

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

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Work experience

Dates June 2024 - present

Occupation or position held Dean of Faculty of Physics, "Alexandru Ioan Cuza" University of Iasi

Dates 2008 - present

Occupation or position held 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, European 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: 51 (starting with 2005)
 Citations: 827 in journal with impact factor and WOS books, without self-citations (H-index 15)
 Invited presentations at international conferences : 12 (ICPIG 2015, ESCAMPIG 2016, SPM 2017, IBWAP 2018, CNCES 2019, ICAPST 2021-2023, TIM 2022, CPPA 2023, AFDM 2024)
 Oral presentations at national and international conferences : 49
 Poster presentations at national and international conferences: 241

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.

Book Chapters

Nicoleta Dumitrescu, Ionut Topala, "Medical applications of dielectric barrier discharge" (pp. 103-136) in "Biomaterials and Plasma Processing" edited by Nicoleta Dumitrescu, 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 rezonanță magnetică: obținerea spectrelor de rezonanță electronică de spin (RES) și determinarea factorului giromagnetic de spin (pag 101-118) in „Lucrări de laborator fizica atomului și moleculei” (coordonator volum: Gabriela BORCIA), autori Alina Chiper, Catalin Borgia, Ionut Topala, Gabriela Borgia, Editura Editura Universității Alexandru Ioan Cuza din Iași (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 2016 - 2018
- 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 2020 - 2024
- 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 2021 - 2025
- Member of Romanian Physical Society (RPS) and European Physical Society (EPS)

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. Dumitrescu, V. Pohoata, G. Popa, Hemocompatibility of the PET Films Modified by DBD Treatments, Conference CD, P 145 (2006).

Research grants 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

Projects for students Participation at implementation of 7 national and international projects focused on research and outreach, with both management and educational responsibilities

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

- CNFIS-FDI-2022-0553 "Development of inter-institutional relations and partnerships with the economic-social environment by correlating educational offer with labour market demand, counselling and career guidance (ACCESS 2.0)" (2022)

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):

- Tutor in the "Start experience - START.EXE" project, intended for students interested in accumulating professional experience; POCU/626/6/13/130654, My-SMIS 2014 code: 130654, Contract no. 10107/14.09.2020
- Target group selection and monitoring expert in the project "Legal and entrepreneurial education - the key to business success! (IUS SMART)", POCU/829/6/13/140103, My-SMIS code 2014: 140103, Contract no. 24316/20.12.2021
- *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)

Organisational skills and competences

Member of the international scientific committee:

- International Conference on Physics of Advanced Materials (ICPAM) 2021, 2022, 2023
- International Conference on Global Research and Education (Inter-Academia) 2023
- International Conference on Advances in Plasma Science and Technology (ICAPST) 2020, 2021, 2023

Member in the LOC of Scientific Conferences:

- Conference on Plasma Physics and Applications 2003, 2005, 2010, 2013, 2017, 2019, 2021, 2023
- International Conference on Global Research and Education (inter-Academia) 2006, 2011, 2017
- European Science Foundation Exploratory Workshop EW09-103 2009
- Conferința Națională de Fizică 2010
- International Conference on Phenomena in Ionized Gases 2015
- Fundamental and Applied Research in Physics Workshop 2022, 2023

03.11.2025

Prof. univ. dr. habil. Ionut Topala

Publications list

1. Bianca Tatarcan, Valentin Pohoata, Ioana Cristina Gerber, Gabriela Mihalache, Ilarion Mihaila, Marius Dobromir, Laurentiu-Valentin Soroaga, Ionut Topala, Effects of long-duration non-thermal plasma treatment on quinoa seeds: surface chemistry, mesoscale morphology and germination under optimal and saline conditions, *Food Bioscience*, 68, 106709 (2025)
2. Ioana Cristina Gerber, Ilarion Mihaila, Valentin Pohoata, Andrei Sandu, Catalin Agheorghiesei, Laurentiu Valentin Soroaga, Decebal Iancu, Radu Florin Andrei, Ion Burducea, Mihai Straticiuc, Dumitru Duca, Dmitrii Egorov, Yvain Carpentier, Bertrand Chazallon, Alessandro Faccinetto, Nicolas Nuns, Cristian Focsa, Claire Pirim, Ionut Topala, Characterization of interstellar carbon dust analogues synthesized by dielectric barrier discharge and evolution after irradiation with 3 MeV H+, *Monthly Notices of the Royal Astronomical Society*, 538(1), 266–279 (2025)
3. Felicia Gheorghiu, Nadejda Horchidan, Viorica Vasilache, Ionut Topala, Florin-Mihai Tufescu, Cristina Elena Ciomaga, Exploring multifunctional (Ba,Ca)(Ti,Zr)O₃ ceramics with porosity induced by multi-walled carbon nanotubes as a sacrificial template, *Ceramics International*, 51(5), 6406-6421 (2025)
4. I.C. Gerber, S. Simon, B. Tatarcan, G. Mihalache, I. Mihaila, I. Topala, Plasma treated liquid: reactive species and influence on saline stress in quinoa seeds, *Acta Physica Polonica A*, 146(4), 563-566 (2024)
5. Florin Bilea, Marco Garcia-Vaquero, Monica Magureanu, Ilarion Mihaila, Vida Mildažienė, Miran Mozetič, Joanna Pawłat, Gregor Primc, Nevena Puač, Eric Robert, Augusto Stancampiano, Ionut Topala & Rasa Žukienė, Non-Thermal Plasma as Environmentally- Friendly Technology for Agriculture: A Review and Roadmap, *Critical Reviews in Plant Sciences*, 43(6), 428-486 (2024)
6. Horchidan Nadejda, Mirela Airimioaei, Gabriel Ababei, George Stoian, Ionut Topala, Marius Dobromir, Maria Ignat, Cristina Elena Ciomaga, Mariana Neamtu, Novel piezoelectric xNF-(1-x)PZT materials for catalytic/photocatalytic removal of pollutants, *Surfaces and Interfaces*, 51, 104604 (2024)
7. Andrei Vasile Nastuta, Maria Butnaru, Byron Cheatham, Ramona Huzum, Vasile Tiron, Ionut Topala, Helium Plasma Effects on Polymer Surfaces: from Plasma Parameters and Surface Properties towards Bioengineering Applications, *Chinese Journal of Polymer Science*, 42, 1156-1166 (2024)
8. Andrei Vasile Nastuta, Mihai Asandulesa, Florica Doroftei, Ioan-Andrei Dascalu, Cristian-Dragos Varganici, Vasile Tiron, Ionut Topala, Atmospheric Pressure Plasma Jet Exposure of Polylactic Acid Surfaces for Better Adhesion: Plasma Parameters towards Polymer Properties, *Polymers* 16, 240 (2024)
9. Alexandru Bogdan Stache, Ilarion Mihăilă, Ioana Cristina Gerber, Loredana Mihaiela Dragoş, Cosmin Teodor Mihai, Iuliu Cristian Ivanov, Ionuţ Topală, Dragoş-Lucian Gorgan, Optimization of Indirect CAP Exposure as an Effective Osteosarcoma Cells Treatment with Cytotoxic Effects, *Applied Sciences*, 13(13), 7803 (2023)
10. Emma Bîrleanu, Ilarion Mihăilă, Ionut Topală, Cătălin Borcia, Gabriela Borcia, Adhesion Properties and Stability of Non-Polar Polymers Treated by Air Atmospheric-Pressure Plasma, *Polymers* 15, 2443 (2023)
11. Constantinos Lazarou, Charalambos Anastassiou, Ionut Topala, Alina Silvia Chiper, Ilarion Mihaila, Valentin Pohoata, George Elias Georghiou, The effect of Penning ionization reactions on the evolution of He with O₂ admixtures plasma jets, *J. Phys. D: Appl. Phys.*, 56, 065203 (2023)
12. Livia-Ioana Leti, Ioana Cristina Gerber, Ilarion Mihaila, Paula-Maria Galan, Silvia Strajeru, Denisa-Elena Petrescu, Mirela-Mihaela Cimpeanu, Ionut Topala, Dragos-Lucian Gorgan, The modulatory effects of non-thermal plasma on seed's morphology, germination and genetics – a review, *Plants*, 11(16), 2181 (2022)
13. Cristina Elena Ciomaga, Nadejda Horchidan, Leontin Padurariu, Radu Stefan Stirbu, Vasile Tiron, Florin Mihai Tufescu, Ionut Topala, Oana Condurache, Mihaela Botea, Ioana Pintilie, Lucian Pintilie, Aurelian Rotaru, Gabriel Caruntu, Liliana Mitoseriu, BaTiO₃ nanocubes-Gelatin composites for piezoelectric harvesting: Modeling and experimental study, *Ceramics International*, 48(18), 25880-25893 (2022)
14. Cosmin-Teodor Mihai, Ilarion Mihaila, Maria Antoanelia Pasare, Robert Mihai Pintilie, Mitica Ciorpac, Ionut Topala, Cold atmospheric plasma activated media improves paclitaxel efficacy on breast cancer cells in a combined treatment model, *Current Issues in Molecular Biology*, 44, 1995–2014, (2022)
15. Ion Sava, Iuliana Stoica, Ionut Topala, Ilarion Mihaila, Andreea Irina Barzi, Photodesign and fabrication of surface relief gratings on films of polyimide-based supramolecular systems obtained using host-guest strategy, *Polymer*, 249, 124829 (2022)

16. Bogdan Caba, Ioannis Gardikiotis, Ionut Topala, Ilarion Mihaila, Cosmin Teodor Mihai, Catalina Luca, Sorin Pasca, Ioana Cezara Caba, Gabriel Dimitriu, Bogdan Huzum, Ionela Lacramioara Serban, Cold Atmospheric Plasma, Platelet-Rich Plasma, and Nitric Oxide Synthesis Inhibitor: Effects Investigation on an Experimental Model on Rats, *Applied Sciences*, 12(2), 590 (2022)
17. Ion Sava, Iuliana Stoica, Ilarion Mihaila, Ionut Topala, Investigation of surface relief gratings on azo-copolyimide films using atomic force microscopy, *Revue Roumaine de Chimie*, 66(2), 193 - 198 (2021)
18. Ioana Cristina Gerber, Ilarion Mihaila, Valentin Pohoata, Ionut Topala, Evolution of Electrical and Optical Parameters of a Helium Plasma Jet in Interaction With Liquids, *IEEE Transactions On Plasma Science*, 49(2), 557 - 562 (2021)
19. Karolina Bujak, Ion Sava, Iuliana Stoica, Vasile Tiron, Ionut Topala, Rafał Węglowski, Ewa Schab-Balcerzak, Jolanta Konieczkowska, Photoinduced properties of "T-type" polyimides with azobenzene or azopyridine moieties, *European Polymer Journal* 126, 109563 (2020)
20. V. Chiriac, G. Bulai, L. Curecheriu, I. Topala, N. Dumitrascu, Synthesis and characterization of (co)polymeric films obtained under atmospheric plasma conditions, *Materials Letters*, 264, 127062 (2020)
21. Constantinos Lazarou, Alina Silvia Chiper, Charalambos Anastassiou, Ionut Topala, Ilarion Mihaila, Valentin Pohoata, George Elias Georgiou, Numerical simulation of the effect of water admixtures on the evolution of a helium/dry air discharge, *J. Phys. D: Appl. Phys.* 52 195203 (22pp) (2019)
22. Ion Sava, Iuliana Stoica, Ilarion Mihaila, Valentin Pohoata, Ionut Topala, George Stoian, Nicoleta Lupu, Nanoscale analysis of laser-induced surface relief gratings on azocopolyimide films before and after gold coating, *Polymer Testing* 72, 407–415 (2018)
23. Constantinos Lazarou, Charalambos Anastassiou, Ionut Topala, Alina Silvia Chiper, Ilarion Mihaila, Valentin Pohoata, George Elias Georgiou, 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)
24. Bogdan-George Rusu, Vladut Postolache, Irina-Gabriela Cara, Valentin Pohoata, Ilarion Mihaila, Ionut Topala, Gerard Jitareanu, Method of Fungal Wheat Seeds Disease Inhibition Using Direct Exposure to Air Cold Plasma, *Romanian Journal of Physics* 63, 905 (2018)
25. 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)
26. Roxana Jijie, Alexandre Barras, Teodora Teslaru, Ionut Topala, Valentin Pohoata, Marius Dobromir, Tetiana Dumych, Julie Boukaert, Sabine Szunerits, Nicoleta Dumitrascu, Rabah Boukherroub, Aqueous medium-induced micropore formation in plasma polymerized polystyrene: An effective route to inhibit bacteria adhesion, *Journal of Materials Chemistry B*, 6, 3674-3683 (2018)
27. A.V. Nastuta, V. Pohoata, I. Mihaila, I. Topala, Diagnosis of a short-pulse dielectric barrier discharge at atmospheric pressure in helium with hydrogen-methane admixtures, *Physics of Plasmas* 25, 043515 (2018)
28. 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)
29. A.V. Nastuta, I. Topala, V. Pohoata, I. Mihaila, C. Agheorghiesei, N. Dumitrascu, Atmospheric pressure plasma jets in inert gases: electrical, optical and mass spectrometry diagnosis, *Romanian Reports in Physics*, 69(1), 407, (2017)
30. Ilarion Mihaila, Valentin Pohoata, Roxana Jijie, Andrei Vasile Nastuta, Ioana Alexandra Rusu, Ionut Topala, Formation of positive ions in hydrocarbon containing dielectric barrier discharge plasmas, *Advances in Space Research*, 58(11), 2416–2423 (2016)
31. T. Teslaru, I. Topala, M. Dobromir, V. Pohoata, L. Curecheriu, N. Dumitrascu, Polythiophene films obtained by polymerization under atmospheric pressure plasma conditions, *Materials Chemistry and Physics*, 169, 120–127 (2016)
32. G. B. Rusu, I. Topala, C. Borcia, N. Dumitrascu, G. Borcia, Effects of Atmospheric-Pressure Plasma Treatment on the Processes Involved in Fabrics Dyeing, *Plasma Chemistry Plasma Processing*, 36, 341-354 (2016)
33. Karol Hensel, Katarina 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)
34. C. Lazarou, D. Koukounis, A.S. Chiper, C. Costin, I. Topala, G.E. Georgiou, Numerical modeling of the effect of the level of nitrogen impurities in a helium parallel plate dielectric barrier discharge, *Plasma Sources Science and Technology*, 24, 035012 (13pp) (2015)

35. Ionut Topala, Masaaki Nagatsu, Capillary plasma jet: A low volume plasma source for life science applications, *Applied Physics Letters*, 106, 054105 (2015)
36. Ion Sava, Ada Burescu, Iuliana Stoica, Valentina Musteata, Mariana Cristea, Ilarion Mihaila, Valentin Pohoata and Ionut Topala, Properties of some azo-copolyimide thin films used in the formation of photoinduced surface relief gratings, *RSC Advances*, 5, 10125-10133 (2015)
37. Mihai Asandulesa, Ionut Topala, Yves-Marie Legrand, Stephanie Roualdes, Vincent Rouessac, Valeria Harabagiu, Chemical Investigation on Various Aromatic Compounds Polymerization in low Pressure Helium Plasma, *Plasma Chemistry and Plasma Processing*, 34(5), 1219-1232 (2014)
38. 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)
39. 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)
40. 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)
41. 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)
42. Roxana Jijie, Cristina Luca, Valentin Pohoata, Ionut Topala, Effects of Atmospheric-Pressure Plasma Jet on Pepsin Structure and Function, *IEEE Transactions on Plasma Science*, 40(11), 2980 - 2985, (2012)
43. Ionut Topala, Nicoleta Dumitrascu, Dan-Gheorghe Dimitriu, Experimental and Theoretical Investigations of Dielectric-Barrier Plasma Jet in Helium, *IEEE Transactions on Plasma Science*, 40(11), 2811 - 2816, (2012)
44. Andrei V. Nastuta, Ionut Topala, Gheorghe Popa, ICCD Imaging Of Atmospheric Pressure Plasma Jet Behavior In Different Electrodes Configurations, *IEEE Transactions on Plasma Science*, 39(11), 2310 - 2311, (2011)
45. Jorge Gonzalez Vazquez, Mihai Asandulesa, Ionut Topala, Nicoleta Dumitrascu, Fast imaging study of polymerization plasmas at atmospheric pressure, *IEEE Transactions on Plasma Science*, 39(11), 2170 - 2171, (2011)
46. Ionut Topala, Nicoleta Dumitrascu, Evolution of bullets in helium atmospheric pressure plasma jet, *IEEE Transactions on Plasma Science*, 39(11), 2342 - 2343, (2011)
47. C. Grigoras, I. Topala, A.V. Nastuta, D. Jitaru, I. Florea, L. Badescu, D. Ungureanu, M. Badescu, N. Dumitrascu, Influence of atmospheric pressure plasma treatment on epithelial regeneration process, *Romanian Journal of Physics*, 56, 54-61 (2011)
48. 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)
49. 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)
50. Mihai Asandulesa, Ionut Topala, Nicoleta Dumitrascu, Effects of plasma treatments on the surface of wood samples, *Holzforschung*, 64(2), 223-227, (2010)
51. 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)
52. 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)
53. Ionut Topala, Nicoleta Dumitrascu, Gheorghe Popa, Jean Durand. A comparative study of plasma effects on the PET surfaces. *Revista de Chimie*, 59(11), 1263 – 1265, (2008)

54. A.V. Nastuta, G.B. Rusu, I. Topala, A.S. Chiper, G. Popa, Surface modifications of polymer induced by atmospheric DBD plasma in different configurations, *Journal of Optoelectronics and Advanced Materials* 10(8), 2038 - 2042, (2008)
55. Ionut Topala, Mihai Asandulesa, Nicoleta Dumitrascu, Gheorghe Popa, Jean Durand, Application of dielectric barrier discharge for plasma polymerization processes, *Journal of Optoelectronics and Advanced Materials* 10(8), 2028 - 2032, (2008)
56. Ionut Topala, Nicoleta Dumitrascu, Valentin Pohoata, Influence of plasma treatments on PET and PET+TiO₂ hemocompatibility, *Plasma Chemistry and Plasma Processing*, 28, 535–551 (2008)
57. Ionut Topala, Nicoleta Dumitrascu, Dynamics of the wetting process on dielectric barrier discharge (DBD) treated wood surfaces, *Journal of Adhesion Science and Technology*, 21(11), 1089 - 1096, (2007)
58. Stephanie Roualdes, Ionut Topala, Habiba Mahdjoub, Vincent Rouessac, Philippe Sistat, Jean Durand, Sulfonated polystyrene-type plasma-polymerized membranes for miniature direct methanol fuel cells, *Journal of Power Sources*, 158(2), 1270-1281, (2006)
59. Nicoleta Dumitrascu, Ionut Topala, Gheorghe Popa, Dielectric Barrier Discharge Technique in Improving the Wettability and Adhesion Properties of Polymer Surfaces, *IEEE Transaction on Plasma Science*, 33(5), 1710-1714, (2005).