Europass Curriculum Vitae	
Personal information	
First name / Surname	**Nicoleta-IoanaTOSA (maiden name ARDELEAN)**
Address	Donat Street 67-103, Cluj-Napoca, Romania
Telephone	Office - +40-264-584037/173 Home - +40-264-265450
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, 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://www.itim-cj.ro/lab4
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/department-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/microstructuration
Name and type of organisation providing education and training	"Babeş-Bolyai" University, Cluj-Napoca, Romania, Faculty of Chemistry and Chemical Engineering, Organic Chemistry Department
Dates	1989-1994; 1994-1995
Title of qualification awarded	BSc in Physical-Chemistry; MSc in Advanced Heterocyclic Chemistry
Principal subjects	Phenothiazine derivatives; Substitution reactions
Name and type of organisation providing education and training	"Babeş-Bolyai" University, Cluj-Napoca, Romania, Faculty of Chemistry and Chemical Engineering, Organic Chemistry Department
Courses and training	
Dates	19.02.2019-21.02.2019
Name and place	**"Time-resolved Microscopy and Correlation Spectroscopy"** 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	8th 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	13.02.2017-24.02.2017
Name of host institution	**International Center of Theoretical Physics ICTP,** Trieste, Italia, Winter College on Optics: "Advanced Optical Techniques for Bio-imaging" http://indico.ictp.it/event/7920/other-view?view=ictptimetable
Main activities and responsibilities	**Co-organizer** (project proposal, applications evaluator and coordination) **Co-director** and **Lecturer:** Teaching activities devoted to optical lithography course 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 Spectrometrie Physique (current Laboratoire Interdisciplinaire de Physique LiPhy) (UMR 5588), MOTIV Group, https://www-liphy.ujf-grenoble.fr/-MOTIV-?lang=fr
Main activities and responsibilities	Egide scholar research stage, PhD level; TPA metallic micro- and nanostructures fabrication by laser direct writing, SEM and optical microscopy 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://www-liphy.ujf-grenoble.fr/-MOTIV-?lang=fr
Main activities and responsibilities	Egide scholar & ERASMUS PhD student; 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**	
European level (*)		Listening		Reading		Spoken interaction		Spoken production			
Language 1		C1	Competent User	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	B1	Independent User
Language 3		B1	Independent User	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	A1	Basic User

Computer skills and competences	Windows, Office, Origin, MestreNova, ChemDraw, CellSense, SpectraSuit, 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 students or member of the team
Social skills and competences	Good worker and team integration,
Other skills and competences	Mathematics, Sport, Music, Dance, Outdoors activities, Traveling
Driving licence	Type B
Additional information	ResearcherID: C-3630-2011; citations number: **91**; Hirsch index: **6**; **35** publications (27 ISI, 7 non-ISI), and **65** international conference participations (**38** posters, **27** oral presentations). **NANOPROSPECT** databases 1. **Awarded by CNCSIS (2009)** for papers: "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 2.829/2013,** "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.**
Annexe	1. List of published papers. 2. List of projects participation.

Annexe 1: List of papers (selected):

1. 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,** https://doi.org/10.1002/jrs.5722, Early Access **IF 2.809**
2. 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**
3. 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;
4. N. Tosa, F. Toadere, "Investigation of optical properties of periodically arranged gold nanostructured patterns in transparent polymer films", Proc. SPIE **2018**, 10977, Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies IX, 109770O, 1-4; doi: 10.1117/12.2323971
5. A 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 1.151**.
6. 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**
7. 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**
8. 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**
9. 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**
10. 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**
11. 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**
12. 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**
13. L. Buimaga-Iarinca, 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**
14. 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**
15. **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**
16. **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**

17. **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**
18. J. Bosson-Ehoomann, 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**
19. **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;
20. 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;
21. 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.
22. 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.
23. **N. Tosa**, F. Toadere, C. Hojbota, V.Tosa, "Laser-induced metallic nanograined thin films processing" *AIP Conf. Proceedings* **2013**, *1565*, 179-184. **ISSN 1551-7616**
24. 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**
25. 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.
26. **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.
27. L. Buimaga-Iarinca, **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.
28. **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. doi:10.1088/1742-6596/182/1/012019**.
29. G. Vitrant, J. Bosson, **N. Tosa**, T. Rosenzveig, O. Stephan, S. Astilean, P.L. Baldeck, "Observation of optical dispersion effects in metallic nanostructure s fabricated by laser illumination of an organic polymer matrix doped with metallic salts" *Proc. SPIE* **2007***, 6470*, *64700O, 1-6.* **ISSN 0277-786x.**
30. **N. Tosa**, J. Bosson, M. Pierre, C. Rambaud, M. Bouriau, G. Vitrant, O. Stephan, S. Astilean, P. L. Baldeck, "Optical properties of metallic nanostructures fabricated by two-photon induced photoreduction", *Proc. SPIE* **2006**, *6195*, 619501, 1-8. **ISSN 0277-786x.**

Annexe 2: List of projects participation:

Programm / Project	**Responsability**	**Period**
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	**2018-20120**
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**
PN-II-PT-PCCA-2013-4-1374 / Project 237/2014 Optical Nanofabrication in the domain 5 nm - 50 nm"	Partner Team Leader	2014-2017
PN-II-ID-PCE-2012-4-0342 / Project 31/2013 "Single Attosecond Pulse Generation by Femtosecond waveforms"	Team member	2013-2016
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
PN-II-PT-PCCA-2011-3.2-0210/ Project 169/2012 "1 Petabyte Optical Disc"	Partner Team Leader	2012-2016
Capacities/ 2 PM/I/07.10.2008 „Molecular and Biomolecular Physics Department Upgrading (MDFMOLBIO)"	Team member	2010-2012
Core Program/ PN 09-44 02 04 "Investigation of Molecular Recognition and Self-Organization Processes"	Phase responsible	Nov. 2009
CEEX 2-06-11-93 "Self-assembled bidimensional supramolecular structures based on functionalized organic molecules" (SBSS)	Team member	2006 –2008
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
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
CERES 4-37 „New Supramolecular Structures Based on Macrocyclic Compounds and Cage Molecules Functionalized on Colloidal Gold"	Team member	2004-2006
1736 CNCSIS Grant A "Synthesis, Structure and Reactivity of New Macrocyclic Compounds"	Team member	2003-2005