

PERSONAL INFORMATION

Mr. Vlad-Andrei ANTOHE, Assoc. Prof. Ph.D. Eng. Habil.



 Bucharest, Romania

 [Redacted]

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 <http://www.researcherid.com/rid/D-2158-2012>

 Skype: vlad.antohe

Sex: Male | Date of birth: 11/10/1979 | Nationality: Romanian | Marital Status: Married

JOB APPLIED FOR

A position of Professor at University of Bucharest

CURRENT POSITION

Associate Professor

University of Bucharest / Faculty of Physics
Department of Electricity, Solid State Physics and Biophysics
R&D Center for Materials and Electronic & Optoelectronic Devices (MDEO)

 [Redacted]

 [Redacted]

 vlad.antohe@fizica.unibuc.ro

 www.fizica.unibuc.ro / www.mdeo.eu

WORK EXPERIENCE

June 2023 – Present

Habilitated in Physics

University of Bucharest / Faculty of Physics, Bucharest-Măgurele, Romania (www.fizica.unibuc.ro)

- Affiliated within **Physics Doctoral School** of the University of Bucharest (<https://doctorat.unibuc.ro/scoli-doctorale/scoala-doctorala-de-fizica/>)
- Scientific supervision and guidance of Ph.D. students, on the following topics:
 - Preparation and advanced characterization of nanomaterials
 - Nanostructures synthesis through electrochemical processes
 - Development and characterization of electronic and optoelectronic devices, such as: photovoltaic cells, field-effect transistors, sensors and biosensors, as well as micro-batteries, micro-supercapacitors or other electrochemical systems
- Conception and writing articles for peer-reviewed ISI journals

[Nanomaterials Science and Engineering for Electronics & Optoelectronics](#)

October 2016 – Present

Associate Professor

University of Bucharest / Faculty of Physics, Bucharest-Măgurele, Romania (www.fizica.unibuc.ro)

- Teaching activities (i.e., lectures, seminars, practical sessions) with undergraduate and graduate students, covering the following topics:
 - “Introduction in Nanotechnology” – 3rd year B.Sc. students
 - “Preparation and characterization techniques for nanomaterials” – 4th year B.Sc. students
 - “Nanostructures for sensing and biosensing devices” – 2nd year M.Sc. students
- Students’ supervision and guidance for B.Sc. and M.Sc. theses
- Practical sessions (i.e., electronics, nanotechnology) with undergraduate and graduate students
- Involvement in the Admission exams for B.Sc. and M.Sc. programs, respectively
- Member in the examination boards of B.Sc. and M.Sc. programs for final exams session
- Invited member in the examination boards of academic positions’ contests (didactic and research)

- Involvement in outreach activities (i.e., science popularization, students' contests, etc.)
- Writing scientific reports on a periodical basis
- Attending scientific communications events (i.e., conferences, workshops and summer schools)
- Conception and writing articles for peer-reviewed ISI journals

Nanotechnology, Advanced Materials for Electronics & Optoelectronics

May 2016 – July 2023

Scientific Collaborator

UCLouvain / IMCN / BSMA, Louvain-la-Neuve, Belgium (www.uclouvain.be/en-imcn)

- Research collaborations in nanostructured materials science and engineering
- Knowledge transfer towards Postdocs, as well as B.Sc., M.Sc. and Ph.D. students.
- Writing and co-authoring scientific publications for peer-reviewed ISI journals

Nanotechnology, Nanostructured Materials for Electronic Devices

January 2013 – May 2016

Post-Doctoral Researcher

UCLouvain / IMCN / BSMA, Louvain-la-Neuve, Belgium (www.uclouvain.be/en-imcn)

- Scientific research in materials science and engineering
- Laboratory sessions with undergraduate and graduate students
- Supervision and guidance of B.Sc., M.Sc. and Ph.D. students
- Writing scientific reports on a periodical basis
- Scientific communications through conferences and workshops
- Conception and writing articles for peer-reviewed ISI journals

Nanotechnology, Materials Science & Engineering

April 2006 – December 2012

Research Assistant

UCLouvain / IMCN / BSMA, Louvain-la-Neuve, Belgium (www.uclouvain.be/en-bsma)

- Scientific research in materials science for bio-/sensing devices
- Writing scientific reports on a periodical basis
- Scientific communications through conferences and workshops
- Conception and writing articles for peer-reviewed ISI journals

Nanotechnology, Materials Science, Sensors & Actuators

March 2003 – May 2006

Assistant Lecturer

University of Bucharest, Faculty of Physics, Bucharest – Măgurele, Romania (www.fizica.unibuc.ro)

- Laboratory and seminar sessions on "General Electronics" (for undergraduate students)
- Laboratory and seminar sessions on "Electronic Circuits and Devices" (for undergraduate students)
- Laboratory sessions on "Organic Materials and Electronic Devices" (for graduate students)
- Research activity in materials science for opto-/electronic devices

Physics, Materials Science, Opto-/Electronic Devices

EDUCATION & TRAINING

2006 – 2012

Doctor Degree (Ph.D.) in Engineering Sciences

103 (out of 80) ECTS

UCLouvain, Louvain School of Engineering (EPL), Louvain-la-Neuve, Belgium

- Ph.D. thesis: "*pH Sensitive Capacitive Detectors Based on Localized Nanowire Arrays. Nanotechnology & Device Integration Routes*"
- Certificate of scientific formation in "Engineering Sciences" awarded by the "Académie Universitaire Louvain", Louvain-la-Neuve, Belgium

- 2003 – 2005 **Master Degree (M.Sc.) in Electronics and Metrology** 9.88 (out of 10)
University of Bucharest, Faculty of Physics, Bucharest – Măgurele, Romania
- Dissertation thesis: “Quantum Rings Produced by Nanolithography with an Atomic Force Microscope”
 - Training activities through:
 - Attended lectures, seminars and laboratory sessions
 - Scientific research for thesis preparation and defense
- 1998 – 2003 **Engineering Degree (M.Eng.) in Electronics / Communications** 9 (out of 10)
Polytechnic University of Bucharest, Faculty of Electron. and Telecomm., Bucharest, Romania
- Specialization: “Multimedia Digital Communications and Hi-Fi Systems”
 - Diploma thesis: “Dither Effect in Audio-Video Digital Systems”
- 1998 – 2002 **Bachelor Degree (B.Sc.) in Physics** 9.91 (out of 10)
University of Bucharest, Faculty of Physics, Bucharest – Măgurele, Romania
- Specialization: “Educational Physics”
 - Diploma thesis: “Theoretical Study of the Dither Effect in Audio Digital Systems”
- 1994 – 1998 **High School Baccalaureate Diploma** 7.39 (out of 10)
“Horia Hulubei” Theoretical High School, Bucharest – Măgurele, Romania
- Exact Sciences Profile: “Mathematics – Physics / Informatics”

ACADEMIC ACTIVITIES & ADDITIONAL TRAINING

September 01-30, 2023

Visiting Professor Stage

Catholic University of Louvain (UCLouvain / IMCN / BSMA), Louvain-la-Neuve, Belgium

- Research work: Preparation and characterization of 3D interconnected networks of Bi:Sb and Bi:Sb:Te alloy nanowires for applications in thermoelectrics
- Other activities:
 - Securing knowledge transfer to Ph.D. students and Post-Doctoral researchers
 - Co-authoring a scientific ISI publication (in preparation)

September 01-30, 2022

Visiting Researcher Stage

Catholic University of Louvain (UCLouvain / IMCN / BSMA), Louvain-la-Neuve, Belgium

- Research work: Preparation and characterization of 3D interconnected networks of Bi and Bi:Sb alloy nanowires for thermoelectric devices and topological insulators
- Other activities:
 - Securing knowledge transfer to Ph.D. students and Post-Doctoral researchers
 - Co-authoring a scientific ISI publication – see Annex II, Table 1, Comm. 2

September 01-30, 2021

Visiting Professor Stage

Catholic University of Louvain (UCLouvain / IMCN / BSMA), Louvain-la-Neuve, Belgium

- Research work: Preparation and characterization of 3D interconnected networks of Bi and Bi:Sb alloy nanowires for thermoelectric devices
- Other activities:
 - Securing knowledge transfer to Ph.D. students and Post-Doctoral researchers
- Co-authoring a scientific ISI publication (in preparation)

September 01-30, 2019

Visiting Professor Stage

Catholic University of Louvain (UCLouvain / IMCN / BSMA), Louvain-la-Neuve, Belgium

- Research work: Preparation and characterization of 3D interconnected networks of Bi and Bi:Sb nanowires for thermoelectric devices;
Preparation and characterization of supported networks of interconnected Sn nanowires for Li-ion micro-batteries
- Other activities:
 - Securing knowledge transfer to Ph.D. students and post-Doctoral researchers
 - Co-authoring a scientific ISI publication – see Annex II, Table 1, Comm. 16

September 01-30, 2018

Visiting Researcher Stage

Catholic University of Louvain (UCLouvain / IMCN / BSMA), Louvain-la-Neuve, Belgium

- Research work: Preparation and characterization of supported networks of interconnected Cu/Ni-Sn core/shell nanowires for highly-performant Li-ion micro-batteries
- Other activities:
 - Securing knowledge transfer to Ph.D. students and post-Doctoral researchers
 - Co-authoring a scientific ISI publication – see [Annex II, Table 1, Comm. 24](#)

August 27-31, 2018

Summer School Attendance (as Scientific Advisor & Mentor)

Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), University of Bucharest and National Institute for R&D in Earth Physics (INFP), Bucharest-Măgurele, Romania

- Event: Măgurele Science and Technology Summer School
- Scientific guidance and mentoring of 2 high-school students on the following topic: “*Preparation and characterization of dense and ordered arrays of metallic nanowires*”

July 02-07, 2018

Summer School Attendance (as Professor & Supervisor)

Technical Educational Institute (TEI) of Crete, Department of Electronic Engineering, Chania, Greece

- Event: 6th ELBYSIER (Electronics Beyond Silicon Era) Intensive Course (IC): “*Closing IC*”, ERASMUS+ Framework Program
- Academic duties:
 - Lecture held: “*Electrochemical Synthesis of Vertical ZnO quasi-1D nanostructures for Electronics and Optoelectronics. Template-Assisted and Template-Free Approaches*” (see [Annex I, Table 1, Comm. 2](#))
 - Supervising and mentoring 6 students from Faculty of Physics, University of Bucharest

April 09-14, 2018

Summer School Attendance (as Professor & Supervisor)

University of Warsaw (UW), Faculty of Physics, Warsaw, Poland

- Event: 5th ELBYSIER (Electronics Beyond Silicon Era) Intensive Course (IC): “*Spintronic Technologies*”, ERASMUS+ Framework Program
- Academic duties:
 - Lecture held: “*Quasi One-Dimensional Nanostructures for Electronics, Magnetic Devices & Spintronics*” (see [Annex I, Table 1, Comm. 3](#))
 - Supervising and mentoring 5 students from Faculty of Physics, University of Bucharest

October 09-13, 2017

Summer School Attendance (as Professor & Supervisor)

New University of Lisbon (UNL), Faculty of Science and Technology (FCT), Caparica, Portugal

- Event: 4th ELBYSIER (Electronics Beyond Silicon Era) Intensive Course (IC): “*Graphene Technologies and Nano-Electronics*”, ERASMUS+ Framework Program
- Academic duties:
 - Lecture held: “*Complex Arrays of One-Dimensional Nanostructures Prepared by Template-Assisted Electrochemistry: From Nanofabrication towards Next Generation Devices*” (see [Annex I, Table 1, Comm. 4](#))
 - Supervising and mentoring 5 students from Faculty of Physics, University of Bucharest

September 01-30, 2017

Visiting Professor Stage

Catholic University of Louvain (UCLouvain / IMCN / BSMA), Louvain-la-Neuve, Belgium

- Lecture held: “Complex Patterns of Multi-Functional One-Dimensional Nanostructures: From Nanofabrication towards Next Generation Devices” (see [Annex I, Table 1, Comm. 5](#))
- Research work: Development of an electroless setup used for synthesis of ultra-thin Polyaniline films
Development and characterization of supported networks of interconnected hybrid inorganic/organic Pt/Polyaniline core/shell nanowires for Li-ion micro-batteries
- Other activities:
 - Securing knowledge transfer to Ph.D. students and post-Doctoral researchers
 - Co-authoring a scientific ISI publication – see [Annex II, Table 1, Comm. 27](#)

May 26-30, 2014 **Thematic Course Attendance**
 European – Materials Research Society (E-MRS) 2014 Spring Meeting, Lille, France
 ▪ Topic: “Thin Films Growth by PVD Techniques – Tips & Hints”

July 13-15, 2009 **Summer School Attendance**
 Aristotle University of Thessaloniki, Thessaloniki, Greece
 ▪ Event: “3rd International Summer School on Nanosciences & Nanotechnologies”
 ▪ Training activities through:
 > Attended lectures, workshops and seminars
 > Poster participation at the “6th International Conference on Nanosciences & Nanotechnologies” (see Annex I, Table 4, Comm. 31)

March 29, 2007 **Thematic Course Attendance**
 MUSICS Doctoral School, UCLouvain, Louvain-la-Neuve, Belgium
 ▪ Topic: “La Convergence des bio-nano-technologies et des technologies de l’information et de la communication”

2005 (3 Months) **Research & Development Stage**
 The National Laboratory of Nuclear Physics, Frascati, Italy
 ▪ Concept, design and fabrication of an ultra-stable power-supply unit for an elemental particles detector

2004 (6 Months) **ERASMUS/SOCRATES Scholarship**
 Hannover University, Institute of Solid-State Physics, Hannover, Germany
 ▪ Scientific research in “Quantum Rings” produced by nanolithography with an Atomic Force Microscope (AFM), in the framework of M.Sc. thesis preparation and pre-defense

PERSONAL SKILLS

Mother tongue Romanian

Other languages

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---------|---------------|---------|--------------------|-------------------|---------|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | C2 | C2 | C2 | C2 | C2 |
| French | B2 | B2 | B2 | A2 | A2 |

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
 Common European Framework of Reference for Languages

Communication skills **Excellent communication and scientific dissemination skills acquired through:**
 ▪ Many scientific presentations and laboratory/seminar sessions held
 ▪ Several attendances to conferences, workshops and summer schools
 ▪ Writing of various scientific reports and peer-reviewed ISI publications

Organizational skills **Very good leadership and managerial skills acquired through:**
 ▪ Supervision and scientific guidance of several Ph.D., M.Sc. and B.Sc. students
 ▪ Coordination of a research team for scaling-up an anodization system, targeting mass production of supported and self-supported nanoporous alumina templates with tuneable geometrical features

Main research interests
 ▪ Research and development in nanostructured materials science and engineering
 ▪ Design and characterization of electro-/chemical sensors and biosensors
 ▪ Design and characterization of organic/inorganic opto-/electronic devices

- Research expertise**
- Nanowires and nanotubes development using template – free / assisted approaches
 - Development of supported and self-supported nanoporous alumina (Al_2O_3) templates
 - Synthesis and characterization of organic polymeric nanomaterials with sensing features
 - Development, characterization and integration of various sensors, in particular of electro-/chemical sensors (for *pH* monitoring) and (enzymatic) biosensors
 - Development and characterization of nanostructured opto-/electronic devices
 - Synthesis and characterization of various nanostructured organic and inorganic materials (morphological, structural, magnetic, photo-/electric and optical characterizations)
 - Synthesis, development and characterization of multiferroic materials (morphological, structural, piezo-/magneto-/electrical investigations)
- Job-related skills**
- **Cleanroom processes:**
 - Silicon (Si) wafers handling, cleaning and thermal oxidation (dry & wet)
 - Optical lithography and nanoimprinting technology
 - E-beam and AFM nanolithography (nano-indentation and local anodic oxidation)
 - PVD techniques: thermal and e-beam evaporation, DC/RF (magnetron) sputtering
 - CVD techniques: plasma enhanced CVD, low pressure CVD
 - Etching techniques: wet and dry, isotropic and anisotropic
 - **Electro-/chemistry procedures:**
 - Electrochemical oxidation (anodization)
 - Electrochemical polishing (electropolishing)
 - Electrochemical deposition (electroplating)
 - Electroless and autocatalysis
 - **Ultra-thin mechanical polishing of nanostructured materials**
 - **Morpho-structural characterization methods:**
 - Ellipsometry, profilometry, optical microscopy
 - Scanning (transmission) electron microscopy (SEM / STEM)
 - Transmission electron microscopy (TEM)
 - Atomic force microscopy (AFM / C-AFM / EFM / MFM / PFM / STM)
 - Energy-dispersive X-ray spectroscopy (EDX)
 - X-ray and electron diffraction spectroscopy (XRD / SAED)
 - **Optical characterization of organic/inorganic materials:**
 - Transmission and absorption spectroscopy
 - **Charge transport investigations:**
 - Electrical measurements using Van der Paw technique
 - Hall effect setup and magnetometry (AGM/VSM, SQUID)
 - Low-temperature measurements (using 3He or $^3He/^4He$ dilution refrigerators)
 - DC and/or AC magneto-/electrical measurements and Lock-in technique
- Computer skills**
- Proficient user of the Microsoft products (Windows, Office suite) and of the LaTeX platform
 - Origin (OriginLab), MATLAB (MathWorks), Igor Pro (WaveMetrics),
 - EAGLE (CadSoft), Circuit Maker (Protel), LabVIEW (National Instruments)
 - Photo, audio and video processing, computer networks and IT skills
- Other skills**
- Shooting videos and photography
 - Music and Piano playing
- Driving license**
- Category B, since 23/12/1999

SCIENTIFIC OUTPUT

Honours and awards

Awarding research results (distinctions granted by the Executive Unit for Financing Higher Education, Research, Development and Innovation – UEFISCDI, Romania):

- **PRECISI 2023**, for the articles: *Biosensors* 12(8), 573 (2022), **Q1**; *Nanomaterials* 11(11), 2841 (2021), **Q1**;
- **PRECISI 2021**, for the articles: *Nanomaterials* 11(9), 2286 (2021), **Q2**; *Sensors* 21(12), 4218 (2021), **Q2**; *Scientific Reports* 11, 10086 (2021), **Q1**; *Scientific Reports* 11(1), 5055 (2021), **Q1**; *Nanomaterials* 11(5), 1198 (2021), **Q2**
- **PRECISI 2020**, for the articles: *Adv. Func. Mater.* 30, 1910371 (2020), **Q1**; *Appl. Surf. Sci.* 531, 147332 (2020), **Q1**
- **PRECISI 2019**, for the article: *Physical Review B* 99(6), 064512 (2019), **Q1**
- **PRECISI 2017**, for the article: *RSC Advances* 7(30), 18609 (2017), **Q2**

In 2023:

- Best poster award for the poster entitled: “Highly-sensitive detection of ammonia using polymer based chemiresistive sensors”, presented at the Applications of Chemistry in Nanosciences and Biomaterials Engineering (NanoBioMat 2023: summer session), June 28-30, 2023, Bucharest, Romania (see [Annex I, Table 4, Comm. 5](#))

In 2021:

- Best poster award for the poster entitled: “Hydrogen gas sensing using a polyaniline/gold interdigitated sensor”, presented at the 4th International Conference on Emerging Technologies in Materials Engineering (EmergeMAT), Section 2: Advanced materials and coatings for extreme conditions, November 4-5, 2021, Bucharest, Romania (see [Annex I, Table 4, Comm. 11](#))

In 2019:

- Best poster award for the poster entitled: “Study of the physical properties of P3HT, PCBM and Si:PCPDTBT thin films based photovoltaic structures”, presented at the E-MRS 2019 Spring Meeting, Laser interactions with materials: from fundamentals to applications (Symp. V), May 27-31, 2019, Nice, France (see [Annex I, Table 4, Comm. 20](#))

In 2018:

- Best poster award (sponsor’s prize of 400 EUR offered by AcelorMittal) for the poster entitled: “Novel Cu nanorod arrays for optoelectronic devices”, presented at the 3rd Autumn School on Physics of Advanced Materials (PAMS-3), September 22-28, Technological Educational Institute (TEI) of Crete, Heraklion, Greece (see [Annex I, Table 4, Comm. 21](#))

In 2011:

- Romanian Academy Prize: “Dragomir Hurmuzescu” for the research paper entitled: “Nanowire-templated microelectrodes for high-sensitivity pH detection”, published in *Applied Physics Letters* **94(7)**, 3118 (2009), doi: [10.1063/1.3089227](https://doi.org/10.1063/1.3089227) (see [Annex II, Table 1, Ref. 55](#))

In 2009:

- The same article ([Annex II, Table 1, Ref. 55](#)) was selected to be included in: *Virtual Journal of Nanoscale Science & Technology: Organic-Inorganic Hybrid Nanostructures* **19(9)**, March 2 (2009)

Scientific guidance & mentoring

2022 – 2023:

- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “Laser processing of composite materials based on WO₃/polymers as thin films for sensing membranes”
- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “Decorated Carbon Nano-Walls for Supercapacitors”
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “Highly-sensitive chemiresistive detection of gaseous ammonia”
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “Morphological, elemental and structural characterization of thin films based on Cu₂SnS₃”
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “Study of optical and electrical properties of CuPc-NPs:P3HT:PC₇₁BM ternary compound for bulk heterojunction solar cells”

Scientific guidance & mentoring

2021 – 2022:

- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"MAPLE processed sensors for the detection of nitrites in water"*
- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"Study of thin films for gate electrode in transparent field effect transistors"*
- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"New thin films from organic composite materials for optoelectronic applications"*
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR): *"Preparation and characterization techniques of A^{II}-B^{VI} semiconducting compounds for optoelectronic applications"*, materialized with one published article (see [Annex II, Table 1, Ref. 4](#))
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR): *"Detection of Cadmium ions (Cd²⁺) using an innovative optical fiber – based sensor"*, materialized with one published article (see [Annex II, Table 1, Ref. 10](#))

2020 – 2021:

- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"Optical properties of stoichiometric and sub-stoichiometric Tungsten Oxide (WO₃ and WO_x) thin layers obtained by laser ablation: Highlighting phase transitions through Spectroscopic Ellipsometry analysis"*
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR): *"Preparation and characterization of metallic arrays of vertically-aligned nanowires featuring tunable density"*

2019 – 2020:

- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"Advanced processed and functionalized Gum type alloy for orthopaedic implants"*
- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"CdTe-embedded Cu nanowire arrays for improved absorber layer/holes collector interfaces in superstrate-type photovoltaic cells"*, materialized with one published article (see [Annex II, Table 1, Ref. 9](#))
- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR): *"2D chalcogen materials for biomedical applications"*
- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"Nanostructured Materials for Gas Sensors: Morphological, Structural and Compositional Aspects with a Significant Role in the Sensing Mechanism"*
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR): *"Electrochemical deposition of nanostructured aluminium-doped zinc oxide thin films"*

2018 – 2019:

- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"Study of GeSi Nanocrystals Based Trilayers with Memory Properties"*
- **M.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): *"High Performance Quasi-Solid Supercapacitors using Graphitized Porous Silicon Electrodes"*
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR): *"Preparation and characterization of Ni nanotubes for magnetic device applications"*, materialized with one published article (see [Annex II, Table 1, Ref. 20](#))
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR): *"Electrochemical synthesis and characterization of nanostructured CdTe thin films"*

2017 – 2018:

- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR): *"Fabrication and characterization of Cu nanowire arrays for photovoltaic applications"*, best poster award (sponsor's prize of 400 EUR offered by AcelorMittal) for the poster entitled: *"Novel Cu nanorod arrays for optoelectronic devices"*, presented at the 3rd Autumn School on Physics of Advanced Materials (PAMS-3), September 22-28, Technological Educational Institute (TEI) of Crete, Heraklion, Greece (see [Annex I, Table 4, Comm. 21](#))
- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR): *"Morphological changes of titan surfaces for bioactivity investigations"*

2016 – 2017:

- **B.Sc. thesis**, University of Bucharest, Faculty of Physics, Bucharest-Măgurele, Romania (SUPERVISOR): “*Growth of semiconducting CdTe and ZnO nanowires for photovoltaic applications*”

2015 – 2016:

- **M.Sc. thesis**, UCLouvain/IMCN/BSMA, Louvain-la-Neuve, Belgium (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “*Synthesis and characterization of 3D nanowire networks for high-areal capacity Li-ion battery anodes*”

2014 – 2015:

- **M.Sc. thesis**, UCLouvain/IMCN/BSMA, Louvain-la-Neuve, Belgium (SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “*Production and physical properties of hybrid multiferroic nanostructures*”, materialized with one published article (see [Annex II, Table 1, Ref. 34](#))

2013 – 2014:

- **M.Sc. thesis**, UCLouvain/IMCN/BSMA, Louvain-la-Neuve, Belgium (SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “*Synthesis and Characterization of a Multiferroic Nanocomposite by Impregnation of Ferrimagnetic Nanowire Arrays by a Ferroelectric Polymer*”
- **M.Sc. thesis** (CO-SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “*Synthesis and Characterization of Ferrimagnetic Nanowire Arrays, Embedded in a Piezoelectric Polymer Matrix*”

2012 – 2013:

- **M.Sc. thesis**, UCLouvain/IMCN/BSMA, Louvain-la-Neuve, Belgium (SUPERVISOR and MEMBER OF THE EXAMINATION BOARD): “*Electrochemical deposition of zinc oxide nanorods on transparent conducting substrates*”, materialized with one published article (see [Annex II, Table 1, Ref. 43](#))

Ph.D. program involvements

Jury member (or Reviewer) for Ph.D. public defense:

- December 2019: “*Circuite Optice Integrate cu Plasmoni de Suprafață*”, Faculty of Physics, University of Bucharest (UB), Măgurele, Ilfov, Romania
- March 2023: “*Crystal Structure, d^0 Magnetism and Transport Properties of Non-magnetic Element (Li, Mg, Ag) doped Oxides (ZnO, SnO₂, TiO₂, ZrO₂) for Spintronics Application*”, Department of Physics, Central Institute of Technology Kokrajhar (Deemed-to-be University under MoE, Govt. of India), Kokrajhar-783370, Assam, India
- March 2024: “*Crystal Structure, Magnetic, and Optical Properties of (K, Ag, Mg) doped ZnO and Na-doped TiO₂ Compounds*”, Department of Physics, Central Institute of Technology Kokrajhar (Deemed-to-be University under MoE, Govt. of India), Kokrajhar-783370, Assam, India

Member of the Ph.D. follow-up committee:

- Currently member in the follow-up committee of 8 Ph.D. students enrolled at Physics Doctoral School of CSUD within University of Bucharest (UB), Bucharest, Romania
- Currently member in the follow-up committee of one Ph.D. student enrolled at Louvain School of Engineering (EPL), Université catholique de Louvain (UCLouvain), Louvain-la-Neuve, Belgium

National and international research grants

Project leader:

- **2020-2022**: “*Nanowire-templated back-electrodes for high efficiency solar cells*” (NANODELL), PN-III-P1-1.1-TE-2019-0868, Coordinating institution: University of Bucharest (UB), Romania

Member (key expert) in the research team:

- **2021-2023**: “*Impact of nanocomposite modified anodes on microbial fuel cells performance through changes in biofilm microbial community composition*”, PN-III-P4-ID-PCE-2020-0956, Coordinating institution: University of Bucharest (UB), Romania
- **2020-2022**: “*Nanoimprint lithography for photovoltaic devices*” (NILPV), PN-III-P1-1.1-TE-2019-0846, Coordinating institution: University of Bucharest (UB), Romania
- **2018-2022**: “*Advanced nanoelectronic devices based on graphene/ferroelectric heterostructures*” (grapheneferro), PN-III-P4-ID-PCCF-2016-0033, MDEO R&D Center, Coordinating institution: National Institute for Research and Development in Microtechnologies (IMT), Romania
- **2018-2021**: “*Eco-innovative technologies for recovering of the platinum group metals from scrap catalytic convertors*”, PN-III-P1-1.2-PCCDI-2017-0185, Coordinating institution: University of Bucharest (UB), Romania
- **2018-2021**: “*Extensive use of experience in space and security activities*”, PN-III-P1-1.2-PCCDI-2017-0371, Coordinating institution: Institute of Space Science (ISS) – INFLPR Division, Romania
- **2017-2019**: “*Nanostructures for quantum and plasmonic computing*”, PN-III-P4-ID-PCE-2016-0122, Coordinating institution: University of Bucharest (UB), Romania
- **2014-2017**: “*Multilayered photovoltaic structures for space applications*”, PN-II-PT-PCCA-2013-4-0776, Coordinating institution: University of Bucharest (UB), Romania
- **2010-2013**: “*Advanced soft systems for applications in optics and materials science*”, PN-II-RU-TE-2010-0225, Coordinating institution: University of Bucharest (UB), Romania

Participation in other collaborative research projects:

- **2022:** Involvement in SEGES (Sustainability in education for green energy specialists) project – Iceland Liechtenstein Norway grants
- **2021:** Involvement in ITRES (Sustainability in education for green energy specialists) project – Iceland Liechtenstein Norway grants
- **2011-2016:** Concerted Research Actions (ARC) – Fédération Wallonie-Bruxelles, i.e., ARC 13/18-052 Supracryst, ARC 07/12-003 NANHYMO, ARC 18/23-093 MICROBAT; Government of the Walloon Region, i.e., OPTELCO and NANOROD; Interuniversity Attraction Poles Program (P6/27 and P6/42), Belgium; Research Science Foundation of Belgium (FRS-FNRS), i.e., T.0006.16; EU FP6 (NMP-CT-2004-505955) and FP7 (265073, ITN-Nanowiring)
- **2006-2011:** Programme of excellence NANOTIC of Walloon Region, Belgium (research work carried out in the framework of the Ph.D. program)

Other implications**2021 – Present:**

- Member in the Coordination Committee of the Department of Electricity, Solid State Physics and Biophysics (EFSB) of the Faculty of Physics, University of Bucharest (UB)

2021 – 2023:

- Member in the Coordination Council of the Faculty of Physics, University of Bucharest (UB), on behalf of the Department of Electricity, Solid State Physics and Biophysics (EFSB)

2016 – Present:

- Periodic scientific coordination and assessment of interested B.Sc. and M.Sc. students, for their research practical stages at Faculty of Physics or at other partner institutions

2016 – Present:

- Constant involvement in promotion actions of the educational programs of the Faculty of Physics, including the Master Program entitled: “Physics of Advanced Materials and Nanostructures” (FMAN)
- Constant involvement in the procedures related to the accreditation of educational programs of the Faculty of Physics, University of Bucharest, including the Physics Doctoral School
- Performing regular updates on the institutional websites (www.fizica.unibuc.ro and www.mdeo.eu)

July 20-23, 2019:

- Official mobility at the Institut Laue-Langevin (ILL), Grenoble, France
 - Member of a delegation for the signature of a “Memorandum of Understanding” between University of Bucharest (UB) and ILL.
 - Attendance of a group meeting:
 - Presentation: “*Quasi One-Dimensional Nanostructures for Electronics and Optoelectronics*”
 - Scientific discussions to identify collaboration opportunities between UB and ILL
 - Visit of the laboratories and research infrastructure at ILL

April 02-03, 2019:

- **Research Education Application Days 2019 (READ 2019)**, Polytechnic University of Bucharest
 - Scientific adviser & organizer of the “Physics” session
 - Supervisor of a team of students (B.Sc., M.Sc. and Ph.D.) from the Faculty of Physics

Outreach activities:

- March 31, 2023: “Fizica de la A la Z” – “Physics from A to Z” (FFAZ), Faculty of Physics, UB
 - Workshop: “*From the secrets of Nanotechnology: Imaging at nanometer scale*”
- July 18-31, 2022: Școala de vară pentru elevi – UB Summer University (UBSU)
 - Presentation of the MDEO labs and research activities
- 20/05/2022: 10th National Student Contest of Physics – “Dragomir HURMUZESCU”, University of Bucharest, Faculty of Physics, Romania
 - Involvement in the selection of candidates from Faculty of Physics, University of Bucharest
 - Involvement within contest organization and for establishing the evaluation criteria
 - Member in the examination board, for the students of 3rd and 4th year
- April 2022: “*Despre fascinația fizicii*”
 - Interviu cu un student al Facultății de Fizică, olimpic internațional
 - Implicare în organizare, videoclip realizat cu sprijinul MDEO (click [here](#))
- July 15-16, 2021: Școala de vară pentru elevi – UB Summer University (UBSU)
 - Presentation of the MDEO labs and research activities
- June 2021: “Școala Altfel” - “School in a different way”, Faculty of Physics, University of Bucharest
 - Scientific guidance & mentoring of high-school students

- 21/05/2021: 9th National Student Contest of Physics – “Dragomir HURMUZESCU”, Craiova, Romania (Online edition)
 - Involvement in the selection of candidates from Faculty of Physics, University of Bucharest
 - Involvement within contest organization and for establishing the evaluation criteria
 - Member in the examination board, for the students of 3rd and 4th year
- November 19-21, 2020: «Cu mic, cu mare prin Univers»
 - Presentation of the MDEO labs and research activities
- 27/09/2020: “Noaptea Cercetătorilor” – “Doing Research at Midnight in Romania” (DoReMiRO), ONLINE EDITION, Faculty of Physics, University of Bucharest
 - Presentation of a video clip about the main research facilities of the Nanotechnology Lab, within MDEO research center
 - Video shooting and presentation of a complete experiment, focusing on the preparation and characterization of dense arrays of vertically-aligned nanowires for photovoltaic applications
- 23/08 – 05/09, 2020: “Școala de vară de știință și tehnologie de la Măgurele” (MSciTech 2020), ONLINE EDITION, Faculty of Physics, University of Bucharest
 - Presentation of short video clips about MDEO research infrastructure
- 2020: “Școala Altfel” - “School in a different way” (ONLINE), Faculty of Physics, University of Bucharest
 - Online presentations and short video clips towards school and high-school students
- 2018 & 2019: “Școala Altfel” - “School in a different way”, Faculty of Physics, University of Bucharest
 - Scientific guidance & mentoring of high-school students
- 2019: “Fizica de la A la Z” – “Physics from A to Z” (FFAZ), Faculty of Physics, University of Bucharest
 - Scientific guidance & mentoring of high-school students

Experience as selected evaluator/reviewer

2021 – Present:

- Guest Editor of *Nanomaterials* (ISSN: 2079-4991, Impact Factor: 5.3), for the Special Issue entitled: “Advances in Nanomaterials for Photovoltaic Applications (Volume II)” (open to submissions)
- Guest Editor of *Nanomaterials* (ISSN: 2079-4991, Impact Factor: 5.3), for the Special Issue entitled: “Advances in Nanomaterials for Photovoltaic Applications” (closed with a collection of 12 peer-reviewed publications). ISBN of the edited book: 978-3-0365-7050-1

2016 – Present:

- Invited member in the examination board of several academic position’ contests:
 - 2021: contest for “Scientific Researcher (2nd Degree)”, “Institutul de Cercetări Interdisciplinare”, Faculty of Physics, “Alexandru Ioan Cuza” University (ICI-UAIC), Iași, Romania
 - 2020: 2 contests for “Associate Professor”, Faculty of Physics, University of Bucharest, Romania
 - 2020: contest for “Asset Manager”, Faculty of Physics, University of Bucharest, Romania
 - 2018: 2 contests for “Scientific Researcher” and “Scientific Researcher (3rd Degree)”, National Institute for Materials Physics (NIMP), Măgurele, Romania
 - 2018: contest for “Technician”, Faculty of Physics, University of Bucharest, Romania

2023 – Present:

- Member in the examination board of B.Sc. theses defense (Section: “Physics” – Romanian teaching)
- Member in the examination board of B.Sc. theses defense (Section: “Technological Physics”)
- Member in the examination board of B.Sc. theses defense (Section: “Physics – Informatics”)
- Member in the examination board of M.Sc. dissertations defense (Master Program: “Physics of Advanced Materials and Nanostructures” – PAMN)

2016 – 2022:

- Member in the examination board of B.Sc. theses defense (Section: “Physics” – English teaching)
- Member in the examination board of M.Sc. dissertations defense (Master Program: “Physics of Advanced Materials and Nanostructures” – PAMN)

2014 – 2024:

- Expert evaluator in several national and European research project’s calls

From 2009:

- Selected reviewer for ISI journals: Nanotechnology (IOPscience), J. Physics D (IOPscience), Physica Scripta (IOPscience), Measurement Science and Technology (IOPscience), Materials Research Express (IOPscience), Applied Physics Letters (AIP), Materials Research Bulletin (Elsevier), Applied Surface Science (Elsevier), Arabian Journal of Chemistry (Elsevier), Applied Physics A (Springer), J. Nanoscience and Nanotechnology (ASP).

Workshops & conferences

- Participation at **115** national and international communication events (**6 plenary talks/seminars, 12 invited lectures, 62 oral presentations** and **35 poster contributions**), as speaker, contributor or corresponding author, held in: Romania, Bulgaria, Greece, Turkey, Poland, Ukraine, Portugal, Belgium, the Netherlands, France, Germany, Singapore, China, USA, Canada and Mexico. The list with the attended conferences can be found in [Annex I](#)

Scientific publications

- I am the single author, principal author, co-author or editor of **72 publications**, representing **51 ISI papers, one review ISI paper, one Editorial, 7 ISI proceeding papers** (in extenso), **2 non-ISI articles, 5 book chapters, one laboratory booklet, 3 books (one as the only author) and one edited book**.
- The ISI publications generated more than 850 citations and an **h-index of 20** (Web of Science, 03/01/2024)
- The complete list of publications can be found in [Annex II](#)

ANNEXES

[Annex I](#): the list with the scientific communication events attended

[Annex II](#): the list of scientific publications, including the books and book chapters

All documents requested by University of Bucharest to process my application are enclosed to this CV.

DATE & SIGNATURE

03/01/2024

Assoc. Prof. Ph.D. Eng. Habil. Vlad-Andrei ANTOHE