

PUBLICATION LIST:

PhD Thesis

- **Thesis title:** *Antibody-targeted plasmonic nanoparticles for potential theranostic applications in Acute Lymphoblastic Leukemia*, Doctoral School Physics, Babes-Bolyai University, Cluj-Napoca, Romania, June 2019

Publications

- **Tatar AS***, Brezestean IA*, Colnita A, Marconi D, Cozar BI, Barbu-Tudoran L, Dina NE, SERS Performance Evaluation of Periodic Nanostructured Platforms: from Fabrication to Practical Sensing, *ACS Applied Nano Materials*, (2026), **Q2**
- **Tatar AS***, Colnita A, Brezestean IA, Boca S*, Nano-based spectroscopic approaches for early diagnosis of Alzheimer's disease: critical insights into amyloid- β and tau biomarker biology and detection tools, *Biophysical Reviews*, 18(2026) 409-430, [*corresponding authors], **Q1**
- Falamas A*, **Tatar AS***, Boca S, Farcau C, Plasmonic Nanosensors for EGFR Detection: Optimizing Aptamer-Based Competitive Displacement Assays, *Biosensors-Basel* 15(10) (2025) 699, [*equal contributions], **Q1**
- Munteanu RA, Tigu AB, Feder R, **Tatar AS**, Gulei D, Tomuleasa C, Boca S, In vivo imaging system (IVIS) therapeutic assessment of tyrosine kinase inhibitor loaded gold nanocarriers for acute myeloid leukemia: A pilot study, *Front. Pharmacol.*, 15 (2024) **Q1**
- **Tatar AS**, Boca S, Falamas A, Cuibus D, Farcau C, Self-assembled PVP-gold nanostar films as plasmonic substrates for surface-enhanced spectroscopies: influence of the polymeric coating on the enhancement efficiency, *Analyst*, 148 (2023) 3992-4001, **Q2**
 - **Outside front cover image artwork** – *Analyst*, issue 17, 2023
- **Tatar AS**, Nagy-Simon T, Tigu AB, Tomuleasa C, Boca S, Optimization of Tyrosine Kinase Inhibitor-Loaded Gold Nanoparticles for Stimuli-Triggered Antileukemic Drug Release, *J Funct Biomater*, 14 (2023) 399, **Q2**
- Handrea-Dragan IM, Botiz I, **Tatar AS**, Boca S, Patterning at the micro/nano-scale: polymeric scaffolds for medical diagnostic and cell-surface interaction applications, *Colloid Surface B*, 218 (2022) 112730, **Q1**
- **Tatar AS**, Farcau C, Vulpoi A, Boca S, Astilean S, Development and evaluation of a gold nanourchin (GNU)-based sandwich architecture for SERS immunosensing in liquid, *Spectrochim. Acta A Mol. Biomol. Spectrosc.*, 273 (2022) 121069, **Q1**
- Safar W, **Tatar AS**, Leray A, Potara M, Liu Q, Edely M, Djaker N, Spadavecchia J, Fu W, Gam-Derouich S, Felidj N, Astilean S, Finot E, Lamy de la Chapelle M, New Insight on the Aptamer Conformation and Aptamer/protein Interaction by Surface Enhanced Raman Scattering and Multivariate Statistical Analysis, *Nanoscale*, 29 (2021) 12443-12453, **Q1**
- Borlan R*, **Tatar AS***, Soritau O, Maniu D, Marc G, Florea A, Focsan M, Astilean S, Design of Fluorophore Loaded Human Serum Albumin Nanoparticles for Specific Targeting of NIH:OVCAR3 Ovarian Cancer Cells, *Nanotechnology*, 31 (2020) 315102 [*equal contributions], **Q2**
- **Tatar AS**, Jurj A, Tomuleasa C, Florea A, Berindan-Neagoe I, Cialla-May D, Popp J, Astilean S, Boca S, CD19-targeted, Raman tagged gold nanourchins as theranostic agents against acute lymphoblastic leukemia, *Colloid Surface B*, 184 (2019) 110478, **Q1**
- Nagy-Simon T, **Tatar AS**, Craciun AM, Vulpoi A, Jurj MA, Florea A, Tomuleasa C, Berindan-Neagoe I, Astilean S, Boca S, Antibody Conjugated, Raman Tagged Hollow Gold-Silver Nanospheres for Specific Targeting and Multimodal Dark-Field/SERS/Two Photon-FLIM Imaging of CD19(+) B Lymphoblasts, *ACS Appl. Mater. Interfaces* 9, 25 (2017) 21155-21168, **Q1**
- **Tatar AS**, Nagy-Simon T, Tomuleasa C, Boca S, Astilean S, Nanomedicine approaches in acute lymphoblastic leukemia, *J. Controlled Release* 238 (2016) 123-138, **Q1**
- Ciceo Lucacel R, Radu T, **Tatar AS**, Lupan I, Ponta O, Simon V. 2014. The influence of local structure and surface morphology on the antibacterial activity of silver-containing calcium borosilicate glasses. *J Non-Cryst Solids* 404:98-103, **Q1**
- Chiriac C, **Tatar AS**, Radu C, Lupan I, Kelemen B. 2014. Techniques Used for the Diagnostic of Ancient Tuberculosis in Human Remains. *Studia UBB Biologia LIV* 1:114-126
- **Tatar AS**, Ponta A, Kelemen B. 2014. Bone Diagenesis and FTIR Indices: a Correlation. *Studia UBB Biologia LIV* 1:101-113
- **Tatar AS**. 2013. Early communication between plants and their symbiont nitrogen fixing bacteria a minireview. *ELBA Bioflux* 5:117-121
- **Tatar AS**, Chiriac C. 2013. An overview of the molecular communication between nitrogen fixing bacteria and Fabaceae in establishing the symbiosis. *Studii si cercetari, Biology* 18:81-90

Projects

- Project PN-III-P1-1_1-TE-2021-0234; **Project title:** *Gold nanourchin (GNU)-based SERS microfluidic immunosensor for the early detection of Alzheimer's Disease (AD) relevant biomarkers*, National Institute for Research & Development of Isotopic & Molecular Technologies (INCDTIM), Cluj-Napoca, Romania, (05/2022–09/2024)
- Project PN-III-P1-1.1-PD-2019-0387; **Project title:** Development of SERS-active, NIR-responsive urchin-like gold nanoagents (GNUs) for stimuli-triggered theranostic applications against hematological malignancies, Interdisciplinary Research Institute in Bio-Nano-Sciences (ICI-BNS), Babes-Bolyai University (UBB), Cluj-Napoca, Romania, (09/2020–10/2021)

Conference participation – oral presentations

International conferences:

- **Tatar AS***, Colnita A, Marconi D, Cozar BI, Barbu-Tudoran L, Dina NE, Brezestean IA*, Tunable SERS platforms based on Ag periodical nanopatterns: from fabrication protocols to practical biotoxin sensing, *International Conference on Functional Nanomaterials and Nanodevices (NANOMAT)*, July 2026, Brno, Czech Republic
- **Tatar AS**, Farcau C, Astilean S, Boca S, Plasmonic immunosensors based on gold nanourchins for biomarker detection, *6th International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-ANMBES)*, June 2022, Brasov, Romania
- **Tatar AS**, Tigu AB, Jurj A, Florea A, Nagy-Simon T, Vulpoi A, Berindan-Neagoe I, Astilean S, Tomuleasa C, Boca S, Nanoparticle formulations for specific targeting and selective inhibition of blood cancer cells, *12th International Conference on Clinical Spectroscopy (SPEC2022)*, June 2022, Dublin, Ireland
- Yasukuni R, Gillibert R, Triba MN, Safar W, Liu Q, Potara M, **Tatar AS**, Edely M, Leray A, Gucciardi P, Finot E, Astilean S, Lamy de la Chapelle M, Detection, identification and structural study of biomolecules by quantitative analysis of SERS spectra, *SFNano C'Nano*, December 2019, Dijon, France
- Yasukuni R, Gillibert R, Triba MN, Safar W, **Tatar AS**, Edely M, Leray A, Finot E, Astilean S, Lamy de la Chapelle M, Detection and identification of biomolecules by quantitative analysis of SERS spectra, *Sixth International Workshop on Advanced, Nano- and Biomaterials and Their Applications (6th NABM)*, May 2019, Cluj-Napoca, Romania
- **Tatar AS**, Jurj MA, Nagy-Simon T, Craciun AM, Berindan-Neagoe I, Florea A, Cialla-May D, Astilean S, Boca S, Novel theranostic agent against Acute Lymphoblastic Leukemia: CD19- targeting Gold Nanourchins, *2nd International Conference and Exhibition on Nanomedicine and Drug Delivery*, May 2018, Tokyo, Japan
- Nagy-Simon T, **Tatar AS**, Craciun AM, Vulpoi A, Jurj MA, Florea A, Tomuleasa C, Berindan-Neagoe I, Astilean S, Boca S, Hollow Gold-Silver Nanospheres for Specific Targeting and Multimodal Imaging of CD19(+) B Lymphoblasts, *European Conference on the Spectroscopy of Biological Molecules (ECSBM)*, September 2017, Amsterdam, Netherlands.

National conferences:

- **Tatar AS**, Ponta O, Kelemen B. Identificarea prin spectroscopie FT-IR a inhibitorilor PCR coextrasi din probe arheologice umane, Sesiunea Anuală de Comunicări Științifice, noiembrie 2014, Bistrița, România;
- **Tatar AS**, Kelemen B. Aplicații ale tehnicii FT-IR in bioarheologie, Sesiunea Anuală de Comunicări Științifice, noiembrie 2013, Bistrița, România;

Conference participation - posters

- **Tatar AS**, David M, Marconi D, Dina NE, Florescu M, Colnita A, Aptamer-Functionalized Au Nanotrenches Arrays for the Ultrasensitive Detection of Acetylcholine, *The 8th edition of International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-ANMBES 2026)*, June 2026, Brasov, Romania
- **Tatar AS**, Brezestean I, Marconi D, Colnita A, Boca S, Aptamer-conjugated gold nanourchins: promising microfluidic SERS-detection tools for early diagnosis of Alzheimer's Disease, *The 7th edition of International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-ANMBES 2024)*, September 2024, Brasov, Romania
- Brezestean I, Marconi D, Boca S, Colnita A, **Tatar AS***, Gold nanourchins for trace-level SERS detection of analytes, *The 7th edition of International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-ANMBES 2024)*, September 2024, Brasov, Romania
- **Tatar AS**, Boca S, Falamas A, Farcau C*, Competitive oligomer-protein-aptamer interaction for target quantification via SERS/SEF mechanism, *14th Processes in Isotopes and Molecules (PIM2023)*, September 2023, Cluj-Napoca, Cluj, Romania
- Brezestean I, Marconi D, Colnita A, **Tatar AS***, Boca S, Immuno-detection of cancer biomarker CEA-CAM5 using SERS-active gold nanourchins, *14th Processes in Isotopes and Molecules (PIM2023)*, September 2023, Cluj-Napoca, Cluj, Romania
- Colnita A, Marconi D, Brezestean I, Boca S, Barbu-Tudoran L, Dina NE*, **Tatar AS***, Fabrication and SERS performances of hierarchical heterogeneous arrays decorated with star-like gold nanoparticles, *14th Processes in Isotopes and Molecules (PIM2023)*, September 2023, Cluj-Napoca, Cluj, Romania
- Farcaș A, **Tatar AS**, Janosi L, Turcu I, Boca S*, Modulation of gold nanoparticle morphology for improved loading of therapeutic oligomers, *14th Processes in Isotopes and Molecules (PIM2023)*, September 2023, Cluj-Napoca, Cluj, Romania
- **Tatar AS**, Brezestean I, Marconi D, Colnita A, Boca S*, Gold nanourchin-based SERS microfluidic platform for immuno-detection of disease biomarkers, *17th SPIE Optics + Photonics Conference*, August 2023, San Diego, California, SUA
- **Tatar AS**, Marconi D, Farcau C, Vulpoi A, Boca S*, Rational design of star-like gold nanoparticles for enhanced detection of neurological biomarkers, *12th International Colloids Conference*, June 2023, Palma, Mallorca, Spain
- **Tatar AS**, Colnita A, Marconi D, Brezestean I, Barbu-Tudoran L, Boca S*, Microfluidic synthesis of gold nanourchins for functional hybrid nanosensors, *7th International Conference on Multifunctional, Hybrid and Nanomaterials (HYMA)*, October 2022, Genova, Italy
- **Tatar AS**, Boca S, Falamas A, Barbu-Tudoran L, Farcau C*, Self-assembled gold nanostar films as substrates for surface-enhanced optical spectroscopy, *The 6th edition of International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-ANMBES 2022)*, June 2022, Brasov, Romania
- **Tatar AS**, Baia M, Astilean S, Boca S*, Stimuli-Responsive Polymer-Coated Gold Nanourchins for Controlled Delivery of Dasatinib Hydrophobic Tyrosine Kinase Inhibitor, *NanoMed International Conference 2021*, October 2021, online

- **Tatar AS**, Farcau C, Astilean S, Boca S*, GNP-based sandwich immunosensor for SERS biomarker detection in liquid, *Processes in Isotopes and Molecules (PIM21)*, September 2021, online
- **Tatar AS**, Tigu AB, Jurj AM, Florea A, Nagy-Simon T, Vulpoi A, Neagoe-Berindan I, Astilean S, Tomuleasa C, Boca S*, Polymer-gold nanoparticle formulations for specific targeting of leukemic cells and delivery of tyrosine kinase inhibitor drugs, *Nanomed Europe 21*, September 2021, virtual event
- **Tatar AS**, Boca S, Farcau C, Astilean S*, Morphologically heterogeneous gold nanoparticle-based sandwich assay for SERS immuno-detection in liquid, *Elsevier Biosensors*, July 2021, online
- **Tatar AS**, Tigu AB, Jurj AM, Florea A, Nagy-Simon T, Neagoe-Berindan I, Astilean S, Tomuleasa C, Boca S*, Nanoparticulate Systems for Delivery of Tumor Inhibitors: New Strategies for Individualized Treatment of Leukemias, *Nanotextology*, July 2021, Thessaloniki, Greece
- **Tatar AS**, Tigu AB, Jurj A, Florea A, Nagy-Simon T, Berindan-Neagoe I, Astilean S, Boca S*, Tyrosine Kinase Inhibitor (TKI)-nanocarriers for precision medicine treatment of acute leukemias, *COST ACTION CA17140 Nano2Clinic*, June 2021, online
- **Tatar AS**, Astilean S, Boca S*, pH-Sensitive hybrid nanoparticles for the controlled release of Tyrosine Kinase Inhibitors, *NDDTE'21*, June 2021, online
- **Tatar AS**, Florea A, Nagy-Simon T, Tomuleasa C, Astilean S, Boca S*, Hybrid Nanoparticles for stimuli-triggered release of Tyrosine Kinase Inhibitors, *Nanotextology*, July 2020, Thessaloniki, Greece
- **Tatar AS**, Nagy-Simon T, Florea A, Vulpoi A, Jurj A, Tomuleasa C, Berindan-Neagoe I, Astilean S, Boca S*, Engineering gold nanoparticle morphology for optimised microspectroscopic imaging of blood cancer cells, *Nanotextology*, July 2020, Thessaloniki, Greece
- **Tatar AS**, Potara M, Suarasan S, Ghiman R, Soritau O, Fischer-Fodor E, Focsan M, Astilean S*, Near-Infrared Fluorophores-loaded Nanoparticles: encapsulation, stabilisation and targeting for Ovarian Cancer Cells, *ECSBM 18*, August 2019, Dublin, Ireland
- **Borlan RA**, **Tatar AS**, Maniu D, Soritau O, Fischer-Fodor E, Achimas-Cadariu P, Focsan M, Astilean S*, Indocyanine green-loaded protein nanoparticles for near infrared imaging and targeting of ovarian cancer cells, *ECSBM 18*, August 2019, Dublin, Ireland
- **Tatar AS**, Nagy-Simon T, Craciun AM, Jurj MA, Berindan-Neagoe I, Astilean S*, Boca S*, Specific detection and imaging of Acute Lymphoblastic Leukemia cells using multimodal Gold Nanourchins, *FIRST COST ACTION CA17140 Training School, University of Trieste*, April 2019, Trieste, Italy
- **Tatar AS**, Nagy-Simon T, Craciun AM, Vulpoi A, Jurj MA, Florea A, Tomuleasa C, Berindan-Neagoe I, Astilean S, Boca S*, Immunotargeted, NIR-responsive gold nanoparticles as integrated diagnostic and therapeutic agents against acute lymphoblastic leukemia, *7th International Colloids Conference*, June 2017, Sitges, Spain,
- **Tatar AS**, Nagy-Simon T, Jurj MA, Berindan-Neagoe I, Tomuleasa C, Cialla-May D, Astilean S*, Boca S*, Anti-CD19 Gold Nanostars as New Therapeutic Vectors for the Treatment of Acute Lymphoblastic Leukemia, *2nd World Congress on Recent Advances in Nanotechnology (RAN'17)*, *2nd International Conference on Nanomedicine, Drug Delivery, and Tissue Engineering (NDDTE'17)*, April 2017, Barcelona, Spain
- Boca S, **Tatar AS**, Nagy-Simon T, Tomuleasa C, Astilean S*, Spectroscopic active, antibody- conjugated gold nanoparticles for acute lymphoblastic leukemia detection and treatment, *SPIE Optics + Photonics*, August 2016, San Diego, California, SUA
- **Tatar AS**, Nagy-Simon T, Boca S, Astilean S*, Fabrication and conjugation of Au nanostars with Raman reporters for application in imaging and detection by SERS, *Raman4Clinics Summer School*, May 2016, Jena, Germany
- **Tatar AS**, Ponta O, Kelemen B*, A correlation between physical analytical methods and the rate of DNA extraction from ancient human remains, *Winter Biology Students in Europe Conference*, February 2014, Serbia

