

Europass Curriculum Vitae			
Personal information			
First name / Surname	Nicoleta-IoanaTOSA (maiden name ARDELEAN)		
Address	13 Closca, 407280 Floresti, Cluj, Romania		
Telephone	Office - +40-264-584037/173 Home - +40-264-265450	Mobile:	+40-745379293
Fax	+40-264-420042		
E-mail	nicoleta.tosa@itim-cj.ro		
Nationality	Romanian		
Date of birth	November 15. 1967		
Gender	Female		
Work experience			
Dates	01.07.2015 – present		
Occupation or position held	Chemist, Scientific Researcher II		
Main activities and responsibilities	Metallic micro- and nanostructures/metamaterials fabrication by CW/pulsed laser direct writing (LDW) and characterization, optical microscopy for micron and sub- micron level investigations, photochemical synthesis of noble metal nanoparticles, functionalization and characterization (UV-Vis-NIR, FTIR, Raman, SERS, fluorescence, mass-spectrometry), plasmonics; Time resolved spectroscopy; Optical Coherent Tomography (OCT) investigations, OCT phantoms for material and medical applications		
Name and address of employer	National Institute for Research and Development of Isotopic and Molecular Technologies, INCDTIM, 67-103 Donat Str., RO-400293 Cluj-Napoca 5, Romania, http://en.itim-cj.ro/research/departments/molecular-and-biomolecular-physics/		
Dates	01.10.2011 – 30.06.2015		
Occupation or position held	Chemist, Scientific Researcher III		
Main activities and responsibilities	Photochemical synthesis of metallic nanoparticles, S-functionalization and optical spectroscopy characterization; Preparation, spectroscopically and electrochemical characterization of self-assembled monolayer on gold (111) flat surfaces/gold nanoparticles; Optical microscopy, plasmonics and laser lithography;		
Name and address of employer	National Institute for Research and Development of Isotopic and Molecular Technologies, INCDTIM, 67-103 Donat Str., RO-400293 Cluj-Napoca 5, Romania, http://www.itim-cj.ro/en/departament-molecular-and-biomolecular-physics		
Type of business or sector	Molecular and Biomolecular Physics Department		
Dates	15.11.2007 – 30.09.2011		
Occupation or position held	Chemist, Scientific Researcher		
Main activities and responsibilities	Preparation of self-assembled monolayer on gold (111) flat surfaces and characterization by UV-Vis, FTIR, cyclic voltammetry; ion-selective complexing based on macrocyclic compounds; Intra- and intermolecular hydrogen bonding evidenced by structural analysis		
Name and address of employer	National Institute for Research and Development of Isotopic and Molecular Technologies, INCDTIM, 67-103 Donat Str., RO-400293 Cluj-Napoca, Romania.		
Type of business or sector	Molecular and Biomolecular Physics Department		
Dates	06.09.2006- 14.11.2007		
Occupation or position held	Chemist, Scientific Researcher Part time position		
Main activities and responsibilities	Vacuum vapor deposition and thermal treatment of gold (111) thin films on mica; Structural analysis of organic precursors for self-assembled monolayer		

Name and address of employer	National Institute for Research and Development of Isotopic and Molecular Technologies, INCDTIM, 67-103 Donat Str., RO-400293 Cluj-Napoca, Romania.
Type of business or sector	Molecular and Biomolecular Physics Laboratory
Dates	01.10.2002-14.11.2007
Occupation or position held	Full time Ph.D. Student
Main activities and responsibilities	Organic chemistry synthesis, thin layer and flash chromatography, compounds characterization by solid and liquid-phase structural analysis; Teaching and supervising the undergraduate/master students research activity
Name and address of employer	"Babes-Bolyai" University Cluj-Napoca, Faculty of Chemistry and Chemical Engineering, 11 Arany Janos, 400028, Cluj-Napoca, Romania http://chem.ubbcluj.ro/~organica
Type of business or sector	Organic Chemistry Department
Dates	01.09.1995-30.09.2002
Occupation or position held	Chemistry and Physics teacher
Main activities and responsibilities	Teaching and experimental activities, scientific scholar contests: training and management
Name and address of employer	"Energetic" Technical College and "Constantin Brancusi" School, Cluj-Napoca, Romania
Education and training	
Dates	2002-2009
Title of qualification awarded	PhD in Chemistry (Organic and Photochemistry)
Principal subjects	Bicyclic Compounds Synthesis and Structural Analysis; Laser Direct Metallic Nano/microfabrication
Name and type of organisation providing education and training	"Babes-Bolyai" University, Cluj-Napoca, Romania, Faculty of Chemistry and Chemical Engineering, Organic Chemistry Department
Dates	1989-1994; 1994-1995
Title of qualification awarded	Bachelor in Physical-Chemistry; Master in Advanced Heterocyclic Chemistry
Principal subjects	Phenothiazine derivatives; Substitution reactions
Name and type of organisation providing education and training	"Babes-Bolyai" University, Cluj-Napoca, Romania, Faculty of Chemistry and Chemical Engineering, Organic Chemistry Department
Courses and training	
Dates	24.02.2025-07.03.2025
Name and place	Winter College on Optics: "Theoretical and Applied Aspects of Metamaterials and Metasurfaces", ICTP, Trieste, Italy https://indico.ictp.it/event/10823/
Dates	16.05.2022-19.05.2022
Name and place	Winter College on Optics: "Theory and Applications on LIDAR", ICTP, Trieste, Italy (Virtual meeting) https://indico.ictp.it/event/9790/
Dates	10.02.2020-21.02.2020
Name and place	Winter College on Optics: "Quantum Photonics and Information", ICTP, Trieste, Italy http://indico.ictp.it/event/9021/
Dates	19.02.2019-21.02.2019
Name and place	"Time-resolved Microscopy and Correlation Spectroscopy" Pico-Quant Company Berlin, Germany https://www.picoquant.com/events/details/microscopy-course
Dates	13.02.2017-24.02.2017
Name and place	Winter College on Optics: "Advanced Optical Techniques for Bio-imaging" Trieste, Italy http://indico.ictp.it/event/7920/
Dates	07.11.2016-10.11.2016

Name and place	"Principles and Applications of Time-resolved Fluorescence Spectroscopy " , Max Born Institute and Pico-Quant Company Berlin, Germany https://www.picoquant.com/events/details/fluorescence-course-2016
Dates	15.02.2016-26.02.2016
Name and place	Winter College on Optics: "Optical Frequency Combs - from multispecies gas sensing to high precision interrogation of atomic and molecular targets" Trieste, Italy http://indico.ictp.it/event/7593/
Dates	09.08.2015-14.08.2015
Name and place	8 th International Summer School: "New Frontiers in Optical Technologies" Tampere, Finland http://www.tut.fi/summerschool/
Dates	02.02.2015-20.02.2015
Name and place	Winter College on Optics: "Light: a Bridge between Earth and Space" Trieste, Italy http://indico.ictp.it/event/a14287
Dates	06.02.2012-17.02.2012
Name and place	Winter College on Optics: "Advances in Nano-Optics and Plasmonics" Trieste, Italy http://indico.ictp.it/event/a11152
Dates	11.11.2010-12.11.2010
Name and place	"Microfabrication Processes " at IMT Bucharest, Romania http://www.fsrm.ch/doc/c55.php?lang=e
Dates	30.09.2010
Name and place	"Automotive- National Instruments" Timisoara, Romania, http://www.ni.com/automotivesymposium/ro/
Dates	15.07.2007-20.07.2007
Name and place	Transylvanian Summer School and International Workshop on Complex Systems and Networks , Sovata, Romania, http://www.summerschools.ro
Stages and teaching activities	
Dates	24.02.2025-07.03.2025
Name of host institution	International Center of Theoretical Physics ICTP , Trieste, Italy, Winter College on Optics: "Theoretical and Applied Aspects of Metamaterials and Metasurfaces" , https://indico.ictp.it/event/10823/material/7/
Main activities and responsibilities	Tutor in hands-on activities: experimental sessions in spectrophotometry on structures of metamaterial type obtained by laser-assisted direct writing
Dates	03.02.2020-07.02.2020
Name of host institution	International Center of Theoretical Physics ICTP , Trieste, Italy, Preparatory School on Optics: "Quantum Photonics and Information" , http://indico.ictp.it/event/9020/
Main activities and responsibilities	Lecturer and laboratory: experimental sessions in quantum optics
Dates	13.02.2017-24.02.2017
Name of host institution	International Center of Theoretical Physics ICTP , Trieste, Italy, Winter College on Optics: "Advanced Optical Techniques for Bio-imaging" http://indico.ictp.it/event/7920/other-view?view=ictp timetable
Main activities and responsibilities	Director (project proposal elaboration, evaluation of the applications and activities' coordination) Lecturer: Teaching activities devoted to optical lithography course(1h30min) and experimental sessions in advanced optical spectroscopy techniques
Dates	05.09.2012-07.09.2012; 03.12.2013—06.12.2013
Name of host institution	National Institute of R&D for Laser, Plasma and Radiation Physics , Magurele, Romania
Main activities and responsibilities	Research Stages in Microfabrication, as principal investigator, in collaboration with Dr. Marian Zamfirescu

Dates	01.02.2007 – 30.04. 2007											
Name of host institution	“ Joseph Fourier ” University , Grenoble I, France, Laboratoire de Spectrométrie Physique (current Laboratoire Interdisciplinaire de Physique LiPhy) (UMR 5588), MOTIV Group, https://liphys.univ-grenoble-alpes.fr/fr											
Main activities and responsibilities	EGIDE Scholar research stage - PhD student level; TPA metallic micro- and nanostructures fabrication by laser direct writing, SEM and optical microscopy & spectroscopy characterization											
Dates	01.11.2005 – 31.08. 2006											
Name of host institution	“ Joseph Fourier ” University , Grenoble I, France, Laboratoire de Spectrometrie Physique (current Laboratoire Interdisciplinaire de Physique LiPhy) (UMR 5588), MOTIV Group https://liphys.univ-grenoble-alpes.fr/fr											
Main activities and responsibilities	EGIDE Scholar research stage - PhD student level; plasmonics, metallic fabrication by laser induced photochemistry, SEM and optical microscopy characterization; optical spectroscopic characterization											
Dates	01.11.2005 – 31.08. 2006											
Name of host institution	“ Joseph Fourier ” University , Grenoble I, France, Laboratoire de Spectrometrie Physique (current Laboratoire Interdisciplinaire de Physique LiPhy) (UMR 5588), MOTIV Group https://liphys.univ-grenoble-alpes.fr/fr											
Main activities and responsibilities	ERASMUS Scholar - PhD student level; plasmonics, metallic fabrication by laser induced photochemistry, SEM and optical microscopy characterization.											
Personal skills and competences												
Mother tongue	Romanian											
Other language	1. English; 2. German; 3. French; 4. Russian											
Self-assessment		Understanding				Speaking				Writing		
<i>European level (*)</i>		Listening		Reading		Spoken interaction		Spoken production				
Language 1	C1	Competent User		C1	Competent User		C1	Competent User		C1	Competent User	
Language 2	B2	Independent User		B1	Independent User		B1	Independent User		B1	Independent User	
Language 3	B1	Independent User		B1	Independent User		B1	Independent User		B1	Independent User	
Language 4	A1	Basic User		A2	Basic User		A1	Basic User		A1	Basic User	
Computer skills and competences	Windows, Office, Origin, MestreNova, ChemDraw, CellSense, SpectraSuit, ThorImage. good typing skills											
Technical skills and competences	Ability to carry out independent and team research work, to teach and coordinate the research work carried out by undergraduate, master & PhD students or member of the team											
Social skills and competences	Good worker and team integration,											
Other skills and competences	Mathematics, Sport, Music, Dance, Outdoor activities, Traveling											
Driving licence	Type B											

Additional information	ResearcherID: A-1767-2016; ORCID: 0000-0002-4097-0656; citations number: 301 (WoS); Hirsch index: 10 (WoS); 51 publications (43 ISI, 7 non-ISI, 1 book chapter), and 85 international conference participations (45 posters, 28 oral presentations, 1 invited lecture, 1 plenary lecture); 4 national patents; participant in 15 national and 2 international projects; Partner team leader in 2 national projects: PN-II-PT-PCCA-2013-4-1374 / Project 237/2014 "Optical Nanofabrication in the domain 5 nm - 50 nm" 2014-2017 and PN-II-PT-PCCA-2011-3.2-0210/ Project 169/2012 "1 Petabyte Optical Disc" 2012-2016. NANOPROSPECT databases Awarded by CNCSIS for papers & patents: "H-Bond-Driven Supramolecular Architectures of the Syn and Anti Isomers of the Dioxime of Bicyclo[3.3.1]nonane-3,7-dione", J. Org. Chem. 2009, 74, 3944-3947, IF :3.952/2009; "Spectroscopic investigation of tolmetin interaction with human serum albumin", J. Pharm. Biomed. Anal. 2013, 85, 277-282. IF 2.829; "2 nm Quantum Optical Lithography", Opt. Comm. 2013, 291, 259-263. IF 1.542; "Temperature dynamics of laser irradiated gold nanoparticles embedded in a polymer matrix", Thermochimica Acta 2017, 656, 25-31. IF 2.189; "Graphene/silver nanoparticles-based surface-enhanced Raman spectroscopy detection platforms: Application in the study of DNA molecules at low pH", Journal of Raman Spectroscopy 2019, 50 (12), 1849-1860. IF 2.809; C.D. Tudoran, M.C. Tudoran, V. Surducu, E. Surducu, D. Dadărlat, N.I. Toşa, Reactor cu plasmă rece pentru obținerea biodiselului (Cold plasma reactor for preparing biodiesel fuel), Patent RO131043B1, 29.04.2021. Gold medal at Inventica 2024, Iasi, RO and InnoCENTA 2024, Timisoara, RO, silver medal at Euroinvent, 2025, Iasi, RO for N.I. Tosa, A. Falamas, S.-C. Tripon, D.C. Cuibus, C.-A. Farcau, R. Moldovan, B.-C. Iacob, E. Bodoki, K. Milenko-Kuszevska, E. Vereshchagina, "Electrodepunere directionata de micro/ nanostructuri plasmonice de tip emisfere negative interconectate în retea pe electrozi de aur pentru aplicatii (EC-)SERS" ("Template-directed electrodeposition of plasmonic micro/nanostructured interconnected hemisphere-voids lattice on gold electrodes for (EC-)SERS applications") Patent application: a 2024 00225, 29.04.2024; published as: RO138633A0, 28.02.2025.
Annexe	1. List of published papers. 2. List of projects participation.

Annexe 1: List of papers (selected):

1. **N. Tosa**, N.E.Dina, B.I. Cozar, A. Coste, A. Halmagyi, M. Parvu, C.M. Muntean, "Structural Characterization of DNA from *Allium* Leaves and *E. coli* by Surface-Enhanced Raman Spectroscopy (SERS)", *Analytical Letters* 2025, 58(14), 2533-2550. **IF 1.8** <https://doi.org/10.1080/00032719.2024.2420343>
2. A. Falamas, I. A. Brezestean, **N. Tosa**, S. Boca, C. Farcau, "A simple, rapid, and low-cost approach for colloidal nanoparticle-based surface enhanced Raman Scattering detection of endosulfan pesticide at trace levels", *Nano Express* 2024, 5(4), 045006, 1-12. **IF 2.7** DOI: [10.1088/2632-959X/ad858f](https://doi.org/10.1088/2632-959X/ad858f)
3. V. P. Tosa, A. Ilie-Ene, S.- C. Tripon, A. Mesaros, R. Fechete, **N. Tosa**, A. Csapai, G. C. Dindelegan, C. O. Popa, "Electrospun Polymeric Fiber Systems Inoculated with Cyanoacrylate Tissue Adhesive: A Novel Hemostatic Alternative during Open Surgery", *Materials* 2024, 17(17): 4318, 1-13. **IF 5.0** DOI: [10.3390/ma17174318](https://doi.org/10.3390/ma17174318)
4. C. M. Muntean, D. Cuibus, S. Boca, A. Falamas, **N. Tosa**, I. A. Brezestean, A. Bende, L. Barbu-Tudoran, R. Moldovan, E. Bodoki, C. Farcau, "Gold vs. Silver Colloidal Nanoparticle Films for Optimized SERS Detection of Propranolol and Electrochemical-SERS Analyses", *Biosensors* 2023, 13(5), 530, 1-17. **IF 5.0** <https://doi.org/10.3390/bios13050530>
5. A. Falamas, D. Cuibus, **N. Tosa**, I. Brezestean, C. M. Muntean, K. Milenko, E. Vereshchagina, R. Moldovan, E. Bodoki, C. Farcau, "Toward microfluidic SERS and EC-SERS applications via tunable gold films over nanospheres", *Discover Nano (Nanoscale Research Letters)* 2023, 18(73), 1-14. **IF 5.5** <https://doi.org/10.1186/s11671-023-03851-3>
6. E. Dinte, R. I. Iovanov, A. E. Bodoki, I. A. Colosi, H. A. Colosi, **N. Tosa**, O. Vostinaru, I. Tomuta, "Optimization of a Mucoadhesive Vaginal Gel Containing Clotrimazole Using a D-Optimal Experimental Design and Multivariate Analysis", *Polymers* 2023; 15(9), 2023, 1-21. **IF 5.0** <https://doi.org/10.3390/polym15092023>
7. O. Grad, M. Dan, L. Barbu-Tudoran, **N. Tosa**, M. D. Lazar, G. Blanita, "MOF/Al₂O₃ composites obtained by immobilization of MIL-53(Cr) or MIL-101(Cr) on γ-alumina: Preparation and characterization", *Microporous and Mesoporous Materials* 2023, 353, 112518, **IF 5.2** <https://doi.org/10.1016/j.micromeso.2023.112518>
8. A. Csapai, D. A. Toc, V. Pascalau, **N. Tosa**, S. Tripon, A. Cioră, R. M. Mihaila, B. Mociran, C. Costache, C. Popa, "Study of the Influence of the Dielectrophoretic Force on the Preferential Growth of Bacterial Biofilms in 3D Printed Microfluidic Devices", *Applied Sciences* 2023; 13(1), 60, 1-13. **IF 2.7**. <https://doi.org/10.3390/app13010060>
9. D. A. Toc, A. Csapai, F. Popa, C. Popa, V. Pascalau, **N. Tosa**, A. Botan, R. M. Mihaila, C.A. Costache, I. A. Colosi, L. M. Junie, "Easy and Affordable: A New Method for the Studying of Bacterial Biofilm Formation", *Cells* 2022; 11(24):4119, 1-15. **IF 6.0** <https://doi.org/10.3390/cells11244119>
10. A. Csapai, D. A. Toc, F. Popa, **N. Tosa**, V. Pascalau, C. Costache, A. Botan, C. O. Popa, "3D Printed Microfluidic Bioreactors Used for the Preferential Growth of Bacterial Biofilms through Dielectrophoresis", *Micromachines* 2022, 13(9), 1377, 1-15. **IF 3.4** <https://doi.org/10.3390/mi13091377>

11. I. A. Brezestean, **N. Tosa**, A. Falamas, D. Cuibus, C. M. Muntean, A. Bende, B. Cozar, C. Berghian-Grosan, C. Farcău, "Silver Nanoparticle Films Obtained by Convective Self-Assembly for Surface-Enhanced Raman Spectroscopy Analyses of the Pesticides Thiabendazole and Endosulfan", *Frontiers in Chemistry* 2022, 10, 10:915337, 1-14. **IF 5.5**
<https://doi.org/10.3389/fchem.2022.915337>
12. R. Moldovan, E. Vereshchagina, K. Milenko, B.-C. Iacob, A. E. Bodoki, A. Falamas, **N. Tosa**, C. M. Muntean, C. Farcău, E. Bodoki, "Review on combining surface-enhanced Raman spectroscopy and electrochemistry for analytical applications", *Analytica Chimica Acta*, 2022, 1209, 339250, 1-25. **IF 6.2**
13. C. M. Muntean, N. E. Dina, M. Coroş, **N. Toşa**, A. I. Turza and M. Dan, "Graphene/silver nanoparticles-based surface-enhanced Raman spectroscopy detection platforms: Application in the study of DNA molecules at low pH", *Journal of Raman Spectroscopy* 2019, 50 (12), 1849-1860. **IF 2.809**
14. C. M. Muntean, T.-L. Biter, I. Bratu, **N. Toşa** "Metallic surface dynamics of genomic DNA and its nitrogenous bases: SERS assessment and theoretical considerations", *Journal of Molecular Modeling* 2019, 25 (6): 162, 1-8. **IF 1.507**
15. A. M. M. Gherman, **N. Tosa**, M. V. Cristea, V. Tosa, S. Porav, P. S. Agachi, „Artificial neural networks modeling of the parameterized gold nanoparticles generation through photo-induced process", *Materials Research Express* 2018, 5(8), 085011, 1-13. **IF 1.449**
16. A. M. M. Gherman, **N. Tosa**, D. N. Dadarlat, V. Tosa, M. V. Cristea, P. S. Agachi, „Temperature dynamics of laser irradiated gold nanoparticles embedded in a polymer matrix", *Thermochimica Acta* 2017, 656, 25-31. **IF 2.189**
17. A. Falamas, **N. Tosa**, V. Tosa, "Measuring the frequency chirp of white-light continuum in a pump-probe system", *Journal of Optoelectronics and Advanced Materials* 2017, 5-6, 291-297. **IF 0.39**
18. E. Pavel, S. Jinga, B. S. Vasile, A. Dinescu, R. Trusca, **N. Tosa**, „3D direct laser writing of Petabyte Optical Disk", *Optics and Laser Technology* 2015, 71, 45-49. **IF 1.649**
19. A. Falamas, **N. Tosa**, V. Tosa, "Dynamics of laser excited colloidal gold nanoparticles functionalized with cysteine derivatives" *Journal of Quantitative Spectroscopy and Radiative Transfer* 2015, 162, 207-212. **IF 2.600**
20. E. Pavel, S. Jinga, B. S. Vasile, A. Dinescu, V. Marinescu, R. Trusca, **N. Tosa**, „Quantum Optical Lithography from 1 nm resolution to pattern transfer on silicon wafer", *Optics and Laser Technology* 2014, 60, 80-84. **IF 1.649**
21. E. Pavel, S. Jinga, E. Andronescu, B.S. Vasile, G. Kada, A. Sasahara, **N. Tosa**, A. Matei, M. Dinescu, A. Dinescu, O.R. Vasile, "2 nm Quantum Optical Lithography", *Optics Communication* 2013, 291, 259-263. **IF 1.542**
22. S. Neamtu, **N. Tosa**, M. Bogdan, "Spectroscopic investigation of tolmetin interaction with human serum albumin", *J. Pharmaceutical and Biomedical Analysis* 2013, 85, 277-282. **IF 2.829**
23. L. Buimaga-larinca, C. Morari, **N. Tosa**, "Adsorption of cysteine on gold (111) surfaces: a DFT study", *European Biophysics Journal with Biophysics Letters* 2011, 40, 103-103. **IF 2.139**
24. C. Varodi, **N. Tosa**, E. Bogdan, I. Grosu, L. M. Muresan, I. Turcu, „Novel Carbon Paste Selective Material for Potassium Detection", *Optoelectronics and Advanced Materials - Rapid Communications* 2010, 4(11), 1724-1727. **IF 0.477**
25. **N. Tosa**, A. Bende, R. A. Varga, A. Terec, I. Bratu, I. Grosu, „H-Bond-Driven Supramolecular Architectures of the Syn and Anti Isomers of the Dioxime of Bicyclo[3.3.1]nonane-3,7-dione", *Journal of Organic Chemistry* 2009, 74, 3944-3947. **IF 3.952**
26. **N. Tosa**, G. Vitrant, P. L. Baldeck, O. Stephan, I. Grosu, "Fabrication of 3D Metallic Micro/nanostructures by Two-Photon Absorption", *Journal of Optoelectronics and Advanced Materials* 2008, 10(9), 2199-2204. **IF 0.577**
27. **N. Tosa**, G. Vitrant, P. L. Baldeck, O. Stephan, S. Astilean, I. Grosu, "Two-photon laser deposition of gold nanowires", *Journal of Optoelectronics and Advanced Materials* 2007, 9(3), 641-645. **IF 0.827**
28. J. Bosson-Ehmann, A. Mihut, **N. Tosa**, S. Astilean, M. Pierre, C. Rambaud, L. Vurth, P. Baldeck, O. Stephan, "Two -Photon Fabrication of Metallic Nanowires for Plasmonics ", *Nonlinear Optics, Quantum Optics* 2006, 35(1-3),195-200. **IF 0.478**
29. F. Toadere, **N. Tosa**, M. E. Badea, A. Miron, V. Cebotari, R. Chifor, "Improvement of the in vitro pig mandible images quality recorded by an OCT handheld in 1200-1400 nm infrared domain: A preliminary study", Vlad S., Roman N.M. (eds) 7th International Conference on Advancements of Medicine and Health Care through Technology. MEDITECH 2020. IFMBE Proceedings, Springer, Cham., vol 88., 143-150 (2022) https://doi.org/10.1007/978-3-030-93564-1_16
30. F. Toadere, **N. Tosa**, A. S. Porav, „Quality Enhancement of the SEM Images", *IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR)*, Cluj-Napoca, Romania, 2022, 1-4
31. **N. Tosa**, F. Toadere, "Enhancement of the optical polarization effect on the SPR response in gold micro/nanoparticles imaging", *Proc. SPIE, Advanced Topics in Optoelectronics, Microelectronics and Nanotechnologies X*; 2020, 11718, 117181Y, 1-5.
32. F. Toadere, **N. Tosa**, „Enhancement of the raw OCT image quality", *AIP Conf. Proceedings* 2020, 2206, 040002, 1-4.
33. **N. Tosa**, F. Toadere, „Investigation of optical properties of periodically arranged gold nanostructured patterns in transparent polymer films", *Proc. SPIE, Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies IX*, 2018, 10977, 109770O, 1-4;
34. F. Toadere, **N. Tosa** „Noise removal from raw OCT images achieved using an OCT system operating in the bandwidth 827 nm-873 nm", *Proc. SPIE, Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies IX*, 2018, 10977, 109770N, 1-4;
35. P. Farago, r. Galatus, C. Farcas, G. Oltean, **N. Tosa**, „Low-cost Quasi-distributed Position Sensing Platform based on Blue Fluorescent Optical Fiber", *IEEE 23rd International Symposium for Design and Technology in Electronic Packaging (Siitme)* 2017, 328-331.
36. C. D. Tudoran, D. N. Dadarlat, **N. Tosa**, I. Misan, „High Performance Protection Circuit for Power Electronics Applications", *AIP Conf. Proceedings* 2015, 1700, 050007 1-5.
37. **N. Tosa**, F. Toadere, C. Hojbota, V.Tosa, "Laser-induced metallic nanograin thin films processing" *AIP Conf. Proceedings* 2013, 1565, 179-184. ISSN 1551-7616
38. F. Toadere, **N. Tosa** "Spectral characterization of the Rhodamine 6G thin films effect on the color image" *AIP Conf. Proceedings* 2013, 1565, 263-268. ISSN 1551-7616

39. F. Toadere, **N. Tosa**, "Functioning of the Protective UV Filters Based on Gold Nanoparticles", AIP: Conf. Proceedings 2012, 1425, 93-97. ISSN 1551-7616 <http://dx.doi.org/10.1063/1.3681975>.
40. **N. Tosa**, Z. Moldovan, I. Bratu, "Simultaneous Determination of Some Artificial Sweeteners in Ternary Formulations by FT-IR and EI-MS", AIP: Conf. Proceedings 2012, 1425, 98-101. ISSN 1551-7616 <http://dx.doi.org/10.1063/1.3681976>.
41. L. Buimaga-larinca, **N. Tosa**, "DFT study of cysteine adsorption on gold defect surfaces", AIP: Conf. Proceedings 2012, 1425, 22-25. ISSN 1551-7616 <http://dx.doi.org/10.1063/1.3681957>.
42. **N. Tosa**, L. Olenic, I. Bratu, R. Turdeanu, I. Turcu, "Infrared and UV-Vis Spectroscopic Study of 3,7,10-Substituted-Phenothiazine Derivatives Adsorbed on Gold Nanoparticles", J. Phys.: Conf. Ser. 2009, 182, 012019, 1-5. ISSN 1742-6596. <http://doi.org/10.1088/1742-6596/182/1/012019>.
43. G. Vitrant, J. Bosson, **N. Tosa**, T. Rosenzweig, O. Stephan, S. Astilean, P.L. Baldeck, "Observation of optical dispersion effects in metallic nanostructures fabricated by laser illumination of an organic polymer matrix doped with metallic salts" Proc. of SPIE, Organic Photonic Materials and Devices IX, 2007, 6470, 64700O, 1-6. ISSN 0277-786x. <https://doi.org/10.1117/12.705881>
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2. C.D. Tudoran, M.V. Stefan, **N.I. Toşa**, I.O. Pană, G.S. Macavei, "Instalație automată pentru purificarea avansată a apei potabile cu nanoparticule magnetice și plasmă rece" ("Automatic installation for advanced purification of drinking water with magnetic nanoparticles and cold plasma") Patent RO131867B1, 30.12.2024
3. C. M. Varodi, C.D. Tudoran, M. Coros, **N. I. Tosa**, R. C. Suciu, "Reactor pentru obținerea rapidă a grafenelor prin exfolierea electrochimică în plasmă a grafitului" Patent pending: RO-A00441 (A/00441/2023), 05.10.2023
4. **N.I. Tosa**, A. Falamas, S.-C. Tripon, D.C. Cuiubus, C.-A. Farcau, R. Moldovan, B.-C. Iacob, E. Bodoki, K. Milenko-Kuszevska, E. Vereshchagina, "Electrodepozare direcționată de micro/ nanostructuri plasmonice de tip emisfere negative interconectate în rețea pe electrozi de aur pentru aplicații (EC-)SERS" ("Template-directed electrodeposition of plasmonic micro/nanostructured interconnected hemisphere-voids lattice on gold electrodes for (EC-)SERS applications") Patent application: RO-A00225 (a 2024 00225), 29.04.2024; Published as: [RO138633A0](https://doi.org/10.1088/1742-6596/182/1/012019), 28.02.2025

Annexe 2: List of projects participation:

Crt. No.	Programm / Project	Responsability	Period
1	PN-III-P4-ID-PCE-2020-1607 / Project PCE162 / 2021 "Active tuning of plasmon resonances in gold nanoparticle arrays on elastomeric substrates for ultrasensitive dual MEF/SERS biosensing (OPTIGAP)"	Team member	2022-2024
2	H2020-EU.1.2.1/ "eXtreme ultraviolet to soft-X-ray Photonic Integrated Circuits" (x-Pic) https://www.x-pic.eu/	Team member	2021-2025
3	NO Grant – Collaborative Research Projects RO-NO-2019-0517/ Project 32/2020 / "Nanostructured microfluidic analytical platform for dual SERS-electrochemical detection of emerging environmental pollutants" (Polsens)	Team member	2020-2023
4	PN-III-P2-2.1-PED-2019-5473/ Project 477PED/2020/ Nanostructured plasmonic platform for dual electrochemical/SERS detection of environmentally persistent pharmaceutical pollutants (PharmExER)	Team member	2020-2022
5	PN-III-P1-1.2-PCCDI-2017-0010 / Project 74PCCDI /2018 "Emerging molecular technologies based on micro and nanostructured systems with biomedical applications (TehnoBioMed)" http://www.itim-cj.ro/PNCDI/tehnobiomed/	Component Project P3 -Activities coordinator & Team member	2018-2021
6	PN-III-P4-ID-PCE-2016-0208 / Project 64/2017 "Design of some spin-crossover supramolecular structures controlled by ultrashort laser pulses"	Team member	2017-2019
7	PN-II-PT-PCCA-2013-4-1374 / Project 237/2014 Optical Nanofabrication in the domain 5 nm - 50 nm"	Partner Team Leader	2014-2017
8	PN-II-ID-PCE-2012-4-0342 / Project 31/2013 "Single Attosecond Pulse Generation by Femtosecond waveforms"	Team member	2013-2016
9	PN-II-ID-PCE-2012-4-0115/ Project 54/2013 "Structural Changes and (Sub)Picoseconds Dynamics in DNA Molecules Probed with Ultrasensitive Raman Spectroscopy Techniques"	Team member	2013-2016
10	PN-II-PT-PCCA-2011-3.2-0210/ Project 169/2012 "1 Petabyte Optical Disc"	Partner Team Leader	2012-2016
11	Capacities/ 2 PM/I/07.10.2008 „Molecular and Biomolecular Physics Department Upgrading (MDFMOLBIO)"	Team member	2010-2012

12	Core Program/ PN 09-44 02 04 "Investigation of Molecular Recognition and Self-Organization Processes"	Phase responsible	Nov. 2009
13	CEEX 2-06-11-93 "Self-assembled bidimensional supramolecular structures based on functionalized organic molecules" (SBSS)	Team member	2006 –2008
14	CEEX 06-11-50 "New Coronands and Cryptands with Supramolecular Properties: Design, Synthesis, Structural Analysis and Potential Applications in Molecular Electronics" (NCCPSDSCPAEM)	Team member	2006 –2008
15	Capacities/ Module I/Project 128/2007 "The Increasing of the Research-Development Capacity by the Access for Large Data Bases Specific to Sciences. (ACCESBAZE)"	Team member	2007 –2009
16	CERES 4-37 „New Supramolecular Structures Based on Macrocyclic Compounds and Cage Molecules Functionalized on Colloidal Gold"	Team member	2004-2006
17	1736 CNCSIS Grant A "Synthesis, Structure and Reactivity of New Macrocyclic Compounds"	Team member	2003-2005