Curriculum Vitae



PERSONAL INFO

Last name: Farcău
First name: Cosmin-Adrian
Age: 44
Address: INCDTIM, Str. Donat 67-103, Cluj-Napoca, Romania
Telephone: 0264584037 / 179
Email: cfarcau@itim-cj.ro

SCIENTIFIC INTEREST

Nanophotonics and functional photonic materials, with emphasis on:

- Bottom-up nanofabrication and directed self-assembly of colloidal nano/microarchitectures
- Light–matter interactions in plasmonic and photonic nanostructures
- Nanophotonic enhancement of molecular spectroscopy: SERS and enhanced fluorescence
- Nanophotonic platforms for ultrasensitive molecular /environmental sensing
- Functional nanophotonic systems with enhanced light–matter coupling

CAREER TRACK

2022 - **Team Leader** of the *NanoPhotoniX* team at National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM), Cluj-Napoca, Romania.

2017 - **Scientific Researcher I**, INCDTIM, Cluj-Napoca, Romania.

2014 - **Scientific Researcher II (I** from 2016), Institute for Interdisciplinary Research in Bio-Nano-Sciences (IIRBNS), Babeș-Bolyai University.

2011 - 2014 **Scientific Researcher III**, IIRBNS, Babeș-Bolyai University.

2009 - 2011 **Postdoctoral researcher** at LPCNO (Laboratoire de Physique et Chimie de Nano-Objets) UMR 5215 CNRS-INSA-UPS, Toulouse, France; superviser prof. L. Ressier. (*convective self-assemblyof nanoparticles for strain sensors*).

2008 - 2009 **Postdoctoral researcher** at CEMES (Centre d'Elaboration de Materiaux et d'Etudes Structurales) UPR 8011 CNRS, Toulouse, France; superviser prof. R. Carles. (*optical and vibrational properties of glass-embedded Ag nanocrystals*)

STUDIES

2005 - 2008 **Doctorate in Physics**, Faculty of Physics, Babeș-Bolyai University, Cluj-Napoca, Romania. (*Ordered Plasmonic Nanostructures: from Fabrication to Relevant Applications in Optical Spectroscopy and Sensing*)

2004 – 2005 **Master in Physics**, Faculty of Physics, Babeș-Bolyai University, Cluj-Napoca, Romania.

2000 – 2004 **Licence in Physics**, Faculty of Physics, Babeș-Bolyai University, Cluj-Napoca, Romania.

RESEARCH STAGES

- Centre de Recherche Paul Pascal, CNRS (dr. R.A.L. Vallee), Bordeaux -Pessac, November 2024, research stage in the frame of a Ro-Fr colaboration project *Brancusi*.
- Centre de Recherche Paul Pascal, CNRS (dr. R.A.L. Vallee), Bordeaux -Pessac, July 2016, research stage in the frame of a Ro-Fr colaboration project *Brancusi*.
- Institut fur Physikalische Chemie (prof. J. Popp), Friedrich Schiller University, Jena, Germany, November 2007. (*SERS and SNOM studies*)
- Laboratoire de Spectrometrie Physique (dr. P. Baldeck), Joseph-Fourier University, Grenoble, France, MIRA Fellowship (*Mobilite Internationale Rhone-Alpes)*, March - May 2007. (laser fabrication of metalic *microwires*)
- Institut fur Physikalische Chemie (prof. W. Kiefer), Julius Maximilian University, Wuerzburg, Germany, Socrates Scholarship, April - August 2005. (*SERS studies*)

RESEARCH PROJECTS COORDINATED

- Management Committee Member, COST Action – *Supramolecular Luminescent Chemosensors for Environmental Security (LUCES)*, CA22131, 2025 - .
- PN-IV-P8-8.3-PM-RO-FR-2024-0163, *Achieving Enhanced Collective Molecular Emission through their Coupling with Nano-structured Metallic Surfaces*, 2024-2025. https://www.itim-cj.ro/bilateral/summon/
- Management Committee Member, COST Action *Plastics monitoRIng detectiOn RemedIaTion recoverY - PRIORITY*, CA20101, 2022-2025.
- PN-III-P4-ID-PCE-2020-1607, *Active tuning of plasmon resonances in gold nanoparticle arrays on elastomeric substrates for ultrasensitive dual MEF/SERS biosensing*, 1.199.330 lei, 2022-2024. https://www.itim-cj.ro/PNCDI/optigap/
- RO-NO-2019-0517, *Nanostructured microfluidic analytical platform for dual SERS-electrochemical detection of emerging environmental pollutants*, 1.177.343 EUR, 2020-2023. https://www.itim-cj.ro/polsens/
- PN-III-P2-2.1-PED-2019-5473, *Nanostructured plasmonic platform for dual electrochemical/SERS detection of environmentally persistent pharmaceutical pollutants*, 600.000 lei, 2020-2022. https://www.itim-cj.ro/PNCDI/pharmexer/
- Romania - JINR Dubna cooperation project, *Surface Enhanced Coherent Anti-Stokes Raman Scattering (SECARS) on Hybrid Colloidal Photonic-Plasmonic Crystals*, 2019-2021.
- PN-II-RU-TE-2011-4-2369 *Nano-Gap Arrays Fabricated on Large Areas as Plasmonic Platforms for Controlling Light Emission Processes*, 544.371 lei, 2015-2017. https://sites.google.com/site/glanceprojectubb/home
- UBB Advanced Fellowships Grant, financed through national competition by STAR-UBB, Universitatea Babes-Bolyai, 2017-2018.
- PN-II-CT-RO-FR-2014-2-0052 *Spectrally selective enhancement and directionality of spontaneous emission in anisotropic plasmo-photonic nanostructures*, bilateral cooperation project Romania-France, 21600 lei, 2015-2016.
- PN-II-RU-TE-2011-3-0134 *Development of Dual Electrical/Optical NanoSensors on Flexible Substrates by Colloidal Self-Assembly*, 900000 lei, 2011-2014. https://sites.google.com/site/farcaucosmin/research/deonos-project
- Grant for Young Researchers (GTC), Babes-Bolyai University, 4.526 EUR, 2013.
- CNCSIS TD 261/2007 *Preparation, characterisation and testing of periodic metallic nanostructures on solid substrate for applications in nanophotonics, bio-plasmonics and Raman scattering based molecular detection*.

SCIENTIFIC OUTPUT AND IMPACT

- **publications**: **98**: 85 articles in journals with IF, 1 book, 2 book chapters;
- **citations >2200; h-index = 27** (WoS);
- **journal covers**: *Analyst* 2023 Issue 17, *ACS Appl Mater Interfaces* 2013 Issue 4, *J Phys Chem C* 2011 Issue 30.
- **member of the Editorial Board**, *Discover Nano* journal, 2024 - .
- **member of the Topic Advisory Board**, *Nanomaterials* journal, 2020 - .
- **guest editor** of Special Issue on *Nanoscale Optical Sensing,* Nanomaterials journal, 2018-2019;
- **oral / invited conferences**

  ♦ *META conference*, Dublin (Ireland), 14-17 July 2026. ♦ *Molecular Plasmonics*, Jena (Germany), 15-17 May 2025. ♦ *International Conference on Surfaces, Coatings and Nanostructured Materials*, Barcelona (Spain), 8-11 July 2024. ♦ *International Conference on Physics of Advanced Materials*, Sharm-el-Sheik (Egypt), 19-26 November 2023. ♦ *International Conference of the Balkan Physical Union*, Belgrade (Serbia), 28 Aug - 1 Sep 2022. ♦ *Processes in Isotopes and Molecules,* Cluj-Napoca (Romania) 2019. ♦ *EMN Meeting on Photonics*, Budapest (Hungary), 4-8 Sep 2017. ♦ *EUCMOS 2012 – 31st European Congress on Molecular Spectroscopy*, Cluj-Napoca, 26-31 Aug 2012.

TEACHING ACTIVITIES

- *Optics* laboratory, Faculty of Physics, Babeș-Bolyai University, 1st Semester of 2014-2015.
- *Optotechnics and Optometry* course, Faculty of Physics, Babeș-Bolyai University, 2nd Semester of 2014-2015.
- Member in the committee for guiding doctoral students Cosmin Leordean, Vasile Sărăcuț, Cristian Țîra, Andra Tatar; Faculty of Physics, Babeș-Bolyai University, 2011-2019.

OTHER ACADEMIC ACTIVITIES

- Member of the *Scientific Council* of INCDTIM, 2022-2025.
- Member of the *Physics Commission* of the *National Council for Titles, Diplomas, and Certificates* (CNATDCU), 2020-2024.
- Referee in the thesis defense committee, PhD students Cosmin Leordean (UBB, 2014), Istvan Todor (UBB, 2019), Denisa Cuibus (UTCN, 2023).

PRIZES. SCHOLARSHIPS

- Scientific Excellence Award, Babeș-Bolyai University, 2019.
- 1st Prize, Premiile *Rada Mihalcea pentru Tineri Cercetători în Știință și Inginerie*, 2017.
- Scientific Research Scholarship for doctoral students BD - CNCSIS 2006 (*maximum score*)
- Performance Scholarship, Babeș-Bolyai University, 2004
- 1st Prize, National Physics Olympiad, 10th class, 1998.

Cluj-Napoca, Dr. Cosmin FARCĂU

28.09.2026