Curriculum Vitae

Monica FOCSAN (born IOSIN), PhD (since 2010), Habilitation (since 2019), Associate Professor at the Faculty of Physics, Babes-Bolyai University (UBB) and Senior Scientific Researcher grade I (CS I) at the Nanobiophotonics and Laser Microspectroscopy Center (NLMC), Interdisciplinary Research Institute in Bio-Nano-Sciences (ICI-BNS), UBB, Cluj-Napoca, Romania.

Vice-Director of ICI-BNS

Responsible of the NMLC in the frame of VIRTUAL LABS

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Web: *https://www.nanobiophotonics.ro/member/monica-focsan-100*

Professional career

● **October 2023-present:** Associate Professor at the Faculty of Physics, Biomolecular Physics Department, Babes-Bolyai University

● **18 October 2019:** Habilitation thesis defense: *Designed Plasmonic-Based NanoPlatforms to Provide Multiple Functionalities from Efficient Nanoscopic Light Sources to Integrated Multimodal Biosensing and Diagnosis*

● **2016-present:** Scientific Researcher I (CS I), ICI-BNS, Babes-Bolyai University

● **2012-2013**: Maternity leave

● **2012-2016:** Scientific Researcher grade III (CS III), Babes-Bolyai University

● **2010-2012:** Postdoctoral Fellowship, Babes-Bolyai University, Romania (Prof. Simion Astilean group)

● **2006-2009:** PhD in Physics, co-direction Joseph Fourier University, France/Babes-Bolyai University, Romania. Thesis title: *Synthesis of Gold Nanoparticles and Microfabrication of Protein Structures for Biological Applications*

● **2005-2007:** M. Sc. in Physics, Babes-Bolyai University, 6 months Erasmus Research internship at Joseph Fourier University, Grenoble, France. Master thesis: *Applications de l'absorption à deux photons à la photochimie intracellulaire in vivo*

● **2001-2005:** B. Sc. in Medical Physics, Babes-Bolyai University, Faculty of Physics, Romania

Visibility of the scientific activity

● **Publications**: **134 articles (124 ISI),** from which 69 as a main author/corresponding author, some of them in prestigious journals such as Nano Letters (IF-13.19), TrAC Trends in Analytical Chemistry (IF-13.5), Biosensors&Bioelectronics (IF-11.8), ACS Appl Mater Interfaces (IF-8.3), Sci. Total Environ. (IF-8.2), Int. J. Biol. Macromol (IF-7.7), Nanoscale (IF-6.7), Biomaterials Science (IF-7.59) etc (more details in Annexe 1)

● **2 books, 6 book chapters (Elsevier, IOP Press, Springer and WSP), 3 O.S.I.M patent applications form, 4 O.S.I.M patents granted**

● **Hirsh Index: 37** (Scholar)**34** (WoS), citations: ~3700 (Scholar)

● **International Conferences:** over 80 communications; ***over 25 invited, keynote and plenary lectures***

Honors and Awards

● **2026: Featured in "Celebrating Excellence in Research: Women of Materials Science"**, Royal Society of Chemistry

● **2025: Interview for Scientific Excellence** (https://news.ubbcluj.ro/conf-univ-dr-habil-monica-olivia-focsan-studentii-si-doctoranzii-mei-ma-inspira-in-fiecare-zi-si-ma-fac-sa-mi-doresc-sa-fiu-mai-buna/)

● **2025: Featured in "Celebrating Excellence in Research: Women of Materials Science"**, Royal Society of Chemistry

● **2025:** Scientific Excellence diploma of Babeș-Bolyai University

● **2024:** Scientific Excellence diploma of Babeș-Bolyai University

● **2023:** Excellentia Teacher at the Xth edition of the Excellentia Awards, UBB

● **2023: Experienced Researchers Teams trophy** at the 1 st Romanian Research Gala organized by the Ministry of Research, Innovation and Digitalization.

● **2021: Gold Medal at EUROINVENT**

● **2021: Excellence Diploma** by the National Institute for Research, Development, Urban Planning and Sustainable Territorial Development "URBAN-INCERC

● **2020: Advanced Fellowship,** Institute for Advanced Studies in Science and Technology-STAR-UBB Institute- UBB's institute of Excellence

● **2020:** Scientific Excellence diploma of Babeș-Bolyai University

● **2018: Constantin Miculescu prize of the Romanian Academy**

● **2018: Interview for Scientific Excellence,** https://news.ubbcluj.ro/monica-focsan-phd-senior-scientific-researcher-i-cs-i-at-the-nanobiophotonics-and-laser-microspectroscopy-center-interdisciplinary-research-institute-in-bio-nano-sciences/
● **2018: Advanced Fellowship,** Institute for Advanced Studies in Science and Technology-STAR-UBB Institute- UBB's institute of Excellence
● **2016:** Scientific Excellence diploma of National Award "*Rada Mihalcea Young Researcher in Science and Engineering"*.
● **2016: L'oreal -UNESCO Fellowship "*Women in Science*"**
● **2016:** Scientific Excellence diploma of Babeș-Bolyai University
● **2015:** "*High-level scientific visit for invited researchers*" grant, Campus France, Lyon

Teaching activities

● **2024:** *Course:* ***Applications of bio(nano)medical spectroscopy and imaging*** *(25 %), Doctoral School of Physics,* Babes-Bolyai University.
● **November 2023:** *Course* ***ABC in Publishing***, Bachelor, Master and Doctoral level, UBB.
● **2023-2024*:*** Presentation of the Faculty of Physics during the ***"Long weekend for high school students at UBB"*** event
● **2023-present:** *Course and laboratory:* ***Medical equipment***, Bachelor level year II course, Faculty of Physics, Babes-Bolyai University.
● **2022-present:** *Course and laboratory:* ***Molecular spectroscopy complements***, Master level year I, Faculty of Physics, Babes-Bolyai University.
● **2022-present:** *Course and laboratory:* ***NanoBiophotonics,*** Master level years I-II course, Faculty of Physics, Babes-Bolyai University.
● **2022-present:** *Course, seminar and laboratory:* ***Technological applications of lasers: Biophotonics,*** Bachelor level year III course, Faculty of Physics, Babes-Bolyai University.
● **2020-2024:** *Course:* ***Nanostructures and Macromolecular systems*** *(20 %), Doctoral School of Physics*, Babes-Bolyai University.
● **2013-2016:** Teaching laboratory: "*Monitoring protein denaturation using fluorescence spectroscopy*", 1st year master students, Faculty of Physics, Babes-Bolyai University.
● **2011:** *Course:* ***General Optics***, 2nd year undergraduate students, Faculty of Physics, Babes-Bolyai University, Zalau Extension.
● **2010-2016:** *Teaching laboratory: Molecular Fluorescence,* 1st year master students, Faculty of Physics, Babes-Bolyai University.
● **2010-2016:** Teaching laboratory practice: "*Introduction to nanotechnology*", 2nd year undergraduate students, Faculty of Physics, Babes-Bolyai University.
● **2017-2018:** French undergraduate program: "*Biophysics",* University of Agricultural Science and Veterinary Medicine (USAMV), Cluj-Napoca.

Supervision of graduate students and postdoctoral fellows

● **2025-2026:** Coordinator of the bachelor student Daria Ursa awarded with **1** year Special Scholarships for Research Activity, from Babes-Bolyai University, Cluj-Napoca.
● **2024-2025:** Coordinator of the bachelor student Carmen Maxim and master students Madalina Tudor, Mihnea Moruz and Andreea Balmus awarded with 1 year Special Scholarships for Research Activity, from Babes-Bolyai University, Cluj-Napoca.

● **2023-2024:** Coordinator of the bachelor student Vlad Cucuiet awarded with 1 year Special Scholarships for Research Activity, from Babes-Bolyai University, Cluj-Napoca.
● **2022-2024 –** Mentor of PhD Andreea Câmpu during her postdoctoral fellow.
● **2022-2023:** Coordinator of the bachelor students Madalina Tudor, Mihnea Moruz and Vlad Cucuiet awarded with 1 year Special Scholarships for Research Activity, from Babes-Bolyai University, Cluj-Napoca.
● **2021-2022:** Coordinator of the master student Daria Stoia awarded with 1 year Special Scholarships for Research Activity, from Babes-Bolyai University, Cluj-Napoca.
● **2021 – present:** Advisor of 6 PhD students (Radu LAPUSAN, Alexandru HOLCA, Daria STOIA, Ismaël MAHBOUB, Vlad CUCUIET and Andreea CIPLEA)
● **2010-present:** Supervision of 18 undergraduate students and 10 master students.

Invited Positions, Research Visits and Advanced Training

● **19–22 Nov 2025:** Institut des Molécules et des Matériaux du Mans, Le Mans, France – *Invited Professor*
● **27–31 Oct 2025:** Sapienza University of Rome, Rome, Italy – *Invited Professor*
● **18–20 Mar 2025:** *Days of Microscopy*, exclusive ZEISS event, Aalen, Germany
● **Nov 2023:** Institut des Molécules et des Matériaux du Mans, Le Mans, France – *Invited Professor*
● **Dec 2018:** SPINTEC, Grenoble, France – *Invited Researcher*
● **Dec 2018:** École Normale Supérieure de Lyon, Claude Bernard University Lyon 1, Lyon, France – *Invited Researcher*
● **Jun 2015 (6–14 Jun) & Oct–Nov 2015:** École Normale Supérieure de Lyon, Claude Bernard University Lyon 1, Lyon, France
Research topic: Microfluidic platform for integrated plasmonic detection
● **25–27 Feb 2014:** *6th European Short Course on Time-Resolved Microscopy and Correlation Spectroscopy* and *SymPhoTime Training Day*, PicoQuant, Berlin, Germany
● **Oct–Dec 2011:** Laboratoire Interdisciplinaire de Physique, Grenoble, France
Research topic: Laser fabrication of 3D highly active and ultrasensitive SERS microchips in microfluidic channels
● **10–18 Jun 2011:** Paris 13 University, Faculty of Medicine, France
Research topic: Localized Surface Plasmon Resonance biosensor for protein detection
● **2006–2009:** Laboratoire Interdisciplinaire de Physique, Joseph Fourier University, Grenoble, France
Research topic: Microfabrication of protein structures for biological applications
● **Feb–Jul 2006:** Master's Internship, Laboratoire Interdisciplinaire de Physique, Joseph Fourier University, Grenoble, France
Research topic: Laser fabrication of biocompatible 3D protein microstructures

Participation to international/national PhD committee

● **2025:** Reviewer of the Assoc. Prof. PhD Marcela-Elisabeta BARBINTA-PATRASCU's Habilitation defence committee, University of Bucharest
● **2024:** Reviewer of the Aicha AZZIZ's PhD defence committee, Le Mans University, France.
● **2024:** Reviewer of the Assoc. Prof. PhD Claudia CHILOM 's Habilitation defence committee, University of Bucharest.
● **2022:** Reviewer of the Mina RĂILEANU's PhD defence committee, University of Bucharest

● **2022:** Reviewer of the Madalina Nistor's PhD defence committee, University of Agricultural Sciences and Veterinary Medicine, Cluj Napoca.
● **2021:** Reviewer of the Cristian Tira's PhD defence committee, Babeş-Bolyai University.
● **2021:** Reviewer of the Raluca Borlan's PhD defence committee, Babeş-Bolyai University.
● **2021:** Reviewer of the Tie Bi Leopold's PhD defence committee, Babeş-Bolyai University.
● **2020:** Reviewer of the Andreea Campu's PhD defence committee, Babeş-Bolyai University.
● **2018:** Reviewer of the Micouin Guillaume's PhD defence committee, Lyon 1 University, Fr.
● **2016 – present**: Scientific advisor in 7 doctoral committees (Babeş-Bolyai University and University of Agricultural Sciences and Veterinary Medicine, respectively)

Research projects

● **Director of 14 international/national grants/fellowships;** Below are listed most important research projects awarded based on competition where the project leader was project coordinator/group lider UBB**.**

► *Plasmon mediated biology: Exploitation of plasmonics to investigate and enhance biological processes and application to biomedical issues*, Contract No.: 760037/23.05.2023, CF 199/28.11.2022, Budget: 1.417.290.95 EUR, Period: 1 July 2023 - 30 Jun 2026, https://bioplasmonics.eu/, Institutional Responsible: Assoc. Prof. Monica FOCȘAN

► *SERS/Thermoplasmonic nanosensonsor for portable detection [acron. ThermoPlasSens*, International Bilateral Cooperation Project Brâncuși Romania-France, PN-IV-P8-8.3-PM-RO-FR-2024-0144, Project implementation period: 2024 – 2025, Project Director: Assoc. prof. dr. Monica Focsan

► *Ready-to-use fexible wound dressing with synergistic photothermal and antimicrobial capabilities;* Total amount: ~ 50.500 Euro, Project implementation period: June 2022-June 2024 https://www.nipne.ro/proiecte/pn3/66-proiecte.html; UBB Group Lider; Team Members: prof Simion Astilean, PhD Raluca Borlan, PhD Andreea Campu, Master Student Daria Stoia

► *Portable Plasmonic Nanochip for Fast-On-Site Cardiac Troponin Biomarker Quantitative Diagnostic Test*, Total amount: ~ 123.000 Euro. Project implementation period: Nov 2020 - Oct 2022, https://sites.google.com/view/nanofastdiag; Project Coordinator; Team members: MD Simona Cainap, MD Dan Olinic, MD Calin Homorodean, MD Leontin Lazar, MD Diana Lazar, Prof Simion Astilean, PhD Monica Potara, PhD Ana Maria Craciun, Post Doc. Andreea Campu, Master Student Ilinca Muresan

► *Flexible PDMS-integrated Plasmonic Paper as Versatile Nanochip for Metal Enhanced Fluorescence Biosensing*, Total amount: ~ 90.000 Euro. Project implementation period: Sept 2020 - Aug 2022, https://sites.google.com/view/chip4mef; Project Coordinator; Team members: PhD Ana Maria Craciun, PhD Andreea Campu, PhD Laurentiu Susu.

► *Theranostic microplatforms for multimodal therapy of human ocular pathologies, a new paradigm in biomedical applications*, Total amount: ~ 46.000 Euro. Project implementation period: Nov 2020 - Oct 2022,

https://sites.google.com/usamvcluj.ro/microplatther; UBB Group Lider; Team members: Prof Simion Astilean, Post Doc. Andreea Campu, Post Doc. Raluca Borlan, Master Student Daria Stoia

► *Designing new, flexible and low-cost paper-based sensing nanoplatforms through plasmonic calligraphy for performing multiplexed ultrasensitive detection of cancer biomarkers*, Total amount: ~ 100.000 EURO, Period: May 2018-Avril 2020, https://sites.google.com/site/nanoforall2018/home/project-overview; Project Coordinator

► *Plasmonic-Microfluidic Biosensor for Real Time Detection of Relevant Biomarkers (NanoFlu)*, Funding agency: UEFISCDI; Partnerships program, 3 parteners (Babes-Bolyai University, University of Medicine and Pharmacy "Iuliu Hatieganu", Private Company-APRIL), Total amount: ~ 327.000 EURO, Period: July 2013-September 2017, https://sites.google.com/site/nanoflusensorsen/; Project Coordinator, 24 members, including master students, PhD students, Post Doct, Young and Senior Researchers

► *Controlling FRET by surface plasmon resonance in multilayer "core-shell" metallic nanoparticles towards efficient nanoscopic light sources (NanoLight)*, Funding agency: UEFISCDI; Human Resources Research Projects for Young Independent Team, Total amount: ~122.150 EURO, Period: October 2015 - September 2017, https://sites.google.com/site/nanolight2014/; Project Coordinator; Team members: Post Doc Ana Maria Craciun, PhD Sorina Suarasan, Prof Simion Astilean, PhD Cristian Tira, Post Doc Adriana Vulpoi, PhD Andreea Campu

► *Microfluidic platform for integrated plasmonic detection (2plamidet), Funding agency: UEFISCDI;* Mobility International grant, Brancusi Romania-France, Total amount: ~ 5.000 EURO, Period: 2015-2016

● **Key Member** of more than 25 national and international grants (see https://www.nanobiophotonics.ro/projects/national-projects)

Invited Lectures (selection)

1. **M. Focsan -** *From Synthesis to Device: Plasmonic Nanoparticles for Ultrasensitive and Sustainable Optical Sensing*, Sustainable Photonics Conference, July 15-17, Hangzhou, China - **Invited Lecture**

2. **M. Focsan -** *Plasmonic Nanoplatforms: From Biosensing to Cancer Theranostics, ,* TIM26 Physics Conference 11 - 13 June 2026 Timisoara - **Plenary Lecture**

3. **M. Focsan -** *Multifunctional Graphene-Based Plasmonic Nanoplatforms for Enhanced Sensing and Imaging*, Graphene India, March 9-12, 2026, Kochi, India - **Invited Lecture**

4. **M. Focsan -** *Innovative Plasmonic Nanobiosensors in Biophotonics: From Biomarker Detection to Imaging and Therapy*, 3rd International Conference - Advances in 3OM and Photonics Technologies, 8- 11 December 2025, Timisoara, Romania - **Keynote Lecture**

5. **M. Focsan** - *Miniaturized Microfluidic Plasmonic Chip for Enhanced Biosensing*, 15th International Conference on Metamaterials, Photonic Crystals and Plasmonics, 22 - 25 July, 2025, Malaga, Spain - **Invited Lecture**

6. **M. Focsan** - Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XXII section, SPIE Photonics WEST**,** 25-31 January 2025, San Francisco, USA - **Invited Lecture**

7. **M. Focsan** - Innovative Plasmonic Nanobiosensors for Fast Real-Time Biomarker Detection: From Simulated to Real Sample Application, NATO-SPS ARW Biotechnology and human enhancement: present research and future perspectives, 3-5 Octomber 2023, Italy - **Invited Lecture**

8. **M. Focsan** - *Portable Microfluidic Plasmonic Chip for Fast Real-Time Cardiac Troponin I Biomarker Detection*, The 13th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META'2023), special section: SP11., July 2023, Paris, France - **Invited Lecture**

9. **M. Focsan** - *Flexible and Miniaturized Microfluidic Paper-based Plasmonic Chip for Efficient NIR Metal Enhanced Fluorescence Biosensing and Imaging*, International Workshops on Nano and Bio-Photonics" (IWNBP), September 2022, Evian, France - **Invited Lecture**

10. **M. Focsan** - *Calligraphed selective plasmonic sensor on paper platform for multiplex optical detection* Quo vadis, biosensors, a conference in honor of Professor Jean-Louis Marty, July 2020, Bucharest, Romania - **Invited Lecture**

11. **M. Focsan** - *Calligraphed Plasmonic Paper Platforms for Multiplexed Detection* 5th International Workshop on Nano- and Biophotonics (IWNBP 2019), September 2019, St Nectaire, France - **Invited Lecture**

12. **M. Focsan** - *Designed Plasmonic-Based NanoSensors for Integrated Multimodal Biodetection* 6th International Workshop on Advanced, Nano- and Biomaterials and Their Applications and Sixth French-Romanian Topical Meeting on Nano and Biomaterials, May 2019, Cluj-Napoca, Romania - **Invited Lecture**

13. **M. Focsan** - *Gold NanoBipyramids Performing as Highly Sensitive Dual-Modal Optical Immunosensors*, Biosensors as tools for today's challenges, July 2018, Bucharest, Romania - **Invited Lecture**

14. **M. Focsan** - *Self-assembled Plasmonic Nanostructures for Ultrasensitive Detection*, 2nd International Conference on NanoMaterials for health, energy and the environment, Flic en Flac, Mauritius, September 2016 - **Invited Lecture**

15. **M. Focsan** - *Plasmonic Platforms for Ultrasensitive Detection*, IWNBP 2015, 3rd International Workshop on Nano and Bio-Photonics, December 2015, Cabourg, France - **Invited Lecture**

Organization of Scientific Meetings

● **2027: Conference Chair** of the *Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XXIV***,** SPIE Photonics WEST**,** 30 January - 4 February 2027, San Francisco, USA, https://spie.org/PW27B/conferencedetails/nanoscale-for-biomedical-applications

● **2026: Conference Co-Chair of** *21st European Conference on the Spectroscopy of Biological Molecules (ECSBM 2026),* August 30 – September 03, 2026 Cluj Napoca, Romania, https://phys.ubbcluj.ro/ecsbm2026/

● **2026: Session Chair and Member of the Program Committee** of the *Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XXIII section***,** SPIE Photonics WEST**,** 17-23 January 2026, San Francisco, USA

● **2025: Session Chair and Member of the Scientific Committee** of the *Advances in 3OM (Opto-Mechatronics Opto-Mechanics and Optical Metrology) and Photonics Technologies SPIE-affiliated Intl Conference*, 8-11 December, Timisoara, Romania

● **2025: Co-organizer and Chair** of *Electromagnetic Radiation in Advanced Techniques for Technological Progress and Resilience, Smart Diaspora Conference***,** 4 – 7 November 2025, Cluj Napoca, Romania.

● **2025: Session Chair and Member of the Program Committee** of the *Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XXII section***,** SPIE Photonics WEST**,** 25-31 January 2025, San Francisco, USA

● **2023: Session Chair** of the *4th International Conference on NanoMaterials for Health, Energy and the Environment* (ICNM2023), 27 – 31 August 2023, Caloundra, Australia.

● **2023: Session Chair** of the *Advanced Research Workshop (ARW) Biotechnology and Human Enhancement: Present Research and Future Perspectives*, San Felice Circeo, Latina, Italy

● **2019: Local Chair** of the *Sixth International Workshop on Advanced, Nano- and Biomaterials and their Applications*, Cluj Napoca, Romania.

● **2012: Member of the organization committee** of the *31st European Congress on Molecular Spectroscopy (EUCMOS)*, Cluj Napoca, Romania

Editorial activities

● **2025:** Guest editor for **Journal of Biomedical Optics**, *Nanoscale Imaging, Sensing, and Actuation* https://www.spiedigitallibrary.org/journals/journal-of-biomedical-optics/call-for-papers

● **2025:** Guest editor for **Frontiers in Immunology** - *"MicroRNAs in Skin Cancers: Modulators of Immune Responses and Implications for Immunotherapy"*, https://loop.frontiersin.org/people/864651/editorial

● **2022:** Guest editor for **International Journal of Molecular Sciences**– *"Molecules and Nanoparticles for Cancer Diagnosis and Therapy"*

● **2021:** Special issue guest editor for **Journal of Molecular Structure** – *"Bridging molecules and nanoparticles - the way from optical spectroscopy to cancer therapy", ELSEVIER*

Major collaborations

● **Dr. Patrice Baldeck, Prof. Dr. Stephane Parola, Assoc Prof. Frederic Lerouge**, Universitaté Lyon 1, ENS de Lyon, Laboratoire de Chimie, Lyon, France

● **Dr Nadia Djaker,** Universitaté Paris 13, Laboratoire CSPBAT, Equipe Spectroscopies Biomolécules et Milieux Biologiques, Paris, France.

● **Prof. Marc Lamy de la Chapelle,** Le Mans Université, l'Institut des Molécules et Matériaux du Mans, Le Mans, France

● **Prof. Anna Piperno,** University of Messina, Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Messina, Italy

● **Prof. Luciano de Sio,** Sapienza - University of Rome
● **Dr. Francesca Petronella,** Italian National Research Council, Italy
● **Prof. Filippo Pierini**, Institute of Fundamental Technological Research of Polish Academy of Sciences in Warsaw, Poland.
● **Prof. Sebastian Wachsmann Hogiu,** McGill University Canada.

Memberships of Scientific Societies

● **2025-2026:** SPIE - The International Society for Optics and Photonics
● **2006-2007:** Italian Physics Society
● **2006-present:** Romanian Society of Biophysics

Media Coverage and Public Visibility

- ✓ https://www.efainlacluj.ro/cercetatoarea-de-la-ubb-care-lupta-cu-celulele-canceroase-si-inspira-o-generatie-studentii-mei-ma-fac-sa-vreau-sa-fiu-mai-buna-in-fiecare-zi/

- ✓ https://agerpres.ro/educatie-stiinta/2025/09/09/cluj-ubb-pe-coperta-journal-of-materials-chemistry-c-cu-un-studiu-coordonat-de-conf-dr-monica-focsan--1482738

PATENTS

1. **M. Focsan**, A. Campu, S. Astilean, T. Murariu, I. Turcu, *Plasmonic microfluidic device based on gold bipyramidal nanoparticles*; Brevet Național O.S.I.M. RO 133447 B1; 2021 **– granted**

2. **M. Focsan**, A. Campu, A. M. Craciun, S. Astilean; *Microfluidic detection device fabricated through the integration of calligraphed plasmonic paper in polydimethylsiloxane*; Brevet Național O.S.I.M. RO 135233 A0; 2021 **– granted** RO135233 (B1)

3. M. Moruz, A. Campu, S. Astilean, **M. Focsan** *Miniaturized electrochemical sensor based on integrated gold electrodes on a flexible support,* O.S.I.M., Romania, A100091 - **granted**

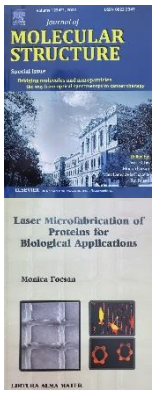
4. A. Campu, M. Moruz, M.Potara, S. Astilean, **M. Focsan,** *Metallized micro-rough flexible polydimethylsiloxane substrate for dual SPR-SERS detection*; Brevet Național O.S.I.M. RO 137390 B1; 2025 **– granted**

5. A. Campu, I. Muresan, M.Potara, S. Astilean, S. Cainap, **M. Focsan;** *Efficient plasmonic nanosensor based on gold nanobipyramids for the multimodal detection of the cardiac troponin I biomarker I;* Brevet Național O.S.I.M. RO 136059 A0; 2022.

6. Daria Stoia, F.-. Zorila, R. Moisa (Stoica), I. Turcu, S. Astilean, M. Bacalum, **M. Focsan,** SmartWoundPatch – Smart dressings with thermoplasmonically enhanced antimicrobial activity *(ro. SmartWoundPatch – Pansamente inteligente cu activitate antimicrobiana amplificata termoplasmonic)*, National O.S.I.M Patent, 2024, A100347.

BOOKS AND BOOKS CHAPTERS

1. **Book:** Edited by V. Chis, **M. Focsan**, M. de la Chapelle, R. Fausto, Journal of Molecular Structure Elsevier, Special Issue *Bridging molecules and nanoparticles the way from optical spectroscopy to cancer therapy*, vol 1254F1, 2022.



2. **Book: M. Focsan,** *Laser Microfabrication of Proteins for Biological Applications*, Monica Focsan, Editura Alma Mater, 2013, ISBN 978-606-504-164-6

3. **Book Chapter:** Alexandru-Milentie Hada, Ana-Maria Craciun, **Monica Focsan**, Simion Astilean, Chapter 11: Fluorescent Metal Nanoclusters for Bioimaging Applications in the NIR, Fluorescent Metal Nanoclusters, Edited by Suban K. Sahoo; Beatriz Jurado Sánchez Volume 34, DOI: https://doi.org/10.1039/9781837679393, Hardback ISBN: 978-1-83767-938-6

4. **Book Chapter:** R. Borlan, A. Campu, **M. Focsan,** S. Astilean, Synergistic nano-photodynamic therapy/nano-photothermal therapy combination book chapter in NanoPDT Nanomaterials-Enhanced Photodynamic Therapy, - editors Saeid Moghassemi, Ricardo Bentes Azevedo and Christiani Andrade Amorim, Elsevier 2026, 369-417, ISBN: 978-0-443-40431-3

5. **Book Chapter:** Daria Stoia, **Monica Focsan***, Multifunctional Polymeric Microspheres for Targeted Delivery and NIR-Light Stimulated Release of the Therapeutic Molecule Avastin at Human Retina Level, Biotechnology and Human Enhancement, Present Research and Future Perspectives, editors Luciano De Sio, Eyup Kuntay Turmus, 2025, 79-110, ISBN 978-94-024-2295-5

6. **Book Chapter:** V. Sprincean, A. Chirita, L. Leontie, S. Astilean, **M. Focsan**, A.M. Craciun, A. Paladi, V. Andruh, F. Paladi, Advanced Physical Technologies with the UVS Application in Environment Security, book chapter in Monitoring and Protection of critical infrastructure by unmanned systems, editors P. Daponte and F. Paladi, IOS Press, Amsterdam, 2023, 101- 113, ISBN 978-1-64368-376-8

7. **Book Chapter:** F. Petronella, D. Stoia, Y. Ziai, F. Zaccagnini, V. Scognamiglio, D. Maniu, C. Rinoldi, **M. Focsan**, A. Antonacci, F. Pierini, L. De Sio, Plasmonic-based biosensors for the rapid detection of harmful pathogens, book chapter in Optical Materials and Applications: Volume 1 Novel Optical Materials, Edited By: Iam Choon Khoo, Francesco Simoni and Cesare Umeton, World Scientific Publishing, https://doi.org/10.1142/9789811280603_0006, 2023, 155–194, ISBN 978-981-12-8059-7.

8. **Book Chapter:** M. Potara, A. Campu, S. D. Maniu, **M. Focsan***, I. Botiz, S. Astilean, *Advanced nanostructures for microbial contaminants detection by means of spectroscopic methods*, book chapter in Advanced Nanostructures for Environmental Health, editors L. Baia, Z. Pap, M. Baia and K. Hernadi, Elsevier Inc (2020) 347 - 384, ISBN: 978-0-12-815882-1. ***All authors contributed equally to this work.**

9. **Book Chapter:** M. Potara, **M. Focsan***, A.M. Craciun, I. Botiz and S. Astilean, *Polymer-coated plasmonic nanoparticles for environmental remediation: synthesis, functionalization and properties*, chapter in New Polymer Nanocomposites for Environmental Remediation, eds. C. M. Hussain and M. Ajay, Elsevier, eds. C. M. Hussain and M. Ajay, ***Elsevier***, 2018, Pages 361-387, ISBN:9780128110331, ***All authors contributed equally to this work.**

PUBLISHED ARTICLES

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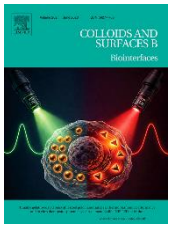
2. 

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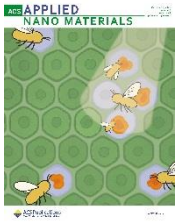

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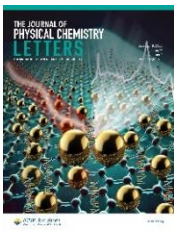

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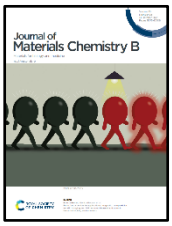

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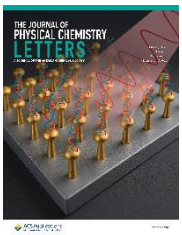

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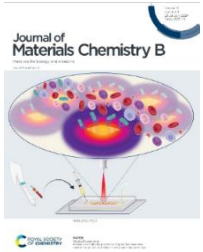

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