


PERSONAL INFORMATION

Dan-Gheorghe DIMITRIU



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 [dimitriu@uaic.ro](mailto:dimitriu@uaic.ro)

Sex Male | Date of birth 10/01/1972 | Nationality Romanian

WORK EXPERIENCE

2023-present

**Professor**

“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd, 700506, Iasi, Romania, [www.uaic.ro](http://www.uaic.ro)

- Education and research
- Business or sector** Higher Education

2008-2023

**Associate Professor**

“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd, 700506, Iasi, Romania, [www.uaic.ro](http://www.uaic.ro)

- Education and research
- Business or sector** Higher Education

2003-2008

**Lecturer**

“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd, 700506, Iasi, Romania, [www.uaic.ro](http://www.uaic.ro)

- Education and research
- Business or sector** Higher Education

2002-2003

**Associate Lecturer**

“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd, 700506, Iasi, Romania, [www.uaic.ro](http://www.uaic.ro)

- Education and research
- Business or sector** Higher Education

EDUCATION AND TRAINING

2020

**Habilitation**

Ministry of Education and Research, OM 6287/22.12.2020

- Physics

2013

**Project manager**

S. C. Expert Aktiv Group S. R. L., Onesti, Romania

- Project management, risk management

8

1998-2002

**Master of Science in “Nonlinearity and Self-organization in Complex Systems”**

“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd, 700506, Iasi, Romania, [www.uaic.ro](http://www.uaic.ro)

- Physics of complex systems, self-organization, chaos

7

1996-2002

**PhD in Physics, with the distinction “Magna cum Laudae”**

“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd, 700506, Iasi, Romania, [www.uaic.ro](http://www.uaic.ro)

- Plasma physics

8

1995-1996

**Master of Science in “Plasma Physics and Spectroscopy”**

“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd, 700506, Iasi, Romania, [www.uaic.ro](http://www.uaic.ro)

7

- Plasma physics, spectroscopy

1990-1995 **Bachelor in Technical Physics**

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“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd, 700506, Iasi, Romania, [www.uaic.ro](http://www.uaic.ro)

- Physics

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
French	B2	B2	B1	B1	B1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user  
Common European Framework of Reference for Languages

Communication skills

- good communication skills gained through my experience as teacher working with students, as well as through communication of scientific studies to national and international conferences

Research domains

- Nonlinear phenomena in low-temperature plasma
  - self-organized structures in plasma
  - plasma instabilities
  - chaotic phenomena in plasma
  - collective interactions in plasma
  - plasma sources
- Partial ordered structures in liquids
  - solvatochromism
  - intermolecular interactions in liquids
  - molecular spectroscopy
  - liquid models
  - solvent empirical scales

Organisational / managerial skills

- research grant management (I coordinated, as director, 2 international (bilateral Romania-Austria) research grants and 6 national research grants);
- scientific conferences organization (I was member of the Organizing Committee of 3 national conferences and member of the Scientific Committee of other 3 national conferences);
- member of the Senate of “Alexandru Ioan Cuza” University of Iasi, member of the Ethics Committee of “Alexandru Ioan Cuza” University of Iasi, member of the Council of the Faculty of Physics, “Alexandru Ioan Cuza” University of Iasi, member of the Council of Physics Department, Faculty of Physics, “Alexandru Ioan Cuza” University of Iasi.

Job-related skills

- elaboration of new university courses and laboratory works for students;
- elaboration of documents for validation/re-validation of new licence and master programs;
- evaluation of PhD thesis as official referee or member of the support commission.

Computer skills

- advanced user of computers (Microsoft Office, CorelDraw, Adobe Acrobat, LaTeX, Origin, Spartan, Gaussian, specialized scientific software)

Driving licence

- B

## ADDITIONAL INFORMATION

Publications	Annex A - List of the main publications
Projects (as director)	Annex B - List of the research grants as coordinator
Conferences participation	<p><i>XXV Galyna Puchkovska International School Seminar "Spectroscopy of Molecules and Crystals" (XXV ISSSMC), Kyiv, Ukraine (2021); 13<sup>th</sup> Chaotic Modeling and Simulation International Conference (CHAOS 2020), Florence, Italy (2020); 34<sup>th</sup> International Conference on Phenomena in Ionized Gases (ICPIG), Sapporo, Japan (2019), 2<sup>nd</sup> Conference of the EPS Statistical and Nonlinear Physics Division "Statistical Physics of Complex Systems", Stockholm, Sweden (2019), 18<sup>th</sup> International Conference on Plasma Physics and Applications, Iasi, Romania (2019), Conference on Complex Systems (CCS), Thessaloniki, Greece (2018), 11<sup>th</sup> Chaotic Modeling and Simulation International Conference (CHAOS 2018), Rome, Italy (2018), 1<sup>st</sup> International Conference on Symmetry, Barcelona, Spain (2017), 6<sup>th</sup> Chaotic Modeling and Simulation International Conference (CHAOS 2013), Istanbul, Turkey (2013); Physics Conference TIM-12 and TIM-13, Timisoara, Romania (2012, 2013); 5<sup>th</sup> Chaotic Modeling and Simulation International Conference (CHAOS 2012), Athens, Greece (2012); 9<sup>th</sup> International Conference on Physics of Advanced Materials, Iasi, Romania (2012); 9<sup>th</sup> International Conference on Environmental Legislation, Safety Engineering and Disaster Management, Cluj-Napoca, Romania (2012); 5<sup>th</sup> International Workshop on Optoelectronic Techniques for Environmental Monitoring, Bucharest-Magurele, Romania (2011); International Balkan Workshop on Applied Physics, Constanta, Romania (2003, 2004, 2005, 2006, 2008, 2010); 15<sup>th</sup> International Conference on Plasma Physics and Applications, Iasi, Romania (2010); 11<sup>th</sup> Experimental Chaos and Complexity Conference, Lille, France (2010); 4<sup>th</sup> International Workshop on Optoelectronic Techniques for Environmental Monitoring, Cluj-Napoca, Romania (2010); International Workshop „50 Years Plasma Physics in Innsbruck”, Innsbruck, Austria (2009); 19<sup>th</sup> Europhysics Conference on Atomic and Molecular Physics of Ionized Gases, Granada, Spain (2008); 17<sup>th</sup> International Conference on Gas Discharge and Their Applications, Cardiff, UK (2008); Solvay Workshop "A Tribute to Professor Radu Balescu" – The Physics of Charged Particles: Radu Balescu's Life Passion, Brussels, Belgium (2008); 35<sup>th</sup> IEEE International Conference on Plasma Science, Karlsruhe, Germany (2008); International Conference "Chaos, Complexity and Transport: Theory and Applications", Marseille, France (2007); 34<sup>th</sup> EPS Conference on Plasma Physics, Warsaw, Poland (2007); PLASMA 2007 International Conference on Research and Applications of Plasmas, Greifswald, Germany (2007); International Conference on Fundamental and Applied Research in Physics, Iasi, Romania (2007); 16<sup>th</sup> Symposium on Applications of Plasma Processes, Podbanske, Slovakia (2007); 2<sup>nd</sup> International Symposium on Unconventional Plasmas, Eindhoven, Netherlands (2006); 9<sup>th</sup> International Symposium on Ball Lightning, Eindhoven, Netherlands (2006); 5<sup>th</sup> EUROMECH Nonlinear Dynamics Conference, Eindhoven, Netherlands (2005); 13<sup>th</sup> Conference on Plasma Physics and Applications, Iasi, Romania (2005); Workshop on Theoretical Plasma Physics, "Abdus Salam" International Centre for Theoretical Physics, Trieste, Italy (2004); 21<sup>st</sup> Symposium on Plasma Physics and Technology, Prague, Czech Republic (2004); 12<sup>th</sup> Conference on Plasma Physics and Applications, Iasi, Romania (2003); 16<sup>th</sup> European Conference on Atomic and Molecular Physics of Ionized Gases, Grenoble, France (2002); 29<sup>th</sup> EPS Conference on Plasma Physics and Controlled Fusion, Montreux, Switzerland (2002); 2<sup>nd</sup> Conference on Isotopic and Molecular Processes, Cluj-Napoca, Romania (2001); 11<sup>th</sup> Conference on Plasma Physics and Applications, Constanta, Romania (2001); 10<sup>th</sup> Conference on Plasma Physics and Applications, Iasi, Romania (1998);</i></p>
Research stages, summer schools	<ul style="list-style-type: none"> <li>• Invited Professor at the University of Innsbruck, Austria (2015), in the frame of ERASMUS Programme, teaching the course "Nonlinear Potential Structures in Plasma";</li> <li>• Research stages at the University of Innsbruck, Austria, Institute of Ion Physics and Applied Physics (2017, 2014, 2013, 2012, 2010, 2009, 2007, 2006, 2005, 2004, 2002, 2001, 2000, 1999) in the frame of different research grants or international programmes (SOCRATES, ERASMUS, CEEPUS);</li> <li>• Invited Professor by the University of Innsbruck, Austria (2011), teaching the course "Chaos and Self-organization in Plasma";</li> <li>• Research stages at the University of Sciences and Technologies Lille 2, France (2010, 2009, 2008);</li> <li>• Research stages at the Polytechnic University of Madrid, Spain, Plasma Physics Laboratory (2009, 2006);</li> <li>• Workshop and School "Physics and Chemistry of the Atmospheres: From Laboratory Experiments to Field Campaigns", Constanta, Romania (2008);</li> <li>• Invited Professor at the University of Innsbruck, Austria (2006), in the frame of ERASMUS Programme, teaching the courses "Labcourse in Plasma Diagnosis", "Complex Space Charge Structures in Plasma" and "Nonlinear Dynamics Techniques for Time Series Analysis";</li> </ul>

- Workshop and School “Physics and Chemistry of the Atmospheres: From Laboratory Experiments to Field Campaigns”, Iasi, Romania (2006);
- International Workshop and School “Towards Fusion Energy – Plasma Physics, Diagnostics, Spin-offs”, Kudowa Zdroj, Poland (2005);
- Autumn College on Plasma Physics, “Abdus Salam” International Centre for Theoretical Physics, Trieste, Italy (2005);
- International Workshop and School “Towards Fusion Energy – Plasma Physics, Diagnostics, Applications”, Kudowa Zdroj, Poland (2004);
- Autumn College on Plasma Physics “Long-Lived Structures and Self Organization in Plasma”, “Abdus Salam” International Centre for Theoretical Physics, Trieste, Italy (2003);
- Summer School on Plasma Physics and Applications, Iasi, Romania (2003);
- Romanian-French Summer School on Plasma Physics and Applications, Iasi, Romania (1995);
- Research stage at the University Paris-Sud XI, Orsay, France (2005), in the frame of TEMPUS Programme

**Peer review** Scientific Reports, Physics of Plasmas, Plasma Sources Science and Technology, Plasma Physics and Controlled Fusion, Vacuum, Optics Express, New Journal of Physics, Europhysics Letters, Nonlinear Dynamics, Physics Letters A, Physica Scripta, Chaos Solitons & Fractals, Spectrochimica Acta A: Molecular and Biomolecular Spectroscopy, Journal of Molecular Structure, Journal of Photochemistry and Photobiology A: Chemistry, Entropy, RSC Advances, Physica A: Statistical Mechanics and Its Applications, IEEE Transactions on Plasma Science, IEEE Access, Applied Sciences, Sensors, Polymer Engineering & Science, Polymers for Advanced Technologies, Measurement Science and Technology, Meteorology and Atmospheric Physics, Photochem, Czechoslovak Journal of Physics, Acta Technica, Revista de Chimie

**Memberships** European Physical Society (from 2002), Romanian Physical Society (from 2002), American Physical Society (from 2007), IEEE Nuclear and Plasma Science Society (from 2007), Complex Systems Society (former European Complex Systems Society) (from 2007), The New York Academy of Sciences (from 2011)

## Annex A

### List of the main scientific publications

#### A. Books and chapters

1. M. Agop, A. Zala, D. Dimitriu, S. Irimiciuc, A. Gavrilut, C. M. Rusu, G. Crumpei, L. Eva – Statistical Methods and Nonlinear Dynamics for Analyzing Brain Activity. Theoretical and Experimental Aspects, in *13th Chaotic modeling and Simulation International Conference*, Eds. C. H. Skiadas, Y. Dimotikalis, Springer Nature Switzerland AG, Cham, 2021, ISBN 978-3-030-70794-1;
2. D. G. Dimitriu, M. Agop – Analysis of Low-Frequency Instabilities in Low-Temperature Magnetized Plasma, Chapter 5 in *Fractional Dynamics, Anomalous Transport and Plasma Science*, Ed. C. H. Skiadas, Springer Nature Switzerland AG, Cham, 2018, ISBN 978-3-030-04482-4;
3. S. Irimiciuc, D. G. Dimitriu, M. Agop – Theoretical Modeling of the Interaction Between Two Complex Space Charge Structures in Low-Temperature Plasma, Chapter 6 in *Fractional Dynamics, Anomalous Transport and Plasma Science*, Ed. C. H. Skiadas, Springer Nature Switzerland AG, Cham, 2018, ISBN 978-3-030-04482-4;
4. D. O. Dorohoi, D. G. Dimitriu – Spectral Insights on Intermolecular Interactions in Solutions of Some Zwitterionic Compounds, Chapter 3 in *Electromagnetic Radiation in Analysis and Design of Organic Materials – Electronic and Biotechnology*, eds. D. O. Dorohoi, A. I. Barzic and M. Aflori, CRC Press, Taylor & Francis Group, 2017, ISBN 978-1-4987-7580-9, CAT# K29698;
5. D. G. Dimitriu, M. Agop – Chaos in Plasma Physics, Chapter 19 in *Handbook of Applications in Chaos Theory*, eds. C. H. Skiadas and C. Skiadas, CRC Press, Taylor & Francis Group, 2016, ISBN 978-1-4665-9043-4, CAT# K20464;
6. D. G. Dimitriu, S. Chiriac – Intermittency scenario of transition to chaos in plasma in connection with the nonlinear dynamics of a double layer structure, in *Chaos, Complexity and Transport – Theory and Applications*, eds. C. Chandre, X. Leoncini and G. Zaslavsky, World Scientific, 2008, ISBN 978-981-281-879-9;
7. D. G. Dimitriu – Nuclear magnetic resonance in medicine and biology – course notes (in Romanian), PIM Publishing House, Iasi, 2008, ISBN 9789737168860;
8. G. Strat, M. Strat, S. Gurlui, C. Focsa, D. G. Dimitriu – Self-organization phenomena in polymer and plasma structures, in *Self-organization in nanomaterials*, eds. P. Boolchand and G. Lucovsky, INOE Publishing House, Bucuresti, 2008, ISBN 9789738810907;

9. M. Aflori, D. G. Dimitriu – Time series analysis using nonlinear dynamics methods (in Romanian), in *Physics for the students of doctoral schools, vol. I*, eds. L. Dumitrascu, I. Dumitrascu, D. O. Dorohoi, D. G. Dimitriu, G. Apreotesei and M. Aflori, Tehnopress Publishing House, Iasi, 2006, ISBN 9789737023896;
10. D. G. Dimitriu – Electrostatic instabilities in the Q machine plasma (in Romanian), Demiurg Publishing House, Iasi, 2006, ISBN 9737603273;
11. S. Gurlui, D. G. Dimitriu – Double layers in plasma (in Romanian), Tehnopress Publishing House, Iasi, 2005, ISBN 973702155X;

## B. Articles indexed by ISI Web of Science

1. V. Ghizdovot, L. Dobreci, A. C. Slicaru, M.-A. Cristuta, D. G. Dimitriu, C. Stefanescu, D. Vasincu, R.-V. Ababei, C. Volovat, M. Agop, L. Eva, S. R. Volovat – Analysis of epileptic seizures stages through attractor dynamics, *BRAIN. Broad Research in Artificial Intelligence and Neuroscience* **15** (2024) 159;
2. A. Cocean, G. Cocean, C. Postolachi, S. Garofalide, D. A. Pricop, B. S. Munteanu, G. Bulai, N. Cimpoesu, I. Motrescu, V. Pelin, R. V. Ababei, D. G. Dimitriu, I. Cocean, S. Gurlui – High energy pulsed laser beam to produce a thin layer of crystalline silver without heating the deposition substrate and its catalytic effects, *Quantum Beam Science* **8** (2024) 16;
3. C. Cheptea, A. Zara, E. Ambrosi, A. C. Morosanu, M. Diaconu, M. Miron, D. O. Dorohoi, D. G. Dimitriu – On the solvatochromism of fluorescein sodium, *Symmetry* **16** (2024) 673;
4. A. Zara, R. M. Albu, I. Stoica, A. I. Barzic, D. G. Dimitriu, D. O. Dorohoi – New insights on solvent-induced changes in refractivity and specific rotation of poly(propylene oxide) systems extracted from channeled spectra, *International Journal of Molecular Sciences* **25** (2024) 4682;
5. M. I. Avadanei, D. G. Dimitriu, D. O. Dorohoi – Optical anisotropy of polyethylene terephthalate films characterized by spectral means, *Polymers* **16** (2024) 850;
6. A. I. Barzic, R. M. Albu, I. Stoica, C. D. Nechifor, M. I. Avadanei, D. G. Dimitriu, D. O. Dorohoi – Birefringent polyvinyl alcohol layers as retardation components for display devices, *Polymers for Advanced Technologies* **35** (1) (2024) e6196;
7. D. O. Dorohoi, S. Gosav, A. C. Morosanu, D. G. Dimitriu, G. Apreotesei, T. Gosav – Molecular descriptors – spectral property relations for characterizing molecular interactions in binary and ternary solutions. Excited state dipole moment estimation, *Symmetry* **15** (2023) 2075;
8. G. Cocean, A. Cocean, S. Garofalide, V. Pelin, B. S. Munteanu, D. A. Pricop, I. Motrescu, D. G. Dimitriu, I. Cocean, S. Gurlui – Dual-pulsed laser ablation of oyster shell producing novel thin layers deposited to *Saccharomyces cerevisiae*, *Polymers* **15** (2023) 3953;
9. D. O. Dorohoi, M. Postolache, C. D. Nechifor, D. G. Dimitriu, R. M. Albu, I. Stoica, A. I. Barzic – Review on optical methods used to characterize the linear birefringence of polymer materials for various applications, *Molecules* **28** (2023) 2955;
10. D. O. Dorohoi, D. E. Creanga, D. G. Dimitriu – Intermolecular interactions in binary and ternary solutions of a zwitterionic compound studied by solvatochromism, *Symmetry* **15** (2023) 563;
11. D. A. M. Androne, C. Nechifor, M. Postolache, D. G. Dimitriu, D. O. Dorohoi – Linear birefringence of uniaxial anisotropic inorganic crystals measured by ellipsometric means, *University Politehnica of Bucharest Scientific Bulletin Series A – Applied Mathematics and Physics* **85** (2023) 199-212;
12. C. M. Pavel, E. Ambrosi, D. G. Dimitriu, D. O. Dorohoi – Complex formation and microheterogeneity in water-alcohol binary mixtures investigated by solvatochromic study, *European Physical Journal – Special Topics* **223** (2023) 215-225;
13. D. G. Dimitriu, D. O. Dorohoi – Drug and temperature influence on the gel state stability of the phospholipid membranes, *European Physical Journal – Special Topics* **223** (2023) 227-233;
14. C. Cheptea, A. Zara, D. G. Dimitriu, V. Sunel, D. O. Dorohoi, T. A. Cigu – New semisynthetic penicillins obtained by coupling of the 6-aminopenicillanic acid with 5-mercapto-1,2,4-triazoles-3,4-disubstituted, *International Journal of Molecular Sciences* **24** (2023) 1497;
15. N. Melniciuc Puica, D. G. Dimitriu, G. Apreotesei, A. C. Morosanu, D. O. Dorohoi – Computational study of some 4'-aryl-1,2,4-triazol-1-ium-4-R<sub>2</sub>-phenacylid derivatives in vacuum and dimethylformamide, *Symmetry* **14** (2022) 2099;
16. S. A. Irimiciuc, C. T. Konrad-Soare, D. G. Dimitriu, C. Ionita, R. W. Schrittwieser – On the interactions between three fireballs in low-temperature plasma, *Plasma Sources Science and Technology* **31** (2022) 084005;
17. D. Babusca, C. A. Morosanu, D. G. Dimitriu, C. Cheptea, D. O. Dorohoi – Combined solvatochromism and quantum mechanical computations in study regarding the solute-solvent interactions in solutions of some azo-derivatives, *Molecular Crystals and Liquid Crystals* **747** (2022) 103-119;
18. C. Cheptea, V. Sunel, C. Popovici, I. Dumitrascu, D. G. Dimitriu, D. O. Dorohoi – Synthesis and quantum mechanical characterization of three new 1-(5-nitro-benzimidazole-2'-yl-sulfonyl-acetyl)-4-aryl-thiosemicarbazide with biological potential, *Molecular Crystals and Liquid Crystals* **747** (2022) 72-80;
19. A. C. Benchea, D. G. Dimitriu, D. O. Dorohoi, I. Hurjui, L. Hurjui – Investigation of 8-hydroxyquinoline by quantum-mechanical modelling and visible absorption spectroscopy, *Molecular Crystals and Liquid Crystals* **748** (2022) 99-111;
20. M. Dimitriu, D. Babusca, E. Angheluta, D. O. Dorohoi, D. G. Dimitriu – Spectral methods to estimate the strength of intermolecular interactions in liquids, *Molecular Crystals and Liquid Crystals* **747** (2022) 91-102;
21. D. O. Dorohoi, D. G. Dimitriu – Binary and ternary solutions of zwitterionic compounds: theoretical and spectral studies, *Molecular Crystals and Liquid Crystals* **748** (2022) 36-58;
22. N. Melniciuc-Puica, D. G. Dimitriu, V. Closca, L. Dumitrascu, D. O. Dorohoi – 1,2,4-triazol-1-ium-p-chloro-phenacylids in hydroxyl binary solvent mixtures. Computational and solvatochromic study, *Molecular Crystals and Liquid Crystals* **748** (2022) 112-121;
23. M. Postolache, D. G. Dimitriu, C. D. Nechifor, S. Condurache Bota, V. Closca, D. O. Dorohoi – Birefringence of thin uniaxial polymer films estimated using the light polarization ellipse, *Polymers* **14** (2022) 1063;
24. C. Popovici, C. M. Pavel, V. Sunel, C. Cheptea, D. G. Dimitriu, D. O. Dorohoi, D. David, V. Closca, M. Popa – Optimized synthesis of new thiosemicarbazide derivatives with tuberculostatic activity, *International Journal of Molecular Sciences* **22** (2021) 12139;



25. D. O. Dorohoi, D. G. Dimitriu, A. C. Morosanu, N. Puica-Melniciuc, I. Hurjui, M. Miron, G. G. Mariciuc, V. Closca, C. Cheptea – Some aryl-1,2,4-triazol-1-ium phenacylids in binary hydroxyl solvent mixtures. Computational and spectral study, *Symmetry* **13** (2021) 1656;
26. D. O. Dorohoi, D. G. Dimitriu, M. M. Dulcescu-Oprea, A. C. Morosanu, N. Puica-Melniciuc, E. Ardelean, A. Gritco-Todirascu, C. Cheptea – Solvatochromic study of two carbanion monosubstituted 4-*tolyl*-1,2,4-triazol-1-ium phenacylids in binary hydroxylsolvent mixtures, *Molecules* **26** (2021) 3910;
27. C. T. Konrad-Soare, F. Enescu, D. G. Dimitriu, M. Dobromir, E. G. Teodorescu-Soare, F. Mazzanti, S. A. Irimiciuc, C. Ionita, R. Schrittwieser – Concentric double hollow grid cathode discharges. Spectral investigationa and phenomenological approach, *Plasma Sources Science and Technology* **30** (2021) 085006;
28. S. A. Irimiciuc, A. Zala, D. Dimitriu, L. M. Himiniuc, M. Agop, B. F. Toma, L. G. Gavril, D. Vasincu, L. Eva – Novel approach for EEG signal analysis in a multifractal paradigm of motions. Epileptic and eclamptic seizures as scale transitions, *Symmetry* **13** (2021) 1024;
29. A. Zala, D. Dimitriu, M. Agop, D. N. Tesloianu, M. L. Cobzeanu, B. M. Cobzeanu, M. C. Rusu, V. Ghizdovat – Evaluating atrial fibrillation through strange attractors, *General Physiology and Biophysics* **40** (2021) 377-386;
30. C. Cheptea, V. Sunel, A. C. Morosanu, D. G. Dimitriu, M. M. Dulcescu-Oprea, M. D. Angheluta, M. Miron, C. D. Nechifor, D. O. Dorohoi, R. N. Malancus – Optimized synthesis of new N-mustards based on 2-mercaptobenzoxazole derivatives with antitumor activity, *Biomedicines* **9** (5) (2021) 476;
31. M. Agop, S. Irimiciuc, D. Dimitriu, C. M. Rusu, A. Zala, L. Dobreci, A. V. Cotirlet, T. C. Petrescu, V. Ghizdovat, L. Eva, D. Vasincu – Novel approach for EKG signals analysis based on Markovian and non-Markovian fractalization type in scale relativity theory, *Symmetry* **13** (2021) 456;
32. M. M. Dulcescu-Oprea, A. C. Morosanu, D. G. Dimitriu, A. Gritco-Todirascu, D. O. Dorohoi, C. Cheptea – Solvatochromic study of pyridinium-acetyl-benzoyl methylid (PABM) in ternary protic solutions, *Journal of Molecular Structure* **1227** (2021) 129539;
33. D. O. Dorohoi, D. E. Creanga, D. G. Dimitriu, A. C. Morosanu, A. Gritco-Todirascu, G. G. Mariciuc, N. Puica Melniciuc, E. Ardelean, C. Cheptea – Computational and spectral means for characterizing intermolecular interactions in solutions and for estimating excited state dipole moment of solute, *Symmetry* **12** (2020) 1299;
34. D. Babusca, A. C. Morosanu, D. G. Dimitriu, D. O. Dorohoi, C. Cheptea – Spectroscopic and quantum-chemical study of molecular interactions of iso-quinolinium ylids in polar solutions, *Molecular Crystals and Liquid Crystals* **698** (2020) 87-97;
35. M. Postolache, L. M. Ivan, N. Puica-Melniciuc, G. G. Mariciuc, D. G. Dimitriu, D. O. Dorohoi – Birefringence of binary liquid crystalline mixtures of MBBA and PPMAECOBBA in TCM, interferometric assessment, *Molecular Crystals and Liquid Crystals* **698** (2020) 78-86;
36. L. M. Ivan, D. G. Dimitriu, A. Gritco-Todirascu, A. C. Morosanu, D. O. Dorohoi, C. Cheptea – Excited state dipole moment of two pyridazinium-p-nitro-phenacylids estimated from solvatochromic study, *Spectroscopy Letters* **53** (1) (2020) 1-11;
37. A. C. Luca, A. C. Morosanu, I. Macovei, D. G. Dimitriu, D. O. Dorohoi, I. S. Stratulat – Variational method for estimating the dipole moment in the second excited state of fluorescein molecule from its electronic UV absorption spectra, *Revista de Chimie* **70** (10) (2019) 3538-3544;
38. I. S. Stratulat, A. Scripa (Tudose), A. I. Barzic, D. G. Dimitriu, D. O. Dorohoi, A. C. Luca – Dispersion of nicotine circular birefringence, *Revista de Chimie* **70** (9) (2019) 3281-3283;
39. C. T. Teodorescu-Soare, S. A. Irimiciuc, C. Ionita, D. G. Dimitriu, B. Hodoroaba, T. O'Hara, O. Vasiloviciu, L. Amarandi, R. W. Schrittwieser – Concentric double hollow grid cathode discharges, *International Journal of Mass Spectrometry* **436** (2019) 83-90;
40. A. C. Morosanu, D. G. Dimitriu, D. O. Dorohoi – Excited state dipole moment of the fluorescein molecule estimated from electronic absorption spectra, *Journal of Molecular Structure* **1180** (2019) 723-732;
41. D. Babusca, A. C. Morosanu, A. C. Benchea, D. G. Dimitriu, D. O. Dorohoi – Spectral and quantum mechanical study of some azo-derivatives, *Journal of Molecular Liquids* **269** (2018) 940-946;
42. D. A. M. Androne, D. O. Dorohoi, D. G. Dimitriu, H. U. Kasper – Optical and chemical study of quartz from granitic pegmatites, *Revista de Chimie* **69** (2018) 1846-1850;
43. V. B. Rusyn, L. Pribylova, D. G. Dimitriu – Control of the modified chaotic Chua's circuit using threshold method, *Visnik NTU KPI Seria – Radiotekhnika Radioaparobuduvannia (Bulletin of National Technical University of Ukraine "Kyiv Polytechnic Institute" Seria Radiotechnique. Radioapparatus Building)* **75** (2018) 61-65;
44. A. C. Benchea, D. Babusca, A. C. Morosanu, D. G. Dimitriu, D. O. Dorohoi – Spectral study of Rhodamine dyes in binary solutions, *Journal of Molecular Structure* **1140** (2017) 71-76;
45. A. E. Scripa (Tudose), D. G. Dimitriu, D. O. Dorohoi – Linear birefringence of polymer foils determined by optical means, *Journal of Molecular Structure* **1140** (2017) 67-70;
46. A. C. Morosanu, A. C. Benchea, D. Babusca, D. G. Dimitriu, D. O. Dorohoi – Quantum mechanical and solvatochromic characterization of quercetin, *Analytical Letters* **50** (2017) 2725-2739;
47. A. C. Benchea, D. Babusca, C. Podlipnik, D. G. Dimitriu – Solvatochromic and quantum-mechanical characterization of Methyl Red, *Analytical Letters* **50** (2017) 2711-2724;
48. D. Babusca, A. C. Benchea, D. G. Dimitriu, D. O. Dorohoi – Spectral and quantum mechanical characterization of 3-(2-Benzothiazolyl)-7-(Diethylamino) Coumarin (Coumarin 6) in binary solutions, *Analytical Letters* **50** (2017) 2740-2754;
49. R. W. Schrittwieser, C. Ionita, C. T. Teodorescu-Soare, O. Vasilovici, S. Gurlui, S. A. Irimiciuc, D. G. Dimitriu – Spectral and electrical diagnosis of complex space-charge structures excited by a spherical grid with orifice, *Physica Scripta* **92** (2017) 044001;
50. A. C. Benchea, D. Babusca, D. G. Dimitriu, D. O. Dorohoi – Quantum-mechanical study and spectral analysis of some derivatives of Rhodamine in solutions, *Spectrochimica Acta A* **172** (2017) 91-99;
51. M. Strat, E. Buruiana, D. Dumitriu, A. V. Sandu, S. Gurlui – Photophysical and photochemical properties of polyurethane coumarin studied by means of electronic spectra, *Revista de Chimie* **68** (2017) 1568-1572;
52. A. E. Scripa (Tudose), D. G. Dimitriu, D. O. Dorohoi – Dispersion of the visible rotatory power for aqueous glucose solutions, *University Politehnica of Bucharest Scientific Bulletin Series A – Applied Mathematics and Physics* **79** (2017) 307-313;
53. M. Gaina, A. C. Benchea, C. Podlipnik, D. G. Dimitriu – Quantum-mechanical characterization and spectral study of curcumin, *University Politehnica of Bucharest Scientific Bulletin Series B – Chemistry and Materials Science* **79** (2017) 133-142;

54. D. Babusca, A. C. Benchea, D. G. Dimitriu, D. O. Dorohoi – Solvatochromic characterization of Sudan derivatives in binary and ternary solutions, *Analytical Letters* **49 (16)** (2016) 2615-2626;
55. A. C. Benchea, D. Babusca, D. G. Dimitriu, D. O. Dorohoi – Quantum mechanical and absorption spectral characterization of Rhodamine B in ternary solution, *Analytical Letters* **49 (16)** (2016) 2606-2614;
56. C. T. Teodorescu-Soare, D. G. Dimitriu, C. Ionita, R. W. Schrittwieser – Experimental investigations of the nonlinear dynamics of a complex space-charge configuration inside and around a grid cathode with hole, *Physica Scripta* **91** (2016) 034002;
57. D. G. Dimitriu, S. A. Irimiciuc, S. Popescu, M. Agop, C. Ionita, R. W. Schrittwieser – On the interaction between two fireballs in low-temperature plasma, *Physics of Plasmas* **22** (2015) 113511;
58. D. O. Dorohoi, D. G. Dimitriu, I. Dumitrascu, C. B. Zelinschi, I. Breaban – Interferential method to determine the optical rotatory dispersion of crystalline layers, *U.P.B. Scientific Bulletin A* **77** (2015) 253-260;
59. V. Nedeff, G. Lazar, M. Agop, L. Eva, L. Ochiuz, D. Dimitriu, L. Vrajitoriu, C. Popa – Solid components separation from heterogeneous mixtures through turbulence control, *Powder Technology* **284** (2015) 170-186;
60. A. I. Barzic, D. G. Dimitriu, D. O. Dorohoi – Optical rotatory dispersion of Poly(propylene oxide) in Benzene solution determined from channelled spectra, *International Journal of Polymer Analysis and Characterization* **20** (2015) 565-571;
61. A. Barzic, D. Dimitriu, D. Dorohoi – New method for determining the optical rotatory dispersion of hydroxypropyl cellulose polymer solutions in water, *Polymer Engineering & Science* **55** (2015) 1077-1081;
62. S. A. Irimiciuc, O. Vasilovici, D. G. Dimitriu – Chua's circuit: control and synchronization, *International Journal of Bifurcation and Chaos* **25** (2015) 1550050;
63. I. A. Cosutchi, D. G. Dimitriu, C. B. Zelinschi, I. Breaban, D. O. Dorohoi – Optical activity of transparent polymer layers characterized by spectral means, *Journal of Molecular Structure* **1090** (2015) 39-43;
64. D. G. Dimitriu, D. O. Dorohoi – New method to determine the optical rotatory dispersion of inorganic crystals applied to some samples of Carpathian Quartz, *Spectrochimica Acta A* **131** (2014) 674-677;
65. M. Agop, D. G. Dimitriu, L. Vrajitoriu, M. Boicu – Order to chaos transition in plasma via non-differentiability. Experimental and theoretical investigations, *Journal of the Physical Society of Japan* **83** (2014) 054501 1-11;
66. S. Gurlui, O. Niculescu, D. G. Dimitriu, C. Ionita, R. W. Schrittwieser – Elementary processes in the dynamics of two simultaneously excited fireballs in plasma, *International Journal of Mass Spectrometry* **365-366** (2014) 42-47;
67. D. G. Dimitriu, M. Aflori, L. M. Ivan, V. Radu, E. Poll, M. Agop – Experimental and theoretical investigations of plasma multiple double layers and their evolution to chaos, *Plasma Sources Science and Technology* **22** (2013) 035007 1-11;
68. M. Agop, D. G. Dimitriu, O. Niculescu, E. Poll, V. Radu – Experimental and theoretical evidence of the chaotic dynamics of complex structures, *Physica Scripta* **87** (2013) 045501 1-13;
69. M. Aflori, M. Drobota, D. G. Dimitriu, I. Stoica, B. Simionescu, V. Harabagiu – Collagen immobilization on polyethylene terephthalate surface after helium plasma treatment, *Materials Science and Engineering B* **178(19)** (2013) 1303-1310;
70. D. O. Dorohoi, D. G. Dimitriu, M. Dimitriu, V. Closca – Specific interactions in N-ylid solutions, studied by nuclear magnetic resonance and electronic absorption spectroscopy, *Journal of Molecular Structure* **1044** (2013) 79-86;
71. M. Drobota, D. G. Dimitriu, B. Simionescu, I. Titorencu, M. Olariu, M. Aflori – Cytocompatibility of PET films after DC helium plasma treatments and collagen immobilization, *Revista de Chimie* **64(7)** (2013) 761-765;
72. F. Unga, M. M. Cazacu, A. Timofte, D. Bostan, A. Mortier, D. G. Dimitriu, S. Gurlui, P. Goloub – Study of the tropospheric aerosol types over Iasi, Romania, during summer of 2012, *Environmental Engineering and Management Journal* **12(2)** (2013) 297-303;
73. M. Agop, P. Nica, O. Niculescu, D. G. Dimitriu – Experimental and theoretical investigations of the negative differential resistance in a discharge plasma, *Journal of the Physical Society of Japan* **81** (2012) 064502 1-5;
74. I. Topala, N. Dumitrascu, D. G. Dimitriu – Experimental and theoretical investigations of dielectric-barrier plasma jet in helium, *IEEE Transactions on Plasma Science* **40(11)** Part 1 (2012) 2811-2816;
75. M. M. Cazacu, A. Timofte, C. Talianu, D. Nicolae, M. N. Danila, F. Unga, D. G. Dimitriu, S. Gurlui – Grímsvötn Volcano: atmospheric volcanic ash cloud investigations, modelling-forecast and experimental environmental approach upon the Romanian area, *Journal of Optoelectronics and Advanced Materials* **14(5-6)** (2012) 517-522;
76. D. G. Dimitriu, M. Aflori, L. M. Ivan, M. Agop – Experimental and modeling results on multiple double layers in low-temperature discharge plasma, *IEEE Transactions on Plasma Science* **39(11)** (2011) 2316-2317;
77. D. G. Dimitriu, C. Ionita, R. Schrittwieser – Nonlinear effects related to the simultaneous excitation of three instabilities in magnetized plasma, *Contributions to Plasma Physics* **51 (6)** (2011) 554-559;
78. C. Stan, C. P. Cristescu, D. G. Dimitriu – Multifractal analysis of intermittency in a discharge plasma, *Romanian Journal of Physics* **56 (Suppl.)** (2011) 79-82;
79. A. Timofte, M. M. Cazacu, R. Radulescu, L. Belegante, D. G. Dimitriu, S. Gurlui – Romanian LIDAR investigation of the Eyjafjallajökull volcanic ash, *Environmental Engineering and Management Journal* **10(1)** (2011) 91-97;
80. M. M. Cazacu, A. Timofte, I. Balin, D. G. Dimitriu, S. Gurlui – Complementary atmospheric urban pollution studies in the north-east region of Romania, Iasi county, *Environmental Engineering and Management Journal* **10(1)** (2011) 139-145;
81. C. Stan, C. P. Cristescu, D. G. Dimitriu – Analysis of the intermittent behavior in a low-temperature discharge plasma by recurrence plot quantification, *Physics of Plasmas* **17(4)** (2010) 042115 1-6;
82. O. Niculescu, D. G. Dimitriu, V. P. Paun, P. D. Matasaru, D. Scurtu, M. Agop – Experimental and theoretical investigations of a plasma fireball dynamics, *Physics of Plasmas* **17(4)** (2010) 042305 1-10;
83. S. Gurlui, D. G. Dimitriu, C. Ionita, R. W. Schrittwieser – Spectral investigation of a complex space charge structure in plasma, *Romanian Journal of Physics* **54(7-8)** (2009) 705-710;
84. C. Stan, C. P. Cristescu, S. Chiriac, D. G. Dimitriu – Noise induced change in the dynamics of anodic double layers, *Romanian Journal of Physics* **54(7-8)** (2009) 699-704;
85. O. Niculescu, D. G. Dimitriu – On the generation of stable complex oscillations in low-temperature plasma, *Romanian Journal of Physics* **54(5-6)** (2009) 577-584;

86. L. M. Ivan, M. Aflori, G. Amarandei, D. G. Dimitriu – Simultaneous excitation of concentric and nonconcentric multiple double layers in plasma, *IEEE Transactions on Plasma Science* **36(4)** (2008) 1396-1397;
87. L. M. Ivan, D. G. Dimitriu, M. Sanduloviciu, O. Niculescu – On the complex self-organized systems created in laboratory, *Journal of Optoelectronics and Advanced Materials* **10(8)** (2008) 1950-1953;
88. M. Mihai-Plugaru, L. M. Ivan, D. G. Dimitriu – Experimental investigation of a firerod in weakly magnetized diffusion plasma, *Romanian Journal of Physics* **53** (1-2) (2008) 325-329;
89. L. M. Ivan, S. A. Chiriac, G. Amarandei, D. G. Dimitriu – Experimental basis of a common physical mechanism for the concentric and non-concentric multiple double layers in plasma, *Romanian Journal of Physics* **53** (1-2) (2008) 317-324;
90. G. Amarandei, D. G. Dimitriu, A. K. Sarma, P. C. Balan, T. Klinger, O. Grulke, C. Ionita, R. Schrittwieser – Studies on the suitable materials for a laser-heated electron-emissive plasma probe, *Romanian Journal of Physics* **53** (1-2) (2008) 311-316;
91. S. Chiriac, L. M. Ivan, D. G. Dimitriu – Intermittency scenario of transition to chaos in plasma related to the non-concentric multiple double layers, *Romanian Journal of Physics* **53** (1-2) (2008) 303-309;
92. M. Dimitriu, D. G. Dimitriu, D. O. Dorohoi – Supply of the spectral shifts of each type of intermolecular interactions in binary solutions, *Optoelectronics and Advanced Materials – Rapid Communications* **2(12)** (2008) 867-870;
93. M. Aflori, D. O. Dorohoi, D. G. Dimitriu – Spectrophotometric measurements in an rf capacitively-coupled oxygen discharge, *Optoelectronics and Advanced Materials – Rapid Communications* **2(8)** (2008) 478-481;
94. S. A. Chiriac, D. G. Dimitriu, M. Sanduloviciu – Type I intermittency related to the spatio-temporal dynamics of double layers and ion-acoustic instabilities in plasma, *Physics of Plasmas* **14** (7) (2007) 072309 1-5;
95. D. G. Dimitriu, M. Aflori, L. M. Ivan, C. Ionita, R. Schrittwieser – Common physical mechanism for concentric and non-concentric multiple double layers in plasma, *Plasma Physics and Controlled Fusion* **49** (3) (2007) 237-248;
96. C. Ionita, D. G. Dimitriu, R. W. Schrittwieser – Complex space charge structures in laboratory and natural plasmas, *Journal of Optoelectronics and Advanced Materials* **9** (9) (2007) 2954-2959;
97. D. G. Dimitriu, E. Lozneanu, M. Sanduloviciu – Plasma experiments with relevance for nano-science, *Journal of Optoelectronics and Advanced Materials* **8** (3) (2006) 967-970;
98. M. Mihai-Plugaru, L. M. Ivan, D. G. Dimitriu – Space charge configuration formed in weakly magnetized diffusion plasma, *Journal of Optoelectronics and Advanced Materials* **8** (1) (2006) 156-159;
99. S. Chiriac, M. Aflori, D. G. Dimitriu – Investigation of the bistable behaviour of multiple anodic structures in dc discharge plasma, *Journal of Optoelectronics and Advanced Materials* **8** (1) (2006) 135-138;
100. D. G. Dimitriu – Plasma fusion torus as a complex space charge structure, *Journal of Optoelectronics and Advanced Materials* **8** (1) (2006) 128-131;
101. M. Aflori, G. Amarandei, L. M. Ivan, D. G. Dimitriu, M. Sanduloviciu – Experimental observation of multiple double layers structures in plasma. Part I: Concentric multiple double layers, *IEEE Transactions on Plasma Science* **33** (2) (2005) 542-543;
102. L. M. Ivan, G. Amarandei, M. Aflori, M. Mihai-Plugaru, C. Gaman, D. G. Dimitriu, M. Sanduloviciu – Experimental observation of multiple double layers structures in plasma. Part II: Non-concentric multiple double layers, *IEEE Transactions on Plasma Science* **33** (2) (2005) 544-545;
103. L. M. Ivan, G. Amarandei, M. Aflori, M. Mihai-Plugaru, D. G. Dimitriu, C. Ionita, R. Schrittwieser – Physical processes at the origin of the appearance and dynamics of multiple double layers, *Acta Physica Slovaca* **55** (6) (2005) 501-506;
104. M. Aflori, G. Amarandei, L. M. Ivan, D. G. Dimitriu, D. Dorohoi – Estimating particle temperature for an argon-oxygen discharge by using Langmuir probe and optical emission spectroscopy, *Acta Physica Slovaca* **55** (6) (2005) 491-499;
105. M. Aflori, G. Amarandei, L. M. Ivan, M. Mihai-Plugaru, D. G. Dimitriu, C. Ionita, R. Schrittwieser – Experimental control of the generation and dynamics of a complex space charge structure in a double plasma machine, *Acta Physica Slovaca* **55** (5) (2005) 423-427;
106. M. Sanduloviciu, D. G. Dimitriu, L. M. Ivan, M. Aflori, C. Furtuna, S. Popescu, E. Lozneanu – Self-organization scenario relevant for nanoscale science and technology, *Journal of Optoelectronics and Advanced Materials* **7** (2) (2005) 845-851;
107. C. Ionita, D. G. Dimitriu, R. Schrittwieser – Elementary processes at the origin of the generation and dynamics of multiple double layers in DP machine plasma, *International Journal of Mass Spectrometry* **233** (1-3) (2004) 343-354;
108. D. G. Dimitriu – Physical processes related to the onset of low-frequency instabilities in magnetized plasma, *Czechoslovak Journal of Physics* **54** (Suppl. C) (2004) C468-C474;
109. D. G. Dimitriu, C. Gaman, M. Mihai-Plugaru, G. Amarandei, C. Ionita, E. Lozneanu, M. Sanduloviciu, R. Schrittwieser – Simple experimental methods to control the chaos in DP machine plasma, *Acta Physica Slovaca* **54** (2) (2004) 89-96;
110. E. Lozneanu, D. G. Dimitriu, C. Gaman, C. Furtuna, E. Filep, M. Sanduloviciu – Self-organization at the origin of different states of plasma produced in dc and hf electric fields, *Acta Physica Slovaca* **54** (1) (2004) 1-6;
111. D. G. Dimitriu, V. Ignatescu, C. Ionita, E. Lozneanu, M. Sanduloviciu, R. Schrittwieser – The influence of electron impact ionizations on low frequency instabilities in a magnetized plasma, *International Journal of Mass Spectrometry* **223-224** (2003) 141-158;

## Annex B

### List of the research grant as coordinator

1. **Electrostatic instabilities in magnetized and unmagnetized low-temperature plasmas**, PNCDI III – IDEAS grant, no. 193/2017, CNCSIS cod ID 355, 2017-2019;
2. **Self-organized structures in plasma**, bilateral grant Romania-Austria, no. 747/2014, 2014-2015;



3. **Study of the interaction between plasma and complex systems**, bilateral grant Romania-Austria, no. 557/2012, 2012-2013;
4. **Identification of the physical mechanisms involved in the appearance of spatial and spatio-temporal patterns in plasma. Applications**, PNCDI II – IDEAS grant, no. 56/2007, CNCSIS cod ID 409, 2007-2010;
5. **Electrostatic instabilities in plasma. Control methods**, CEEEX type II grant – Excellence research projects for young researches, no. 5912/2006, CNCSIS cod ET 71, 2006-2008;
6. **Complex space charge structures in plasma. Physical models. Applications**, CEEEX type II grant – Excellence research projects for young researches, no. 1499/2006, CNCSIS cod ET 69, 2006-2008;
7. **Development of a physical model for the plasma double layers**, CNCSIS type AT grant, no. 60GR/2006, CNCSIS cod AT 188, 2006-2007;
8. **Development of some experimental methods to control the chaos in plasma devices**, CNCSIS type AT grant, no. 33373/2004, CNCSIS cod AT 70, 2004-2005.

Iasi, October 07, 2024

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