

PERSONAL INFORMATION

Aurelian Marcu

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Sex M | Date of birth 17/02/1968 | Nationality Romanian

WORK EXPERIENCE

- 2019 - present **Scientific Researcher I**
National Institute for Lasers, Plasma and Radiation Physics, Atomistilor Street No 409, Magurele, 077125, Ilfov, Romania
[Business or sector](#) Research
- 2011 - 2019 **Scientific Researcher II**
National Institute for Lasers, Plasma and Radiation Physics, Atomistilor Street No 409, Magurele, 077125, Ilfov, Romania
[Business or sector](#) Research
- 2007-2011 **Scientific Researcher III**
National Institute for Lasers, Plasma and Radiation Physics, Atomistilor Street No 409, Magurele, 077125, Ilfov, Romania
[Business or sector](#) Research
- 1993-1997 **Researcher**
National Institute for Lasers, Plasma and Radiation Physics, Atomistilor Street No 409, Magurele, 077125, Ilfov, Romania
[Business or sector](#) Research
- 1992-1993 **Research Assistant**
National Institute for Lasers, Plasma and Radiation Physics, Atomistilor Street No 409, Magurele, 077125, Ilfov, Romania
[Business or sector](#) Research

INTERNATIONAL STAGIES

- 2006 - 2008 **ISIR-Sanken**
Laboratory of Advanced Materials, Osaka University, Osaka, Japan
Nanostructure fabrication by Laser techniques
- 1996-1998 **Laboratory of Beam Technology**
Nagaoka University of Technology, Nagaoka, Niigata-ken, Japan

Special laser deposition techniques

April 1995 **Electricite de France**

Electricite de France, Lille, France
Electromagnetic Fields Modelling

EDUCATION AND TRAINING

2023 **Habilitation Thesis**

Title: Laser-matter interactions in 'nano-science' and 'nano-scale' applications
University "Politehnica" from Bucharest, Physics Department

2010 - 2013 **Post Doctoral studies**

Biochemistry Institute of Academy / University of Bucharest / University of Timisoara, /
University of Cluj / NILPRP-Magurele
Nanostructures for Drug Delivery

2006-2008 **Post Doctoral studies**

Institute of Scientific and Industrial Research, Osaka University,, Japan
Oxide nanostructure fabrication by Laser techniques

2000-2002 **PhD**

University "Politehnica" from Bucharest, Physics Department
Thesis title: "Special Laser Deposition Techniques"

1993 - 1995 **Post-university studies**

University "Politehnica" from Bucharest, Electrotechnics Faculty
Thesis title: "Vectorial-Statistic Stoner-Wolfhart Modelling for Magnetic Hysteresis"

1987 - 1992 **Bachelor + Master**

University "Politehnica" from Bucharest, Physics Department, Electro-Physics section
Thesis title: "Study on Excimer Laser Excitation"

1982 - 1986 **Bacalaureat**

"Mihai Viteazu" Lycee, Bucharest, Electrotechnics section.
Thesis title: "Bistable Touch Switch"

SOCIAL TRAININGS

27-Mai -2-June 2010 **Advanced X-ray studies and sample preparation**

European Training School of the synchrotron analysis,
Synchrotrone SOLEIL, Saint-Aubin, France

27-Jan – 28 Feb 2011 **Transmission Electron Microscopy**

IEMAT winter Workshop on Electron Microscopy,
Antwerp, Belgium

22 Nov – 25 Nov 2010 **Drug Design**

Faculty of Chemistry, University of Bucharest, Romania

October 2010

Drug Delivery Systems

University of Medicine and Pharmacy, "Victor Babes", Timisoara, Romania

PERSONAL SKILLS

- Communication skills
- Experience of work in international teams and international stagies
 - Participant in more than 20 national and international projects

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
	Replace with name of language certificate. Enter level if known.				
Japanesee	B1	A2	B1	B1	A1
	Replace with name of language certificate. Enter level if known.				
Russian	B1	B1	B1	B1	B1
	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](#)

Organisational / managerial skills

- **Project Coordinator in 3 national projects**
(ELI-RO 17/2016, STAR 189/2017, PCE 93/2021)
- **Project Team Leader in 2 national projects**
(PCCF 18/2016 and PS 10/2017)
- **Project management curse** Transilvania Business School, Bucharest, Romania, 31 Sept – 2 Oct 2010

Driving licence B

ADDITIONAL INFORMATION

- Skills and Competences
- Laser-matter interaction processes and laser induced modifications
 - *Nanostructure fabrication using Pulsed Laser Deposition and Vapor-Liquid-Solid technique*
 - *Plume filtering techniques*
 - *Special Pulsed Laser Deposition techniques*
 - *Plasma – matter interactions*
 - *Plasma expansion in special geometry systems*
 - *Thin films deposition and quality surface control*
 - *Gas Pulsed Lasers*
 - *Computer assisted laser systems*
- Computer related skills
- **Hardware** – interfaces, computer assisted processes
 - **Software** – programming C/C++, Pascal/TurboPascal, Basic/Visual Basic
 - **Operating systems** DOS/Windows/Linux/UNIX
- Member of profesional organisations
- *Head of “Laser, Plasma, Radiation – Science and Technology” Association*
 - *Material Research Society (2013-2015, 2020-2021)*
 - *SPIE-RO Board (2003-2004)*

Books ■ Mihai Stafe, Aurelian Marcu, Nicolae N. Puscas, "Pulsed Laser Ablation of Solids", Springer Series in Surface Science **53**, Springer-Verlag Berlin Heidelberg ISBN 978-3-642-40977-6, (2014)

Books Chapters

■ R. Vladoiu, C. Porosnicu, A. Mandes, I. Jepu, V. Dinca, A. Marcu, M. Lungu, G. Prodan, L. Avotina, chapter: "DLC Thin Films and Carbon Nanocomposites Growth by Thermionic Vacuum Arc (TVA) Technology" , in the book: "Diamond and Carbon Composites and Nanocomposites", INTECH, ISBN 978-953-51-2453-5, (2016)

■ A. Marcu, C. Viespe, *Nanostructures Fabricated by Laser Techniques for Sensors Applications*, Book title: „Science and applications of tailored nanostructures”, ISBN 978-1-910086-18-6, Editor Prof. Paolo Di Sia, One Central Press, Str. Northampton road, Manchester M40 5BP, UK (OCP), (2016) pag. 29-38, (Ebook:ISBN-978-1-910086-19-3, HardBook: ISBN -978-1-910086-18-6)

Selected Publications

■ A.Marcu, T.Yanagida, Kazuki Nagashima, Keisuke Oka, Hidekazu Tanaka and Tomoji Kawai, "Crucial Role of Inter-diffusion on Magnetic Properties of In-situ Formed MgO/Fe₃O₄ Heterostructured Nanowires", Appl. Phys. Lett. **92** (2008) pp. 173119.1 – 173119.3

■ A.Marcu and C. Viespe, "Laser-grown ZnO Nanowires for Room-temperature SAW-sensor Applications", Sensors & Actuators: B. Chemical, Sensors and Actuators, B: Chemical, **208**, (2015), pp. 1-6

■ A.Marcu, T.Yanagida, K.Nagashima, H.Tanaka and T.Kawai, "Effect of ablated particle flux on MgO nanowire growth by pulsed laser deposition" , Jurnal of Applied Physics, **102** (2007) pp.016102

■ A.Marcu, C.Grigoriu and K.Yatsui, "Particles Interaction with Obstacles in Pulsed Laser Deposition", Applied Surface Science, Vol **248** (2005), pp. 466-469.

■ A.Marcu, T.Yanagida, K.Nagashima, H.Tanaka and T.Kawai, "Transport Properties of ZnFe₂O₄ Thin Films", Jurnal of Applied Physics, **102**,(2007) pp. 023713

■ T. Yanagida, A.Marcu, H.Matsui, K.Nagashima, K.Oka, K.Yokota, M.Taniguchi and T.Kawai, "Enhancement of Oxide VLS Grow by Carbon on Substrate Surface", J. Phys. Chem C **112** pp.18923 – 18926 (2008)

■ A.Marcu, T.Yanagida and T.Kawai, "Nanochannels Fabrication using Kikendal Effect", Solid State Science **12** pp.978-981 (2010),

■ A.Marcu, C. Grigoriu, C.P.Lungu, T.Yanagida and T.Kawai "Ablation Particles Parameters Influences on VLS Oxide Nanowire Growing", Physica E, Phys. E **44**, (2012) pp. 1071-1073 .

■ A.Marcu, L. Trupina, R.Zamani, J.Arbiol, C. Grigoriu and J. R. Morante, "Catalyst Size Limitation in Vapor-Liquid-Solid ZnO Nanowire Growth using Pulsed Laser Deposition", Thin Solid Films **520** (2012), pp. 4626 – 4631

■ A. Marcu, S. Pop, F. Dumitrache, M. Mocanu, C.M. Niculite, M.Gherghiceanu, C.P. Lungu, C. Fleaca, R.Ianchis, A. Barbut, C.Grigoriu, I. Morjan, "Magnetic Iron Oxide Nanoparticles as Drug Delivery System in Breast Cancer", Applied Surface Science, App. Surf. Sci. **281** (2013), pp. 60–65

■ A. Marcu, I. Nicolae and C. Viespe, "Active Surface Geometrical Control of Noise in Nanowire-SAW Sensors", Sensors & Actuators: B. Chemical **231** (2016), pp. 469-473,

■ A. Marcu and C. Viespe, "Surface Acoustic Wave Sensors for Hydrogen and Deuterium Detection", Sensors **17** (2017), pp. 1417-1427

Date

Aurelian Marcu

23-July-2020

