



Europass  
Curriculum Vitae



Personal information

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E-mail [ion.morjan@inflpr.ro](mailto:ion.morjan@inflpr.ro)  
Nationality Romanian  
Date of birth 01. 09. 1949  
Gender Male

Work experience

Dates from: 1990-present  
Occupation or position held Scientific Director (1994-2009) and General Director (2009-present)  
Main activities and responsibilities

- laser photochemistry (multi-photon processes induced by lasers in organic and inorganic gases), laser thermochemistry of inorganic salts, SO<sub>2</sub> oxidation, reactions with NH<sub>3</sub>, CO, etc
- the synthesis of TiO<sub>2</sub> /anion-doped TiO<sub>2</sub> nanoparticles (with N, C and S dopants) using the laser pyrolysis method
- LCVD of thin coatings (carbide compounds-CN<sub>x</sub>, TiC, Fe<sub>3</sub>C), metal films from metalorganic precursors
- the lasers synthesis of Si-based nanopowders (Si/C/N, Al<sub>2</sub>O<sub>3</sub>, Si/C/Ti, iron carbides, carbon like – fullerenes nanopowders, carbon nanotubes) from gaseous precursors
- the lasers synthesis of Fe based nanopowders

Name and address of employer National Institute for Lasers, Plasma and Radiation Physics (NILPRP), 409 Atomistilor Str, P.O.Box: MG-36, 077125, Bucharest, Romania, Tel.: (40-21) 457 44 89 - Fax:(40-21) 457 42 43 Website: <http://www.inflpr.ro>

Type of business or sector Research and Development  
Dates from: 1973 - 1990  
Occupation or position held Scientific researcher  
Main activities and responsibilities

- lasers and laser systems
- activity on laser isotope separation by heterogeneous processes through membranes and capillaries
- thermal effects induced by the IR laser radiation

Name and address of employer Institute for Atomic Physics, 409 Atomistilor Str, P.O.Box: MG-36, 077125, Bucharest, Romania,

Type of business or sector Research & Development

Education and training  
Dates from: 1985-1998  
Title of qualification awarded PhD in Physical

Principal subjects/occupational skills covered	Physical																																										
Name and type of organisation providing education and training	Institute for Atomic Physics																																										
Level in national or international classification																																											
Dates	from: 1968- 1973																																										
Title of qualification awarded	Engineer																																										
Principal subjects/occupational skills covered	Chemistry																																										
Name and type of organisation providing education and training	Faculty of Technological Chemistry, IPGG Bucharest																																										
Level in national or international classification																																											
Personal skills and competences																																											
Mother tongue(s)	Romanian																																										
Other language(s)																																											
Self-assessment																																											
<i>European level (*)</i>																																											
	<table border="1"> <thead> <tr> <th></th> <th colspan="2">Understanding</th> <th colspan="2">Speaking</th> <th colspan="2">Writing</th> </tr> <tr> <th></th> <th>Listening</th> <th>Reading</th> <th>Spoken interaction</th> <th>Spoken production</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>English</td> <td>C1</td> <td>C1</td> <td>C1</td> <td>C1</td> <td colspan="2">C1</td> </tr> <tr> <td>French</td> <td>C1</td> <td>C1</td> <td>C1</td> <td>C1</td> <td colspan="2">C1</td> </tr> <tr> <td>Italian</td> <td>C1</td> <td>C1</td> <td>C1</td> <td>C1</td> <td colspan="2">C1</td> </tr> <tr> <td>Russian</td> <td>C1</td> <td>C1</td> <td>C1</td> <td>C1</td> <td colspan="2">C1</td> </tr> </tbody> </table>		Understanding		Speaking		Writing			Listening	Reading	Spoken interaction	Spoken production			English	C1	C1	C1	C1	C1		French	C1	C1	C1	C1	C1		Italian	C1	C1	C1	C1	C1		Russian	C1	C1	C1	C1	C1	
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Russian	C1	C1	C1	C1	C1																																						
	(*) <i>Common European Framework of Reference for Languages</i>																																										
Social skills and competences	<ul style="list-style-type: none"> <li>• Award in Physics of the Romanian Academy named "Dragomir Hurmuzescu", received in 1977</li> <li>• Granted fellowship from the EC-Italy (invited stages)-ENEA-Frascati, Rome (in 1989-1990-3 months, in 1991-4 month and in 1994-3 months)</li> <li>• Intergovernmental German-Romanian cooperation, fellowships 1997 (1 month), 1999 (2 weeks), 2001(2 weeks), 2002 (2 weeks)</li> <li>• Fellowships Univ.Lisabona PRAXIS XIII.3 month 1996</li> <li>• Fellowships JSPS Japan, 1month 2001</li> <li>• Star of Romania Order of „Knight” 2001</li> </ul>																																										
Organisational skills and competences	Coordination and administration of people, projects and budgets. Led a team of 15 workers in a research team head. Organized the work and ensured the necessary logistics and manage the institute with 250 workers.																																										
Technical skills and competences	IR spectrometry and UV-Vis, mechanisms of energy transfer in laser-induced reactions in gaseous environments, development of national development programs of research in the field of laser photochemistry; Laser synthesis of nanoscale powder and composites (Si/C/N, Al <sub>2</sub> O <sub>3</sub> , Si/C/Ti, TiO <sub>2</sub> , TiC, Fe, FeC, FeO etc) from gaseous precursors; design of different flowing systems, installations and various reactors; study of the laser-induced reaction efficiency at medium- laser power; parametric dependence of particle composition and morphology Thin films and coatings by laser-induced chemical deposition (LCVD)																																										

Computer skills and competences	Good command of Windows, Microsoft Office(Word, Excel, PowerPoint, Publisher, Project, Access); Primavera; CAD software (AutoCAD, ChemCAD); Mathcad, MathLab; Graphic design applications (Corel, Adobe Photoshop, SmartDraw); E-Learning; CBT (Computer Based Training) courses
Artistic skills and competences	Different analytical methods for nanostructure characterization (transmission and scanning electron microscopy, high resolution electron microscopy, X-ray diffraction, Moessbauer spectroscopy)
Other skills and competences	Romanian accounting Hobbies: reading, swimming, traveling, listening to music, fishing
Driving licence	Driving License category B
<b>Additional information</b>	<ul style="list-style-type: none"> <li>• Member of the professional associations(Member of SPIE (the International Society for Optical Engineering), Member of EOS (European Optical Society), Member of the Romanian Physical Society, Member of the Scientific Program Committee ROMOPTO Bucharest)</li> <li>• Number of papers in refereed journals( 115 in international journals and 42 in Romanian journals)</li> <li>• Number of communications to scientific meetings: ( 63 International Conferences and Meetings, including 22 with invited lectures and 41 with contributions (oral, posters); 48 “Bio-imaging with Smart Functional Nanoparticles” – no. LSHB-CT-2006-037639 - Romanian Director - 2006-2010;</li> <li>• NATO SfP 974214 “Carbon Ceramic National Conferences and Meetings)</li> <li>• FP7 collaborative Project MagPro2Life “Advanced Magnetic and structured nanoparticles deliver smart Products for Life Sciences with industrial Processes by Linking innovative manufacturing efforts”- No. 229335, 2009- KMPT – Director - 2009-2013;</li> <li>• FP6 STREP project BONSAI _Composite Materials for Electrical Engineering Applications” Romanien Director -1999-2004</li> <li>• Romanian SCOPE Project “Combinatorial libraries of TiO2-doped nanostructures for photocatalysis and solar cells” (funded by SNSF) – Romanian Director - 2006-2008</li> <li>• COST Action 523 "Nanostructured Materials" – Romanian Director - 1999-2004</li> </ul>
Annexes	Publication List

## PUBLICATIONS LIST

1. Morjan I, Dumitrache F, Alexandrescu R, Fleaca C, Birjega R, Luculescu CR, Soare I, Dutu E, Filoti G, Kuncser V, Prodan G, Popa NC, Vekas L, "Laser synthesis of magnetic iron-carbon nanocomposites with size dependent properties", *Advanced Powder Technology* Volume 23, Issue 1 Pages 88–96 January 2012
2. Sandu, I.; Brasoveanu, M. ; Morjan, I.; Voicu, I.; Dumitrache, F.; Teodor, CF.; Gavrilă-Florescu, L., Synthesis of optical transparent and electrical conductive polymer/nanocarbon composite films by infiltration method , *Thin Solid Films* Volume: 519 Issue: 12 Special Issue: SI Pages: 4128-4131 Published: APR 1 2011
3. Florescu, LG; Vasile, E.; Sandu, I.; Soare, I.; Fleaca, C.; Ianchis, R.; Luculescu, C.; Dutu, E.; Birjega, R.; Morjan, I.; Voicu, I.; About graphene ribbons development in laser synthesized nanocarbon, *Applied Surface Science* Volume: 257 Issue: 12 Pages: 5270-5273 Published: APR 1 2011
4. Huminic, G.; Huminic, A.; Morjan, I; Dumitrache, F.; Experimental study of the thermal performance of thermosyphon heat pipe using iron oxide nanoparticles, *International Journal of Heat and Mass Transfer* Volume: 54 Issue: 1-3 Pages: 656-661 Published: JAN 15 2011
5. Dumitrache, F.; Morjan, I.; Fleaca, C.; Birjega, R.; Vasile, E.; Kuncser, V.; Alexandrescu, R.; Parametric studies on iron-carbon composite nanoparticles synthesized by laser pyrolysis for increased passivation and high iron content, *Applied Surface Science* Volume: 257 Issue: 12 Pages: 5265-5269 Published: APR 1 2011
6. Alexandrescu, R.; Morjan, I.; Dumitrache, F.; Birjega, R.; Fleaca, C.; Soare, I.; Gavrilă, L.; Luculescu, C.; Prodan, G.; Kuncser, V.; Filoti, G.; Recent developments in the formation and structure of tin-iron oxides by laser pyrolysis, *Applied Surface Science* Volume: 257 Issue: 12 Pages: 5460-5464 Published: APR 1 2011
7. C. Fleaca, I. Morjan, R. Alexandrescu, F. Dumitrache, I. Soare, L. Gavrilă-Florescu, F. Le Normand, J. Faerber, Carbon nanostructures from Fe-C nanocomposites by activated CVD methods, *Physica Status Solidi C - Current Topics in Solid State Physics*, Vol 7 No 3-4 Volume: 7 Issue: 3-4 Pages: 1269-1273 Published: 2010
8. R. Alexandrescu, I. Morjan, F. Dumitrache, R. Birjega, C. Fleaca, C. R. Luculescu, E. Popovici, I. Soare, I. Sandu, E. Dutu, G. Prodan, Development of Fe-doped SnO<sub>2</sub>-based nanocomposites prepared by single-step laser pyrolysis, *Journal of Optoelectronics and Advanced Materials* Volume: 12 Issue: 3 Pages: 599-604 Published: MAR 2010
9. I. Morjan, R. Alexandrescu, F. Dumitrache, C. Fleaca, R. Birjega, I. Soare, C.R. Luculescu, V. Prodan, V. Kuncser, G. Filoti, H. Xu, and D. Wang, Development Of Magnetic Fe@C Nanocomposites Obtained Via The Laser Pyrolysis: Structural And Disaggregation Properties, *Bonsai Project Symposium: Breakthroughs in Nanoparticles For Bio-Imaging* Volume: 1275 Pages: 17-21 Published: 2010
10. Alexandrescu. R, Morjan. I, Scarisoreanu. M, Birjega. R, Fleaca. C, Soare. I, Gavrilă. L, Ciupina. V, Kylberg. W, Figgemeier. E, Development of the IR laser pyrolysis for the synthesis of iron-doped TiO<sub>2</sub> nanoparticles: Structural properties and photoactivity, *INFRARED Physics & Technology* Volume: 53 Issue: 2 Pages: 94-102 Published: MAR 2010
11. Alexandrescu R, Morjan I, Tomescu A, Simion CE, Scarisoreanu M, Birjega R, Fleaca C, Gavrilă L, Soare I, Dumitrache F, Prodan G, Direct Production of a Novel Iron-Based Nanocomposite from the Laser Pyrolysis of Fe(CO)<sub>5</sub>/MMA Mixtures: Structural and Sensing Properties, *Journal of Nanomaterials* Article Number: 324532 Published: 2010
12. R. Alexandrescu, V. Bello, V. Bouzas, R. Costo, F. Dumitrache, M. A. García, R. Giorgi, M. P. Morales, I. Morjan, C. J. Serna, and S. Veintemillas-Verdaguer, Iron Oxide Materials Produced by Laser Pyrolysis, *Bonsai Project Symposium: Breakthroughs in Nanoparticles For Bio-Imaging* Volume: 1275 Pages: 22-25 Published: 2010
13. Morjan. I, Alexandrescu. R, Dumitrache. F, Birjega. R, Fleaca. C, Soare. I, Luculescu. CR, Filoti. G, Kuncser. V, Vekas. L, Popa. NC, Prodan. G, Ciupina. V, Iron Oxide-Based Nanoparticles with Different Mean Sizes Obtained by the Laser Pyrolysis: Structural and Magnetic Properties, *Journal of Nanoscience and Nanotechnology*, Volume: 10, Issue: 2, Pages: 1223-1234, Published: FEB 2010
14. David, B., Schneeweiss, O., Santava, E., Morjan, I., Low-Temperature Magnetic Properties of Nanocomposites Containing Superparamagnetic Fe<sub>3</sub>C Particles, *ACTA PHYSICA POLONICA A* Volume: 118 Issue: 5 Pages: 766-767 Published: NOV 2010
15. M. A. García, V. Bouzas, R. Costo, S. Veintemillas, P. Morales, M. García-Hernández, R. Alexandrescu, I. Morjan, and P. Gasco, Magnetic Properties of Fe Oxide Nanoparticles Produced by Laser Pyrolysis for Biomedical Applications, *Bonsai Project Symposium: Breakthroughs in Nanoparticles For Bio-Imaging* Volume: 1275 Pages: 26-29 Published: 2010
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17. R. Alexandrescu, V. Bouzas, R. Costo, F. Dumitrache, M. A. García, M. P. Morales, I. Morjan, C. J. Serna, and S. Veintemillas-Verdaguer, Reproducibility of the Synthesis of Iron Oxide Nanoparticles Produced by Laser Pyrolysis, *Bonsai Project Symposium: Breakthroughs in Nanoparticles For Bio-Imaging* Volume: 1275 Pages: 30-32 Published: 2010

18. Victor Ciupina, Ion G. Morjan, Rodica Alexandrescu, Florian V. Dumitrache, Gabriel Prodan, Cristian Lungu, Rodica Vladioiu, Ion Mustata, Vasile Zarovschi, John Sullivan, Sayah Saied, Eugeniu Vasile, Iuliana Oancea-Stanescu, Madalina Prodan, Dorina Manole, Aurelia Mandes, Virginia Dinca and Mirela Contulov, "Synthesis and characterization of some carbon based nanostructures", Proc. SPIE 7764, 776400 (2010);
19. I. Cambianica, M. Bossi, P. Gasco, W. Gonzalez, J. M. Idee, G. Miserocchi, R. Rigolio, M. Chanana, I. Morjan, D. Wang, and G. Sancini, Targeting Cells With MR Imaging Probes: Cellular Interaction And Intracellular Magnetic Iron Oxide Nanoparticles Uptake In Brain Capillary Endothelial and Choroidal Plexus Epithelial Cells, Bonsai Project Symposium: Breakthroughs in Nanoparticles For Bio-Imaging Volume: 1275 Pages: 145-149 Published: 2010
20. A. Panariti, B. Lettiero, I. Morjan, R. Alexandrescu, D. Wang, C. Bucci, G. Miserocchi, and I. Rivolta, Uptake And Intracellular Distribution Of Functionalized Iron Oxide Nanoparticles, Bonsai Project Symposium: Breakthroughs in Nanoparticles For Bio-Imaging Volume: 1275 Pages: 112-114 Published: 2010
21. Sandu I., Morjan I., Voicu I., Dumitrache F., Fleaca C.T., Gavrilă-Florescu L., Voltage and Temperature Coefficients of Resistance of Polyethylene/ Nanocarbon-Based Thick Film Composites: Melt-Mixing Versus Melt-Infiltration Synthesis, Journal of Plastic Film and Sheeting January 2010 26: 71-81, first published on April 27, 2010
22. G. Filoti, V. Kuncser, G. Schinteie, P. Palade, I. Morjan, Rodica Alexandrescu, Doina Bica and L. Vekas, Characterization of magnetic nano-fluids via Mössbauer spectroscopy, ISIAME 2008 2009, 385-390,
23. Morjan. I, Alexandrescu. R, Scarisoreanu. M, Fleaca. C, Dumitrache. F, Soare. I, Popovici. E, Gavrilă. L, Vasile. E, Ciupina. V, Popa. NC, Controlled manufacturing of nanoparticles by the laser pyrolysis: Application to cementite iron carbide, Applied Surface Science Volume: 255 Issue: 24 Pages: 9638-9642 Published: SEP 30 2009
24. E. Popovici, L. Gavrilă Florescu, I. Soare, M. Scarisoreanu, I. Sandu, G. Prodan, C.T. Fleaca, I. Morjan, I. Voicu, Heterogenous atoms in laser-induced synthesis of carbon black, Applied Surface Science Volume: 255 Issue: 10 Pages: 5511-5514 Published: MAR 1 2009
25. C.T. Fleaca, I. Morjan, R. Alexandrescu, F. Dumitrache, I. Soare, L. Gavrilă-Florescu, F. Le Normand, A. Derory, Magnetic properties of core-shell catalyst nanoparticles for carbon nanotube growth, Applied Surface Science Volume: 255 Issue: 10 Pages: 5386-5390 Published: MAR 1 2009
26. R. Alexandrescu, M. Scarisoreanu, I. Morjan, R. Birjega., C. Fleaca., C. Luculescu, I. Soare., O. Cretu, C.C. Negrilă, N. Lazarescu, V. Ciupina, Preparation and characterization of nitrogen-doped TiO<sub>2</sub> nanoparticles by the laser pyrolysis of N<sub>2</sub>O-containing gas mixtures, Applied Surface Science Volume: 255 Issue: 10 Pages: 5373-5377 Published: MAR 1 2009
27. C.T. Fleaca, I. Morjan, R. Alexandrescu, F. Dumitrache, I. Soare, L. Gavrilă-Florescu, F. Le Normand, O. Ersen, Catalyzed growth of oriented carbon nanotubes using Fe-organosilicon core-shell nanoparticles, Physica E--Low-Dimensional Systems & Nanostructures, Volume 40, Issue 7, Pages 2252--2256, Published: May 2008
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30. R. Alexandrescu, I. Morjan, F. Dumitrache, M. Scarisoreanu, I. Soare, C. Fleaca, R. Birjega, E. Popovici, L. Gavrilă, G. Prodan, V. Ciupina, G. Filoti, V. Kuncser, L. Vekas, Photochemistry aspects of the laser pyrolysis addressing the preparation of oxide semiconductor photocatalysts, International Journal of Photoenergy, Article Number: 604181, Published: 2008
31. A.Tomescu, C. E. Simion, R. Alexandrescu, I. Morjan, M. Scarisoreanu, Sensitivity to Reducing Gases of Polymer-Iron Nanocomposite Materials, ROMANIAN JOURNAL OF INFORMATIONSCIENCE AND TECHNOLOGY, Volume 11, Number 1, 2008, 85-95
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35. A. Tomescu, C. E. Simion, R. Alexandrescu, I. Morjan, M. Scarisoreanu, Gas-sensing by Polymer-Iron nanocomposite materials, CAS 2007 International Semiconductor Conference, Vols 1 and 2, Proceedings, Pages: 333-336, Published: 2007
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37. M. Scarisoreanu, I. Morjan, R. Alexandrescu, R. Birjega, I. Voicu, C. Fleaca, E. Popovici, I. Soare, L. Gavrilă-Florescu, O. Cretu, G. Prodan, V. Ciupina and E. Figgemeier, Effects of some synthesis parameters on the structure of titania nanoparticles obtained by laser pyrolysis, *Applied Surface Science*, 253 (2007) 7908-7911
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44. B. David, O. Schneeweiss, M. Mashlan, E. Santava, I. Morjan, Low-temperature magnetic properties of  $Fe_3C$ /iron oxide nanocomposite, *Journal of Magnetism and Magnetic Materials* Volume: 316 Issue: 2 Pages: 422-425 Published: SEP 2007
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