


PERSONAL INFORMATION

Aurelian Catalin Galca



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Sex M | Date of birth Nov/1977 | Nationality Romanian, Moldovan

WORK EXPERIENCE

- 02.2015 - present **Senior Researcher rank I**
 Laboratory of Multifunctional Materials and Structures, National Institute of Materials Physics (NIMP), Magurele, Romania
- non-destructive characterization (ellipsometry, XRD, conventional UV-Vis and infrared spectroscopy, Raman Spectroscopy) of nanoscaled materials; performing electrical measurements and interpretation; preparation of dielectric / semiconductor / metallic thin films by physical vapor deposition (PVD) methods; management of the research activity (projects); writing application proposals
- 12.2016 - present **Responsible for international collaborations (AUF)**
 National Institute of Materials Physics (NIMP), Magurele, Romania
- managing the administrative procedures as well as the respective educational, training and research activities of foreign Ph.D. students and post docs in collaboration with the scientific co-responsible, if any
- 08.2012 - 08.2017 **Head of Complex Heterostructures and Perovskite Oxides Group**
 Laboratory of Multifunctional Materials and Structures, National Institute of Materials Physics (NIMP), Magurele, Romania
- make strategic decisions and lead the research team to achieve important innovations; communicate clear instructions to group members; listen to group members feedback and monitoring their activity; create reports to update the institute on the group progress; make and distribute reports to the appropriate personnel; manage the group budget
- 10.2011 – 11.2011 **visiting PostDoc**
 Unite Sciences Chimiques de Rennes de l'Universite Rennes 1, Rennes, France
- correlation between optical, electrical and structural properties of $\text{Bi}_{1.3}\text{Zn}_{0.5}\text{Nb}_{1.5}\text{O}_{6.2}$ (BZN) thin films deposited on r-sapphire (Al_2O_3) and lanthanum aluminate (LaAlO_3); pulsed laser deposition (PLD)
 - Young researcher mobility grant awarded by Institute of Atomic Physics - Thales - Embassy of France in Romania
- 09.2011 – 02.2015 **Senior Researcher rank III**
 Laboratory of Multifunctional Materials and Structures, National Institute of Materials Physics (NIMP), Magurele, Romania
- non-destructive characterization (ellipsometry, XRD, ultraviolet-visible and infrared spectroscopy) of thin films and multilayers; preparation of dielectric / semiconductor thin films by pulsed laser deposition (PLD) and magnetron sputtering; management of the research activity (projects); writing application proposals
- 11.2009 – 09.2011 **Senior Researcher rank III**
 Laboratory of Magnetism, National Institute of Materials Physics (NIMP), Magurele, Romania
- non-destructive characterization by ellipsometry of thin films and multilayers; management of the research activity (projects); writing application proposals

- 11.2006 – 07.2009 **PostDoc (part-time)**
 Photonic Processing of Advanced Materials Group, Laser Department, National Institute of Lasers, Plasma and Radiation Physics, Magurele, Romania
- non-destructive characterization by ellipsometry of complex oxide thin films
- 10.2006 – 10.2009 **Senior Researcher**
 Laboratory of Magnetism, National Institute of Materials Physics (NIMP), Magurele, Romania
- non-destructive characterization by ellipsometry of thin films and multilayers; management of the research activity (projects); writing application proposals; public procurement of equipment
- 05.2006 – 10.2006 **Research Assistant**
 Laboratory of Magnetism, National Institute of Materials Physics (NIMP), Magurele, Romania
- writing application proposals
- 12.2001 – 12.2005 **Research Assistant**
 Foundation for Fundamental Research on Matter, Utrecht, the Netherlands; working place: Solid State Physics Group, MESA+ Institute for Nanotechnology, University of Twente, Enschede, the Netherlands
- development and characterization (ellipsometry) of highly ordered porous Al₂O₃ thin films obtained by aluminum anodization; preparation of ferrofluids and magneto - optical characterizations of colloidal solutions; development of custom magneto-optical equipment (ellipsometers, scatterometers, spectrometers); research education by guiding and supervising the second year bachelor students for Light Diffraction practical work
- 09.2000 – 12.2001 **Informatics Teacher**
 Horia Hulubei High School, Bucharest, Romania
- teaching and evaluating the students from grades 9-11

EDUCATION AND TRAINING

- 12.2001 – 07.2006 **degree of Doctor (Dr.)** EQF level 8
 University of Twente, Enschede, the Netherlands
- PhD Thesis: Ellipsometric studies of anisotropic nanoscaled media: Ferrofluids in magnetic fields and anodized aluminium, ISBN: 90-365-2348-6
 - solid state physics, electrochemistry, colloid chemistry; spectroscopic ellipsometry, magneto-optical properties; porous alumina, ferrofluids
- 10.2000 – 02.2002 **Master Diploma (M. Sc.)** EQF level 7
 Faculty of Physics, University of Bucharest, Romania
- M.Sc. Thesis: Sputtered ZnO Thin Films Doped with Transitional Metals: Structural and Optical Properties; Electrical transport
 - curricula of solid state physics module: semiconductor materials and devices, solid state electronics, dielectric properties, magnetism, special applications of optoelectronic devices, metals physics, physics of low dimensional systems
- 10.1996 – 06.2002 **Bachelor Diploma (B. Sc.)** EQF level 6
 Faculty of Physics, University of Bucharest, Romania
- B.Sc. Thesis: Pore Size Determination by Mercury Porosimetry
 - first 3 years - general curricula: mathematical analysis, physical and acoustic mechanics, electricity and magnetism, molecular physics, equations of mathematical physics, quantum mechanics, atom and molecule physics, thermodynamics and statistical physics, optics and opto-technics, processing of physical data and numerical methods, electrodynamics and relativity, general chemistry, algebra and geometry, coherent optics, liquid crystals physics, programming languages, English, psychology, pedagogy, methods of physics teaching
 - forth year - curricula of solid state physics module: solid state physics, nucleus and elementary particle physics, spectroscopy and lasers, partial ordered systems physics, optoelectronic devices, experimental methods in solid state physics, semiconductor devices and materials, solid state electronics

09.1992 – 06.1996

Baccalaureat Diploma

EQF level 4

B.P. Hasdeu High-School, Buzau, Romania

- mathematics and physics (majors), general curricula for Romanian theoretical high-schools

PERSONAL SKILLS

Mother tongue(s) Romanian

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

Communication skills good communication skills gained through my experience as researcher with other colleagues, (conferences, common papers) and with equipment and materials providers

Organisational / managerial skills leadership (5 years responsibility for a group of 37 people); since 2016 responsible of francophone international relations ; managing 3 projects as director: Nato Science For Peace And Security Programme - Reintegration Grant Eap.Rig.98273, a national reintegration project and a 'young research team' project, managing as NIMP responsible one national research project; co-responsible of 2 contracts with industry, each one of value greater than 50k Euro

Job-related skills non-destructive characterization: spectroscopic ellipsometry, X-ray diffraction, ultraviolet-visible and infrared spectroscopies of thin films and multilayers; magneto-optical characterization of glasses and crystals: Faraday rotation, dispersions of refractive index, extinction coefficient and Verdet constant, birefringence and dichroism; preparation of thin films by physical vapor deposition methods; developing and characterization of photovoltaic cells, memory cells and thin film transistors

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Levels: Basic user - Independent user - Proficient user

[Digital competences - Self-assessment grid](#)

- good command of office suite (word processor, spread sheet, presentation software)
- good command of Origin, Mathcad, Latex, and photo editing software (CorelDraw)

Driving licence B

ADDITIONAL
INFORMATION

- Publications** Web of Science co-authored articles: full list available at <http://www.researcherid.com/rid/C-7386-2009> ; h-index 18
<https://www.scopus.com/authid/detail.uri?authorId=24400878600>
https://scholar.google.com/citations?hl=en&user=LiB1oIAAAAJ&view_op=list_works&sortby=pubdate
- Reviewing articles** reviewed at least one manuscript sent to the following journals: NATURE (), RSC (Journal of Materials Chemistry C, RSC Advances), ACS (Chemistry of Materials; ACS Photonics), IUCr (Journal of Applied Crystallography), AIP (Journal of Applied Physics, Applied Physics Letters), MDPI (Coatings; Materials; Entropy), ELSEVIER (Applied Surface Science; Thin Solid Films; Materials Chemistry and Physics; Materials Science and Engineering B; Journal of Molecular Structure; Vacuum; Surface and Coatings Technology; Journal of Solid State Electrochemistry; Ceramics International; Journal of King Saud University; Materials Research Bulletin; Physica B), WILEY (physica status solidi C), SPRINGER (Journal of Inorganic and Organometallic Polymers and Materials; Nanoscale Research Letters); INOE 2000-NIMP (Journal of Optoelectronics and Advanced Materials)
- Reviewing project proposals** Expert-Reviewer for national competitions organized by UEFISCDI (<https://uefiscdi.ro/>) and MCI (<http://www.research.gov.ro/>); Active member of *Agence universitaire de la Francophonie* - National Commission of Evaluation of proposals submitted for Eugen Ionescu scholarships (background information can be obtained at <http://www.mae.ro/en/node/4672>); External Reviewer of The LEaDing Fellows proposals (<https://leadingfellows.eu/overview/overviewcommittees/>)
- Honors and awards** RADU GRIGOROVICI prize awarded by Romanian Academy in 2011 to Anca Stanculescu and Aurelian Catalin Galca for: Optical properties of oxide systems