Horizon 2020 project (2014-2015) related to Researchers Night events –project responsible
- Participant to more than 40 national research contracts
- 1 FP5 project
- 9 EURATOM projects in the period 2005 – 2014
- 1 Eureka project GMO-HEMO-QCM
- 2 COST projects: Action 527 – Plasma polymers and Related Materials & Action MP1101- Biomedical Applications of Atmospheric Pressure Plasma Technology
- 4 Joint research projects with IUCN Dubna (since 2007)
- 2 bilateral IFA-CEA contracts (2014, 2016)

List of invited lectures at international conferences

- Plasma Enhanced Chemical Vapor Deposition (PECVD) of Carbon Materials by a Radiofrequency Plasma Beam, S. Vizireanu, B. Mitu, L. Nistor, G. Dinescu, EOARD conference: Exploring Romanian Resources in Material Research, Brasov, Romania, 07-08 July 2008
- Plasma techniques for nanostructured carbon materials synthesis, S. Vizireanu, S.D. Stoica, C. Luculescu, L. Nistor, B. Mitu, G. Dinescu, XXIX Int. Conf. on Phenomena in Ionized Gases, Cancun, Mexico, 12-17 July 2009
- Conductive polythiophene thin films obtained by plasma polymerization, B. Mitu, V. Satulu, V. Ion, C. Logofatu, G. Aldica, G. Dinescu, Conferinta Nationala de Fizica, Iasi 23-25 septembrie 2010
- PECVD synthesis of 2D nanostructured carbon materials, S. Vizireanu, S. D. Stoica, B.Mitu, C. R. Luculescu, L. Nistor, G. Dinescu, E-MRS –ICAM- IUMRS, Spring Meeting Symposium K: Protective coatings and thin films, Nisa, France 8-15/05/2011
- Plasma Diagnostics by Optical Emission Spectroscopy and Mass Spectrometry Techniques, B. Mitu, Summer school: Plasma diagnostics by electrical probes and lasers 21-28 September 2011, Iasi & Sucevita, Romania
- Plasma deposition of carbon-based materials: diagnostic studies, B.Mitu, S.D. Stoica, S. Vizireanu, M. Bazavan, Topical invited lecture, ESCAMPIG XXI, Viana do Castelo, Portugal, July 10-14 2012
- Plasma deposition of composite materials with metallic inclusions, B. Mitu, V. Satulu, S. Vizireanu, T. Acsente, A. Lazea-Stoyanova, L.C. Nistor , G. Dinescu, Eighteenth International Summer School On Vacuum, Electron And Ion Technologies (VEIT'13), 7 - 11 October 2013, Sozopol, Bulgaria
- Nanocomposite materials obtained by plasma techniques and their applications, B. Mitu, V. Satulu, S. Vizireanu, T. Acsente, L.C. Nistor, G. Dinescu, Symposium EE Carbon-, or nitrogen-containing nanostructured thin films E-MRS Spring Meeting 2-6 May 2016, Lille France
- Process diagnostics during nanocarbon growth by RF plasma jet, B. Mitu, S.D. Stoica, S. Vizireanu, G. Dinescu, 17th Int. Conf. on Plasma Physics and Applications, 15 – 20 June 2017 Magurele Bucharest, Romania

Honours and awards Memberships

Romanian Academy Prize Dragomir HURMUZESCU for “Contributions to the synthesis and characterization of graphene-based structures of carbon nanowalls” – 13.12. 2012

- Romanian Physics Society;
- European Physics Society;
- International Plasma Chemistry Society;
- European Material Research Society

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| <p>Referee of ISI papers</p> | <p>Plasma Processes and Polymers
 European Polymer Journal
 Applied Surface Science
 Plasma Chemistry and Plasma Processing
 Surface and Coatings Technology
 Thin Solid Films
 Journal of Non-Crystalline Solids
 Applied Physics A: Material Science and Processing
 Central European Journal of Chemistry
 Journal of Adhesion Science and Technology
 Materials Science in Semiconductor Processing
 Digest Journal of Nanomaterials and Biostructures
 Journal of Optoelectronics and Advanced Materials
 Romanian Reports in Physics, Romanian Journal of Physics</p> |
| <p>Scientific stages abroad</p> | <ul style="list-style-type: none"> • 2 months in 1999 @ Technical University Eindhoven, Applied Physics Department, The Netherlands-thin film deposition by using expanding thermal plasma (DC arc) fed with Ar/HMDSO/O₂ mixture; • 2 months in 2002 @ Johannes Kepler University, Applied Physics Department, Linz, Austria- compositional and electrical characterization of thin polymeric films and composites obtained by plasma techniques • 6 months in 2003 grant obtained in Outreach fellowship programme (announcement 219.34) of the NATO-National Research Council, Italy @ Institute of Inorganic Methodology and Plasmas, Potenza, Italy • 6 months in 2004 grant obtained in Advanced research fellowship (announcement 215.35S) of the NATO-National Research Council, Italy @ Institute of Inorganic Methodology and Plasmas, Potenza, Italy – thin films and multilayers deposition by pulsed laser ablation assisted by RF discharge and magnetron sputtering, optical characterization of transient plasmas, toxic gas sensitivity measurements |
| <p>Certifications</p> | <p>Design and management of the European project – Bucharest Chamber of Commerce in partnership with University Politehnica Bucharest - 2008
 Leadership and management of high performance team – Bucharest, 2016 – authorized by the National Authority for Qualifications – Manager, code COR 121029</p> |
| <p>Other mentions</p> | <ul style="list-style-type: none"> • Referee of National projects for the Competitions PNII-RU-TE-2014, PN-III-P1-1.1-TE-2016, PN-III-P1-1.1-PD-2016 • Referee of Horizon 2020 projects for H2020-MSCA-ITN-2016 and 2017 H2020-FETOPEN-1-2016-2017-RIA in 2016 and 2017 |

ANNEXES

List of publications, partial from the last 5 years

1. S. Vizireanu, **B. Mitu**, C. Luculescu, L.C. Nistor, G. Dinescu
PECVD synthesis of 2D nanostructured carbon material
Surface & Coatings Technology, 211 (2012) 2-8 doi:10.1016/j.surfcoat.2011.07.092
2. V. Satulu, C. Stancu, V. Ion, M. Filipescu, **B. Mitu***, G. Dinescu
Sequential PECVD/PVD technique used for the synthesis of copper-polypyrrole nanocomposites with surface plasmon resonance effect
Romanian Reports in Physics, Vol. 64, Supplement, P. 1345–1353, 2012
3. Simona Somacescu, Rares Scurtu, George Epurescu, Rovena Pascu, **Bogdana Mitu**, Petre Osiceanu, Maria Dinescu,
Thin films of SnO₂-CeO₂ binary oxides obtained by pulsed laser deposition for sensing application,
Applied Surface Science Vol. 278, Pag. 146-152, AUG 2013
4. L. I. Kravets, A. B. Gilman, M. Yu. Yablokov, V. M. Elinson, **B. Mitu**, G. Dinescu,
Surface and electrochemical properties of polypropylene track membrane modified by plasma of non-polymerizing gases,
Russian Journal of Electrochemistry, Vol. 49, Nr. 7, Pag. 680-692, Jul. 2013
5. Liubov Kravets, Alla Gilman, Mikhail Yablokov, Vera Elinson, **Bogdana Mitu**, Gheorghe Dinescu,
Surface and Electrochemical Properties of Plasma-Treated Polypropylene Track Membrane,
Plasma Processes and Polymers Volume: 10 Issue: 7 Pages: 603-618, 2013
6. R. Birjega, A. Matei, **B. Mitu**, M.D. Ionita, M. Filipescu, F. Stokker-Cheregi, C. Luculescu, M. Dinescu, R. Zavoianu, O.D. Pavel, M.C. Corobea,
Layered double hydroxides/polymer thin films grown by matrix assisted pulsed laser evaporation
Thin Solid Films, Volume 543, 30 September 2013, Pages 63-68
7. L. Rusen, C. Mustaciosu, **B. Mitu**, M. Filipescu, M. Dinescu, V. Dinca,
Protein-resistant polymer coatings obtained by matrix assisted pulsed laser evaporation,
Applied Surface Science, Volume 278, 1 August 2013, Pages 198-202
8. Matei, A ; Schou, J ; Canulescu, S ; Zamfirescu, M ; Albu, C ; **Mitu, B** ; Buruiana, EC ; Buruiana, T ; Mustaciosu, C ; Petcu, I ; Dinescu, M,
Functionalized ormosil scaffolds processed by direct laser polymerization for application in tissue engineering,
Applied Surface Science Vol. 278 Pp.: 357-361, 2013
9. Filipescu, M ; Ion, V , Somacescu, S ; **Mitu, B** ; Dinescu, M,
Investigation of Ta₂O₅ and TaSixOy thin films obtained by radio frequency plasma assisted laser ablation for gate dielectric applications,
Applied Surface Science Vol. 276 Pp. 691-696 , 2013
10. L. Rusen, V. Dinca, **B. Mitu**, C. Mustaciosu, M. Dinescu
Temperature responsive functional polymeric thin films obtained by matrix assisted pulsed laser evaporation for cells attachment–detachment study
Applied Surface Science, Volume 302, 30 May 2014, Pages 134-140
11. A. Vlad, R. Birjega, A. Matei, C. Luculescu, **B. Mitu**, M. Dinescu, R. Zavoianu, O.D. Pavel
Retention of heavy metals on layered double hydroxides thin films deposited by pulsed laser deposition
Applied Surface Science, Volume 302, 30 May 2014, Pages 99-104
12. R. Pascu, S. Somacescu, G. Epurescu, M. Filipescu, C. Luculescu, D. Colceag, P. Osiceanu, R. Birjega, **B. Mitu**
Pulsed laser deposition of yttria stabilized zirconia based heterostructure
Thin Solid Films, Volume 553, 28 February 2014, Pages 98-103
13. Matei, A; Constantinescu, C; Ion, V; **Mitu, B**; Ionita, I; Dinescu, M; Vasiliu, C; Emandi, A;
Ferrocene, an old molecule with a bright future: Thin films grown by matrix-assisted pulsed laser evaporation for nonlinear optical applications";
Journal Of Organometallic Chemistry 36923 (2014) 638
14. Constantinescu, C; Matei, A; Ion, V; **Mitu, B**; Ionita, I; Dinescu, M; Luculescu, CR; Vasiliu, C; Emandi, A,
Ferrocene carboxaldehyde thin films grown by matrix-assisted pulsed laser evaporation for non linear optical applications
Applied Surface Science, Vol. 302 Pages: 83-86, DOI: 10.1016/j.apsusc.2013.11.147, MAY 30 2014
15. Kravets, LI ; Dmitriev, SN; Satulu, V; **Mitu, B**; Dinescu, G,
FORMATION OF COMPOSITE POLYMER 'DIODE-LIKE' MEMBRANES
Romanian Reports in Physics, Vol. 66 Iss. 4 Pages: 1165-1179, 2014

16. Matei, A; Constantinescu, C; **Mitu, B**; Filipescu, M; Ion, V; Ionita, I; Brajnicov, S; Alloncle, AP; Delaporte, P; Emandi, A; Dinescu, M;
"Laser printing of azo-derivative thin films for non-linear optical applications";
 Applied Surface Science Vol 336 MAY 1 (2015) pp. 200-205 (Appl. Surf. Sci.).
17. Kravets, LI; Yablokov, MY; Gilman, AB; Shchegolikhin, AN; **Mitu, B**; Dinescu, G;
"Micro- and nanofluidic diodes based on track-etched poly(ethylene terephthalate) membrane";
 High Energy Chemistry High Energy Chem+ (High Energy Chem.) - Vol. 49 Iss. 5 Pages: 367-374, 2015
18. Satulu, V; Ion, V; Aldica, G; **Mitu, B**; Dinescu, G;
"In-situ iodine doped polythiophene-like thin films obtained by post-discharge RF plasma";
 Romanian Journal of Physics; Vol. 60, Nr. 9–10, Pag. 1550–1560, 2015
19. Stancu, C; Alegre, D; Ionita, ER; **Mitu, B**; Grisolia, C; Tabares, FL; Dinescu, G, *Cleaning of carbon materials from flat surfaces and castellation gaps by an atmospheric pressure plasma jet*
 FUSION ENGINEERING AND DESIGN, Vol. 103 Pages: 38-44, 2016
20. Matei, A; Marinescu, M; Constantinescu, C; Ion, V; **Mitu, B**; Ionita, I; Dinescu, M; Emandi, A;
Nonlinear optical studies on 4-(ferrocenylmethylimino)-2-hydroxy-benzoic acid thin films deposited by matrix-assisted pulsed laser evaporation (MAPLE)
 APPLIED SURFACE SCIENCE, Vol. 374 Pages: 206-212, 2016
21. V. Satulu, M.D. Ionita, S. Vizireanu, B. Mitu, G. Dinescu,
Plasma Processing with Fluorine Chemistry for Modification of Surfaces Wettability
 MOLECULES, Vol. 21, Iss. 12, (2016) Article Number: 1711, DOI: 10.3390/molecules21121711
22. B. Mitu, A. Matei, M. Filipescu, A. Palla Papavlu, A. Bercea, T. Lippert, M. Dinescu
Ferrocene pixels by laser-induced forward transfer: towards flexible microelectrode printing
 J. Phys. D: Appl. Phys. 50 (2017) 115601 (9pp), doi:10.1088/1361-6463/aa5b61
23. V. Satulu, B. Mitu, V.A. Altynov, N.E. Lizunov, L. Kravets, G. Dinescu
Synthesis and characterization of porous composite membranes with hydrophilic/hydrophobic sides
 Thin Solid Films (2017), <http://dx.doi.org/10.1016/j.tsf.2016.08.052>