Europass Curriculum Vitae

Scientific Profile

Personal information

First name(s) / Surname(s)	**Ionut TOPALA**
Address(es)	Alexandru Ioan Cuza University of Iasi, Faculty of Physics Iasi Plasma Advanced Research Center (IPARC), 11 Carol I Blvd., Iasi 700506, Romania Tel : 0040 232 201188
E-mail	ionut.topala@uaic.ro

Work experience

Dates	August 2020 - present
Occupation or position held	Deputy Dean at Faculty of Physics, “Alexandru Ioan Cuza” University of Iasi
Dates	2008 - present
Occupation or position held	Associate Professor
Main activities and responsibilities	Teaching and research activity with students, related to: • Physics of Atom and Molecules • Quality assurance in medical physics • Realization of final projects, bachelor or master and PhD thesis Coordinator of Hard Sciences module in the frame of UAIC JASSY summer school, launched in 2018 Research activity on plasma physics and related applications in space science, materials science and life sciences: laboratory experiments for molecular astrophysics, plasma polymerization, plasma surface modification of polymers, plasma medicine.
Name and address of employer	“Alexandru Ioan Cuza” University of Iasi, Faculty of Physics, Plasma Physics Laboratory, 11 Carol I Blvd., Iasi 700506, Romania
Type of business or sector	Education and Research

Education and training

Date	16.10.2020
Title of qualification awarded	Habilitation in Physics
Name and type of organisation	Ministry of Education and Research
Dates	October 2010 – March 2012
Title of qualification awarded	PostDoc researcher
Name and type of organisation providing education and training	“Alexandru Ioan Cuza” University of Iasi, Faculty of Physics, Plasma Physics Laboratory, 11 Carol I Blvd., Iasi 700506, Romania
Dates	November 2004 – July 2008
Title of qualification awarded	Doctoral studies in physics and chemistry (distinction: *summa cum laude*) Cotutelle Romania (supervisor prof.dr. Gheorghe Popa) – France (supervisor Dr. Jean Durand)
Name and type of organisation providing education and training	“Alexandru Ioan Cuza” University of Iasi, Faculty of Physics, Plasma Physics Laboratory, 11 Carol I Blvd., Iasi 700506, Romania Montpellier 2 University, Europeen Institute of Membranes, IEM / UM 2 - CC 047 Place Eugène Bataillon 34095 Montpellier, France
Dates	October 2003 – June 2005
Title of qualification awarded	Master degree in Plasma Physics
Name and type of organisation	“Alexandru Ioan Cuza” University of Iasi, Faculty of Physics, 11 Carol I Blvd., Iasi 700506, Romania

Dates	October 1999 – June 2003
Title of qualification awarded	Bachelor degree in Medical Physics
Name and type of organisation providing education and training	"Alexandru Ioan Cuza" University of Iasi, Faculty of Physics, 11 Carol I Blvd., Iasi 700506, Romania

Personal skills and competences

Mother tongue(s)	Romanian
Other language(s)	English, French

Professional skills and competences

Research activity

ISI papers: 43 (starting with 2005)
Citations: 696 in journal with impact factor and WOS books, without self-citations (H-index 15)
Values of standards necessary and mandatory for granting academic titles in higher education and research – Physics Field (National Council for Attestation of Titles, Diplomas and Certificates):

A	I	P	C	h	T
5,67	**5,79**	**12,18**	**168,77**	**15**	**26,10**

Invited presentations at international conferences : 8 (ICPIG, ESCAMPIG, SPM, IBWAP, CNCES, ICAPST, ICPAM)
Oral presentations at national and international conferences : 45
Poster presentations at national and international conferences: > 200

Reviewer for: Nature Scientific Reports, Applied Polymer Materials, Thin Solid Films, Journal of Physics D: Applied Physics, Plasma Sources Science and Technology, European Physical Journal - Applied Physics, Plasma Science and Technology, Physics of Plasmas, Plasma, Cancers, European Physical Journal D, European Physical Journal - Applied Physics, Plasma Chemistry and Plasma Processing, Plasma Processes and Polymers, Applied Surface Science, Surface Coating Technology.

Selected Publications

1. Constantinos Lazarou, Alina Silvia Chiper, Charalambos Anastassiou, Ionut Topala, Ilarion Mihaila, Valentin Pohoata, George Elias Georghiou, Numerical simulation of the effect of water admixtures on the evolution of a helium/dry air discharge, J. Phys. D: Appl. Phys. 52 (2019) 195203 (22pp)
2. Constantinos Lazarou, Charalambos Anastassiou, Ionut Topala, Alina Silvia Chiper, Ilarion Mihaila, Valentin Pohoata, George Elias Georghiou, Numerical simulation of a capillary helium and helium-oxygen atmospheric pressure plasma jet: propagation dynamics and interaction with dielectric, Plasma Sources Science and Technology 27, 105007 (25pp) (2018)
3. Bianca Hodoroaba, Ioana Cristina Gerber, Delia Ciubotaru, Ilarion Mihaila, Marius Dobromir, Valentin Pohoata, Ionut Topala, Carbon 'fluffy' aggregates produced by helium–hydrocarbon high-pressure plasmas as analogues to interstellar dust, Monthly Notices of the Royal Astronomical Society, 481(2), 2841–2850 (2018)
4. Ioana Cristina Gerber, Ilarion Mihaila, Dennis Hein, Andrei Vasile Nastuta, Roxana Jijie, Valentin Pohoata and Ionut Topala, Time Behaviour of Helium Atmospheric Pressure Plasma Jet Electrical and Optical Parameters, Applied Sciences, 7, 812 (2017)
5. Karol Hensel, Katarına Kucerova, Barbora Tarabova, Mario Janda, Zdenko Machala, Kaori Sano, Cosmin Teodor Mihai, Mitica Ciorpac, Lucian Dragos Gorgan, Roxana Jijie, Valentin Pohoata, Ionut Topala, Effects of air transient spark discharge and helium plasma jet on water, bacteria, cells, and biomolecules, Biointerphases, 10(2), 029515 (2015).
6. Ionut Topala, Masaaki Nagatsu, Capillary plasma jet: A low volume plasma source for life science applications, Applied Physics Letters, 106, 054105 (2015).
7. G.B. Rusu, M. Asandulesa, I. Topala, V. Pohoata, N. Dumitrascu, M. Barboiu, Atmospheric pressure plasma polymers for tuned QCM detection of protein adhesion, Biosensors and Bioelectronics, 53, 154–159, (2014).
8. Andrei V. Nastuta, Valentin Pohoata, Ionut Topala, Atmospheric pressure plasma jet - living tissue interface: electrical, optical and spectral characterization, Journal of Applied Physics, 113, 183302, (2013).

9. Mihai Asandulesa, Ionut Topala, Valentin Pohoata, Yves Marie Legrand, Marius Dobromir, Marian Totolin, Nicoleta Dumitrascu, Chemically polymerization mechanism of aromatic compounds under atmospheric pressure plasma conditions, Plasma Processes and Polymers, 10(5), 469–480, (2013).
10. Roxana Jijie, Valentin Pohoata, Ionut Topala, Thermal behavior of bovine serum albumin after exposure to barrier discharge helium plasma jet Applied Physics Letters, 101, 144103, (2012).
11. Andrei Nastuta, Ionut Topala, Constantin Grigoras, Valentin Pohoata, Gheorghe Popa, Stimulation of wound healing by helium atmospheric pressure plasma treatment, Journal of Physics D: Applied Physics, 44(10), 105204 (9 pages) (2011)
    Cover picture of Journal of Physics D: Applied Physics (16 March 2011) selected from this paper
12. Mihai Asandulesa, Ionut Topala, Valentin Pohoata, Nicoleta Dumitrascu, Influence of operational parameters on plasma polymerization process at atmospheric pressure, Journal of Applied Physics, 108, 093310 (6 pages) (2010)
13. Ionut Topala, Mihai Asandulesa, Delia Spridon, Nicoleta Dumitrascu, Hydrophobic Coatings Obtained in Atmospheric Pressure Plasma, IEEE Transaction on Plasma Science, 37(6), 946-950, (2009).
14. Ionut Topala, Nicoleta Dumitrascu, Gheorghe Popa, Properties of the acrylic acid polymers obtained by atmospheric pressure plasma polymerization. Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, 267(2), 442–445, (2009).

Book Chapters

Nicoleta Dumitrascu, Ionut Topala, "Medical applications of dielectric barrier discharge" (pp. 103-136) in "Biomaterials and Plasma Processing" edited by Nicoleta Dumitrascu, Ionut Topala, Alexandru Ioan Cuza University Press, Iasi, 2011 (328 pages)

Ionut Topala, Andrei Nastuta, " Helium atmospheric pressure plasma jet: diagnostics and application for burned wounds healing" (pp. 335-345) in "Plasma for bio-decontamination, medicine and food security" edited by Zdenko Machala, Karol Hensel, Yuri Akishev, NATO Science for Peace and Security Series, Springer Publishing, Heidelberg 2012, (499 pages)

Ionut Topala, Spectre de rezonanţă magnetică: obţinerea spectrelor de rezonanţă electronică de spin (RES) şi determinarea factorului giromagnetic de spin (pag 101-118) in „Lucrări de laborator fizica atomului şi moleculei” (coordonator volum: Gabriela BORCIA), autori Alina Chiper, Catalin Borcia, Ionut Topala, Gabriela Borcia, Editura Editura Universităţii Alexandru Ioan Cuza din Iaşi (UAIC), 2014, ISBN: 978-606-714-090-3

Professional Affiliation

- MC Member for Romania in the COST Action CM1401 *Our Astro-Chemical History*, financed though the COST Programme European Cooperation in Science and Technology since 2016
- MC Member for Romania in the COST Action CA19110 - *Plasma applications for smart and sustainable agriculture,* financed though the COST Programme European Cooperation in Science and Technology since 2020
- MC Member for Romania in the COST Action CA20129 - *Multiscale Irradiation and Chemistry Driven Processes and Related Technologies*, financed though the COST Programme European Cooperation in Science and Technology since 2021
- Member of Romanian Physical Society (RPS) since 2010

Research grants

Participation at implementation of 12 national and international projects focused on research and outreach, during 2003-2021, with both management and research responsibilities

Project manager for the following grants (selected during national call for funding):

- *Synthesis of interstellar dust analogs by plasma methods* (2017-2018), Funding agency: Romanian Space Agency, under the programme Space Technology and Advanced Research, grant no. 180/20.07.2017 (PlasmaDust)
- *Cellular and subcellular effects induced by atmospheric pressure plasma* (2016), Funding agency: Alexandru Ioan Cuza University of Iasi (UAIC), within the internal grant competition for young researchers grant no. GI-2015-06
- *Synthesis of transient complex molecular systems in laboratory plasmas with relevance for molecular astrophysics of hot cores (2014-2016),* Funding agency: Romanian Space Agency, grant no. 349 (PlasmaHotCore)
- *Capillary plasma jet effects on fluorescent protein films (2014),* Funding agency: UEFISCDI, Romania-Japan Bilateral cooperation
- *Effects of atmospheric pressure cold discharge plasmas to bacteria and cell cultures (2013-2014),* Funding agency: UEFISCDI, Romania-Slovakia Bilateral cooperation
- *Development, diagnostic and modelling of cold plasma jets at atmospheric pressure for direct treatment of living tissues (2011-2013),* Funding agency: UEFISCDI, Romania-Cyprus Bilateral cooperation
- *Effects of atmospheric pressure plasma on supramolecular biological systems (2010-2012),* Funding agency: CNCSIS, grant PD 297
- *Study of plasma polymerization reactions in dielectric barrier discharge to obtain materials with applications in medicine (2006-2008),* Funding agency: CNCSIS, grant Td 434

National project manager for international projects (selected after international competition):

- *RESEARCHERS' NIGHT in ROMANIA: #doyouspeakscience (2014-2015),* Funding agency: European Commission under H2020, grant no. 633311 (RoTalkScience)
- *RESEARCHERS' NIGHT in ROMANIA 2013: Science. The great escape (2013),* Funding agency: European Commission under FP7, grant no. 609771 (RNR 2013)

Team member for the international projects (selected after international competition):

- *EUROPEAN RESEARCHERS' NIGHT: Handle with Science (2018-2019),* Funding agency: European Commission under H2020, grant no. 818795 (HSciRO)
- EUROPEAN RESEARCHERS' NIGHT: *Doing Research Midnight in ROmania (2020)*, Funding agency: European Commission under H2020, grant no. 954638 (DoReMi-RO)
- EUROPEAN RESEARCHERS' NIGHT (NIGHT): *Opening Up Science* (2021), Funding agency: European Commission under H2020, Grant No. 101036006 (OpeningUpScience)

Awards

IOP Outstanding Reviewer Awards 2018, Journal of Physics D: Applied Physics

"Dragomir Hurmuzescu" Prize of Romanian Academy 2017

Alexandru Ioan Cuza University prize for Young Researchers 2016

Special prize at 2009 Gala of Education Prizes, Dinu Patriciu Foundation, section Researcher of the Year, Research Category

Winner of the FameLab TVR2 2009 national contest

Best Poster Award, 20th European Conference on Biomaterials (ESB 20), Nantes, France, for the paper: I. Topala, N. Dumitrascu, V. Pohoata, G. Popa, Hemocompatibility of the PET Films Modified by DBD Treatments, Conference CD, P 145 (2006).

Organisational skills and competences

Member in the LOC of Scientific Conferences:

- Conference on Plasma Physics and Applications 2003, 2005, 2010, 2013, 2017, 2019, 2021
- International Conference on Global Research and Education (inter-Academia) 2006, 2011, 2017
- European Science Foundation Exploratory Workshop EW09-103 2009
- Conferinţa Naţională de Fizică 2010
- International Conference on Phenomena in Ionized Gases 2015

20.01.2022 Assoc. prof. habil. Ionut Topala