

PERSONAL INFORMATION

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Extreme Light Infrastructure - Nuclear Physics (ELI-NP)
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WORK EXPERIENCE

2021-prezent	Senior scientist (CS I) Extreme Light Infrastructure-Nuclear Physics (ELI-NP), Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), Reactorului Str., No. 30, 077125, Măgurele-Ilfov, Romania • Implementation of the project and pursue experiments at ELI-NP
2020-2021	Head of Department Laser Driven Experiments (LDED), CS I Extreme Light Infrastructure-Nuclear Physics (ELI-NP), Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), Reactorului Str., No. 30, 077125, Măgurele-Ilfov, Romania • Implementation of the ELI-NP project
2020-prezent	PhD Supervisor Doctoral School "Engineering and Applications of Lasers and Accelerators" (S.D.I.A.L.A.) - Politehnica University of Bucharest
2011-2019	Head of the Electron Accelerators Laboratory 230 National Institute for Laser, Plasma, and Radiation Physics (INFLPR), Atomistilor Str. No. 409, PO Box MG 36, 077125, Romania Măgurele-Ilfov, Romania • Managed the activities and funding of the laboratory • Led a group of 6 young researchers (doctoral, postdoctoral researchers and a CSIII researcher) in electron beam physics and plasma physics projects • Member of the INFLPR Scientific Council • Member of the Steering Committee of INFLPR
2009-prezent 2007-2009	Senior scientist (CS I) Researcher National Institute for Laser, Plasma, and Radiation Physics (INFLPR), Atomistilor Str. No. 409, PO Box MG 36, 077125, Romania Măgurele-Ilfov, Romania • Project director in plasma physics, lasers and electron beams
2004-2007	Postdoctoral researcher Los Alamos National Laboratory, Plasma Physics Group P-24, Los Alamos 87545, New Mexico, USA • Plasma physics
2002-2004	Postdoctoral researcher University of Oxford, Department of Engineering Science, Oxford OX1 3PJ, UK • Plasma physics

1997-2002	Research and teaching assistant, PhD student
	University of Miami, Department of Physics, Nonlinear Dynamics Lab. & Department of Electrical and Computer Engineering, Optics Lab., Coral-Gables, FL, USA
	▪ Nonlinear plasma dynamics and control of chaos in plasma
1995-1997	Research Assistant
	National Institute for Laser, Plasma, and Radiation Physics (INFLPR), Atomistilor Str. No. 409, PO Box MG 36, 077125, Măgurele-Ilfov, Romania
	▪ Laser physics

EDUCATION AND TRAINING

1997-2002	PhD
	University of Miami, Coral Gables, FL, USA
	▪ Physics
1995-1996	Master
	University of Bucharest, Faculty of Physics
	▪ Opto-technics and technologies with lasers and plasma
1990-1995	Bachelor of Science (Diplomă de Licență)
	University of Bucharest, Faculty of Physics
	▪ Optics, spectroscopy, plasma and lasers

PERSONAL SKILLS

Mother tongue(s)	Romanian				
Other language(s)					
	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
French	B1	B1	B1	B1	B1
Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user					

Managerial skills	▪ Over 9 years of leadership as head of department with over 20 members in 2 national research institutions in Romania
Supervising activities	▪ Coordinated 2 PhD students and 2 postdoctoral researchers, INFLPR, 2011-2019 ▪ PhD supervisor for 6 researchers, ELI-NP, starting with 2020

Scientific and managerial activity	▪ 100 publications in journals (ISI), proceedings of international and national conferences, etc. ▪ Project director or partner responsible in 9 research projects funded by UEFISCDI, EURATOM, COST, IFA, ESA ▪ Number of citations: over 1000 in Google Scholar, Hirsh index 17
Professional Activity	▪ Initiated new fields of research in physics in Romania: -2010: physics of complex plasmas (plasmas with strongly coupled microparticles); -2018: demonstrated for the first time the dynamic effect of electron beams with ~10 keV energy on microparticles; -2022: application of machine learning in the field of lasers and plasma;

	-2023: demonstrated micro-turbulence in complex plasmas induced with an electron beam - Referee for journals: Physics of Plasmas, IEEE Transactions on Plasma Science, Plasma, Contributions to Plasma Physics, Plasma Sources Science and Technology, Plasma Physics and Controlled Fusion, Chaos, Applied Surface Science, Journal of Imaging, Vacuum, Romanian Reports in Physics, Fusion Design and Engineering, Journal of Imaging, etc. - Referee for research funding agencies: NSF-DOE (USA), FWO (Belgium), FONDECYT (CHILE), NCN (Poland), UEFISCDI (Romania) - Member of the Organizing Committee of ELI-NP Autumn School, 2020, ELI-NP, Măgurele-Ilfov, Romania - Member of the Organizing Committee of the Plasma Physics and Applications Conference (CPPA) 2018-Iasi, Romania - Co-organizer with Tom Intrator and Scott Hsu (Los Alamos National Laboratory) of the 2006 Plasma Physics Summer School, June-Aug., Los Alamos National Laboratory, New Mexico - Co-organizer with Tom Intrator, Leonid Dorf, Zhehui Wang and Glen Wurden (Los Alamos National Laboratory) of the 2005 Nano-Micro Gadgets Mini Conference, September 15, Santa Fe, New Mexico
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Awards and Honors	- The article "Classification of laser beam profiles using automatic learning at the ELI-NP high-power laser system", authors V. Gaciu, I. Dăncuș, B. Diaconescu, D. G. Ghiță, E. Slușanschi, C. M. Ticoș, was nominated in the "Featured" category in AIP Advances, 2024. - The article by E. Molnar, D. Stutman, C. Ticoș, with the title "Optimizing direct laser-driven electron acceleration and energy gain at ELI-NP"- EPJD 74, 229 2020, was nominated by the European Physical Journal D in the "EPJ D Highlight" section. - The article by C.M. Ticoș, D. Ticoș, J.D. Williams, with the title "Kinetic effects in a plasma crystal induced by an external electron beam" - PoP 26, 43702 2019, was nominated by the Physics of Plasmas magazine in the "Latest advancements in Dusty Plasmas" section, 2020. - Finalist of "Best Image and Video in Plasma Physics", European Physical Society-Plasma Physics, July 2-6, 2018, Prague, Czech Republic. - The article by C.M. Ticoș, A. Scurtu, D. Ticoș, with the title "A pulsed "plasma broom" for dusting off surfaces on Mars", published in New Journal of Physics 19, 063006/1-11(2017) was featured in: - Physicsworld.com, 9 Jun 2017; - Nature Physics 13, 623 (2017) in the Research Highlights section - Included in the exclusive "Highlights of 2017" collection of New Journal of Physics. - The Radu Grigorovici Award of the Romanian Academy for 2014 (awarded in 2016). - The Best Speaker Prize of the International Workshop on the Frontiers of Modern Plasma Physics, 14-25 July 2008, Abdus Salam International Center for Theoretical Physics, Trieste, Italy. - Young Scientist Medal and Certificate, The Fifth International Conference on the Physics of Dusty Plasmas, 18-23 May 2008, Ponta Delgada, Azores, Portugal. - Graduate Students Association Award, 25 Apr. 2002, University of Miami, Florida, USA. 3rd prize at the Fourth and the Fifth Annual UM Graduate Student Research & Creativity Forum, 18 Nov. 1999 and 1st Mar. 2001, University of Miami, Florida, USA. - Outstanding Teaching Assistant Award, 2000, Department of Physics, University of Miami, Florida, USA.
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Refereed papers	[83] D Ticoș, A Scurtu, ML Mitu, N Udrea, M Oane, J Williams, CM Ticoș Symmetrical vortices and laminar dust flow induced by an intense electron beam interacting with a strongly coupled dusty plasma Physics of Plasmas 31, 083703 (2024). [82] A Scurtu, D Ticoș, N Udrea, ML Mitu, CM Ticoș Thrust of a pulsed plasma jet measured from deviations of a ballistic pendulum Physica Scripta 99, 095607 (2024). [81] V. Gaciu, I. Dăncuș, B. Diaconescu, D. G. Ghiță, E. Slușanschi, C. M. Ticoș, Classification of laser beam profiles using machine learning at the ELI-NP high power laser system
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	AIP Advances 14, 045114 (2024). [80] E.-M. Pavelescu, D. Ticoș, O. Ligor, C. Romanitan, A. Matei, F. Comănescu, V. Țucureanu, S.I. Spănulescu, C. Ticoș, T. Ohshima, T. Nakamura, M. Imaizumi, R.S. Goldman, A. Wakahara, K. Yamane Enhancement in photoluminescence from GaPAsN/GaP alloys by 6-MeV electrons irradiation and rapid thermal annealing Optical Materials 149, 115075 (2024). [79] A. Scurtu, D. Ticos, M.L. Mitu, M. Dumitru, N. Udrea, C.M. Ticoș Induced ageing of ZnS: Ag microparticles exposed to 13 keV electron beam Physica Scripta 99 (2), 025404 (2024). [78] C. Jalba, L. Dinca, N. Djourellov, C. Ticoș, A. Magureanu, B. Diaconescu, The importance of chemical shift screening of the precursors for increasing the exfoliation efficiency of the graphite layers University Politehnica of Bucharest Scientific Bulletin-series A-Applied Mathematics and Physics 85 (3), 131 (2023). [77] R. Anirudh , R. Archibald , M. S. Asif et al., 2022 Review of Data-Driven Plasma Science IEEE Transactions on Plasma Science 51 (7), 1750 (2023). [76] D. Ticoș, E. Constantin, M.L. Mitu, A. Scurtu, C.M. Ticoș A laboratory platform for studying rotational dust flows in a plasma crystal irradiated by a 10 keV electron beam, Scientific Reports 13 (1), 940 (2023). [75] A. Scurtu, D. Ticoș, M.L. Mitu, C. Diplășu, N. Udrea, C.M. Ticoș Splitting CO₂ in Intense Pulsed Plasma Jets, International Journal of Molecular Sciences 24 (8), 6899 (2023). [74] N. Udrea, M.L. Mitu, A. Scurtu, D. Ticoș, C.M. Ticoș Chaotic Oscillations of Vertically Aligned Microrods in a Plasma Sheath, IEEE Transactions on Plasma Science 51 (3), 835-846 (2023). [73] M. Galatanu, M. Enculescu, A. Galatanu, D. Ticos, M. Dumitru, C. Ticoș Microengineering Design for Advanced W-Based Bulk Materials with Improved Properties, Nanomaterials 13 (6), 1012 (2023). [72] R. Iovanescu, R.P. Daia, E.I. Slusanschi, C.M. Ticoș, Optimisation of particle-in-cell simulations for laser wakefield acceleration, University Politehnica of Bucharest Scientific Bulletin-series A-Applied Mathematics and Physics 85 (9), 159 (2023). [71] A Scurtu, D Ticoș, ML Mitu, N Udrea, CM Ticoș Stretching and Compression of Double Dusty Plasma Vortex, Crystals 13 (1), 76 (2023) [70] D. Ticoș, M. Galațanu, A. Galațanu, M. Dumitru, M.L. Mitu, N. Udrea, A. Scurtu, C.M. Ticoș Irradiation of W and K-Doped W Laminates without or with Cu, V, Ti Interlayers under a Pulsed 6 MeV Electron Beam, Materials 15 (3), 956 (2022). [69] A. Măgureanu, L. Dincă, C. Jalbă, R.F. Andrei, I. Burducea, D.G. Ghiță, V. Nastasa, M. Gugiu, T. Asavei, O. Budrigă, D. Ticoș, V. Crăciun, B. Diaconescu, C.M. Ticoș, Target characteristics used in laser-plasma acceleration of protons based on the TNSA mechanism, Frontiers in Physics 10, 727718 (2022). [68] I. Ouatu, B. T. Spiers, R. Aboushelbaya, Q. Feng, M. W. von der Leyen, R. W. Paddock, R. Timmis, C. Ticoș, K. M. Krushelnick, and P. A. Norreys, Ionization states for the multipetawatt laser-QED regime, Physical Review E 106, 015205 (2022). [67] D. Ticoș, A. Scurtu, J.D. Williams, L. Scott, E. Thomas, Jr., D. Sanford, C.M. Ticoș, Rotation of a strongly coupled dust cluster in plasma by the torque of an electron beam, Physical Review E 103, 023210 (2021). [66] O Budrigă, CM Ticoș Modeling the electron acceleration in relativistic channels for space irradiation applications,
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Influence of electron irradiation and rapid thermal annealing on photoluminescence emission from GaAsNBi alloys,
Applied Physics Letters 117 (14), 142106 (2020).
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The European Physical Journal D 74 (12), 1-12 (2020).
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Journal of Instrumentation 15 (09), C09053 (2020).
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Plasma Physics and Controlled Fusion 62, 025003 (2020).
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Complementary dosimetry for a 6 MeV electron beam,
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Journal of Lasers, Optics & Photonics 6(1), 1000194 (2019).
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Journal of Intense Pulsed Lasers and Applications in Advanced Physics 4, 65-70 (2014).
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Thermal phenomena induced in a small graphite sample during irradiation with a few MeV electron beam: Experiment versus theoretical simulations,
Nuclear Instruments and Methods in Physics Research B 318, 232–236 (2014).
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- High Speed Imaging of Dusty Plasmas,
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Feedback,
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Nanostructured PZT Type Thin Films Prepared by the Thermionic Vacuum Arc Method
Journal of Optoelectronics and Advanced Materials 10, 3041 (2008).
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Invited Talks	[19] High power lasers in the medicine of XXI century, "Tehnologia & IHealth în Medicina Sec. XXI" – Târgu-Mureș, 5-7 July 2022 [18] Kinetic Effects Induced in a Plasma Crystal by an Electron Beam, 18th International Conference on Plasma Physics and Applications CPPA 2019, 20-22 June, Iasi, Romania. [17] Pushing Charged Microparticles with an Electron Beam in a Plasma Crystal, INDLAS, 2-7 Sept. 2018, Alba Iulia. [16] Solar Panel Cleaning on Mars, IONS, 25-28 July 2017, Balvanyos, Romania. [15] The CETAL-PW Laser at Bucharest as an Irradiation Facility, COST TD1025 SYRA3, WG3 Meeting, Bucharest 29 Feb. 2016, Romania. [14] The Bucharest PW at the CETAL Facility, 5th CLPU Users Meeting, 1st -2nd Dec. 2015, Salamanca, Spain. [13] Nano structures produce at the interaction of energetic plasma with surfaces, Int. Workshop on Advances in Nanophys and Nanophotonics 31st Aug. -2nd Sept. 2015, Magurele, Romania. [12] Technology for manipulation and removal of dust for Mars missions, Romanian Space Week, 27-29 May 2015, COMOTI, Bucharest, Romania. [11] Dusty Plasmas: a Review of Experiments and Possible Applications, International Student Conference on Photonics 2012, 8-11 May, Sinaia, Romania. [10] Extreme Light Infrastructure-Nuclear Pilar (ELI-NP) in Romania, Los Alamos National Laboratory, 1st Oct. 2010, New Mexico, USA. [9] Experiments in Dusty Plasmas: Interaction of Dust Particles with a Plasma Jet, International Advanced Workshop on the Frontiers of Plasma Physics, 5-16 July 2010, Trieste, Italy. [8] Dust Crystal Interaction with Plasma Jet, Summer College on Plasma Physics, 10-28 Aug. 2009, Trieste, Italy. [7] Interaction of Dust Particles with Plasma Jets, International Balkan Workshop on Applied Physics-IBWAP 2009, 6-8 July, Constanta, Romania. [6] Observation of Hypervelocity Dust in Dense Supersonic Plasma Flows: Physics and Applications, International Workshop on the Frontiers of Modern Plasma Physics, 14-25 July 2008, ICTP, Trieste, Italy. [5] A New Parameter Regime for Dust in Plasma: the Case of Dense and Supersonic Plasma Flow, International Conference on Physics of Dusty Plasmas ICPDP5, 18-23 May 2008, Ponta Delgada, Azores, Portugal. [4] Dust as a Diagnostic Tool in RF Plasma Sheaths and in Fusion Plasmas, Applied Materials, Inc., 4 Dec. 2006, Santa Clara, California, USA. [3] Pressure triggered collective oscillations of a dust crystal in a capacitive RF plasma, 31st European Physics Conference on Plasma Physics EPS 2004, 29 June -2nd July, London, UK. [2] Oscillations of Dust Particles Due to Wake Fields: An Experimental Demonstration, International Topical Conference on Plasma Physics ICTP 2003, 7-12 Sept., Santorini, Greece. [1] Chaos and Control of Chaos in Experimental Plasmas, Illinois State University, 19 Nov. 2002, Bloomington, IL, USA.
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