

CURRICULUM VITAE

1. PERSONAL DATA

Surname: BRANDUS (maiden name: NENU)
First name: Catalina Alice
Date/Place of Birth: 21 May 1986 / Bucharest, Romania
Nationality: Romanian
Gender: Female
Languages: English (good), French (good)
German (beginner)
Romanian (native language)
Office: National Institute for Laser, Plasma and Radiation Physics (INFLPR)
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2. EDUCATION AND TRAINING

PhD in Physics

Dates/Institution: October 2012 - December 2019 / Faculty of Physics, University of Bucharest, Romania
Title of the Thesis: "Generation of ultrashort optical pulses by using new laser active media of Nd³⁺-doped borate type"
Granted by Order No. 4021/ 07.04.2020 of the Ministry of Education and Research

• Doctoral scholarship

Subject: "New laser active media for the generation of ultrashort optical pulses"
Period: June 2014 - September 2015
Institution: Faculty of Physics, University of Bucharest, Romania
Supervisor: Dr. Traian DASCALU
Program: European Social Fund, Sectoral Operational Programme Human Resources Development 2007-2013; POSDRU/159/1.5/S/137750

MSc Degree in Biophysics and Medical Physics

Dates/Institution: October 2008 - February 2010 / Faculty of Physics, University of Bucharest, Romania
Title of the Thesis: "In silico investigation and structure optimization of antimicrobial peptide Cecropin P with maximization of its cytotoxic potential. MD Simulation", prepared at Bioinformatics & Structural Biochemistry Department of the Institute of Biochemistry of the Romanian Academy (IBAR).

Diploma in Biophysics:

September 2008, Faculty of Physics, University of Bucharest, Romania
Dates / Institution: October 2004 - June 2007 / Faculty of Physics, University of Bucharest, Romania
October 2007 - July 2008 / Faculty of Physics, Faculty of Biology, Faculty of Foreign Languages, University of Duisburg-Essen, Germany
Title of the Thesis: "2D-NMR Spectroscopy Applied for Structure Determination of a Peptide" prepared at Center of Medical Biotechnology (ZMB), University of Duisburg-Essen, Essen, Germany.

TRAINING

1. 21 - 26 September **2009**, *Short course on 2D NMR spectroscopy for proteins*, Sofia, Bulgaria; Federation of European Biochemical Societies (FEBS), Sofia School of Protein Science "From basic research to drug design", 21-26 September 2009, Sofia, Bulgaria.
2. 24 - 26 October **2012**, "MT01413-SG-190 SolidEdge Fundamentals", Bucharest, Romania.
3. 14 - 17 July **2013**, 540. Wilhelm und Else Heraeus-Seminar "Modern Concepts of Continuous Wave and Pulsed High Power Lasers", Physikzentrum Bad Honnef, Germany.
4. 21 - 25 June **2015**, *Short course on ultrashort laser pulse measurement techniques*, CLEO Europe - EQEC 2015 Conference, München, Germany.
5. August - September **2015**, Laboratory work on "Nonlinear mirror mode-locking technique" at Non Linear Optics and Solid State Lasers Laboratory, Department of Physics, Sofia University "St. Kliment Ohridski", during 9 days, Sofia, Bulgaria.
6. 24 - 29 July **2016**, Siegman International School on Lasers: 2016, ICFO, Barcelona, Spain.
7. 19-22 July **2017**, Laser Ignition Summer School 2017, Brasov, Romania.
8. 02-06 July **2018**, Laser Ignition Summer School 2018, Sibiu, Romania.
9. 07 - 12 October **2018**, Laboratory training on "Particle Image Velocimetry (PIV)", Project 691688 LASIG-TWIN; Laboratory of Energetic Molecular Macroscopic Combustion, Spray Combustion Plasma Laser, CNRS, Paris, France.
10. 21-26 October **2018**, Laboratory training on "Fiber processing by means of CO₂ laser radiation (and other techniques)", Project 691688 LASIG-TWIN; Fraunhofer Institute for Applied Optics and Precision Engineering, Fraunhofer IOF, Jena, Germany.
11. 03 - 07 December **2018**, Laboratory training on "Assembly and packaging of optical and laser-optical systems for harsh environments (Sputtering Metallization, Solderjet Bumping and Alignment Turning)", Project 691688 LASIG-TWIN; Fraunhofer Institute for Applied Optics and Precision Engineering, Fraunhofer IOF, Jena, Germany.
12. 14 - 18 Oct. **2019**, LabView Core 1 & Core 2 National Instruments Course, Magurele, Ilfov, Romania.

3. WORK EXPERIENCE

National Institute for Laser, Plasma and Radiation Physics

Laboratory of Solid-State Quantum Electronics
409 Atomistilor Str., Magurele 077125, Ilfov, Romania

Period / Position:	01/2013 - present	Scientific Researcher
	01/2010 - 12/2012	Research Assistant

Institute of Atomic Physics

407 Atomistilor Str., Magurele 077125, Ilfov, Romania

Period / Position:	03/2010 - 06/2010	Reviewer (COR 343309)
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4. RESEARCH INTERESTS

- Diode-pumped solid-state lasers.
- Mode-locking of lasers.
- Generation of ultrashort pulses.
- Ceramic and single crystal laser materials.
- Nonlinear optics: second harmonic generation, self-frequency doubling, Kerr nonlinearity.
- Applications of solid-state lasers.
- High-power fiber lasers

5. COMPUTER SKILLS AND COMPETENCES

Operating systems:	Windows, Linux (beginner)
Text editing:	OpenOffice.org, MS Word
Presentations:	OpenOffice.org, MS PowerPoint.
Data handling:	OpenOffice.org, MS Excel
Data analysis and representation:	Microcal Origin, Igor Pro
Simulation of Optical Systems:	Rayica (working under Wolfram Mathematica platform)
Simulation of Laser Resonators:	Paraxia Plus
Simulation of molecules:	Gromacs, Amber
Visualization of molecules:	VMD, Pymol
3D Technical drawing:	Solid Edge ST6

6. MISCELLANEOUS

1. 2013 SPIE Student Chapter Member.
2. 2017, Member of the Local Committee of Laser Ignition Summer School 2017, Brasov, Romania.
3. 2018, Member of the Local Committee of Laser Ignition Summer School 2018, Sibiu, Romania.
4. 02-06 July 2018, Laser Ignition Summer School 2018, Sibiu, Romania, **Special Award** for poster-presentation: *"Efficient Nd:YVO₄ SESAM Mode-Locked Laser: Design and Performance Characterization"*.

Reviewer for several ISI peer-review journals:

Optics Express, Optics Letters, Optical Materials Express, Applied Optics (OPTICA)
Infrared Physics and Technology, Optics & Laser Technology (ELSEVIER)
Materials, Crystals, Applied Sciences, Fibers, Sensors (MDPI)
Frontiers in Physics (Frontiers Media)

7. PUBLICATIONS

Peer-review journals:	10 (5 first author)
Proceedings of International Conferences:	5
Contributed talks at international conferences:	27 (8 oral talks)