

PERSONAL INFORMATION

Monica-Roxana NEMȚANU



National Institute of Research-Development for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, Group: “Applied Research with Emerging Radiation Technologies” (CATER), 409 Atomistilor St., PO Box MG-36, Magurele, Romania

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Sex Female | Nationality Romanian

WORK EXPERIENCE

Aug. 2014 to present Principal Senior Researcher (1st rank)

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- Development and utilization of physical techniques based on ionizing radiation/non-ionizing radiation/cold plasma, with a particular focus on their transformative potential in fields such as material science, food, agriculture, and environmental applications
- Characterization of the functional and structural properties of natural polymers and organic materials through techniques such as rheology, spectro(photo)colorimetry, infrared spectroscopy (FTIR), CHNS/O elemental analysis, and gel permeation chromatography (GPC)
- Design of experiments and data mining, focusing on modeling of “treatment-effect” relationships, including the identification of evolution patterns for complex organic systems exposed to ionizing radiation or combined radiation-based methods

Oct. 2011 – July 2014 Senior Researcher (2nd rank)

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- Interaction of radiation with matter and chemical dosimetry
- Development and utilization of physical techniques based on ionizing radiation/non-ionizing radiation/cold plasma for modifying and functionalizing natural polymeric materials, and biologically decontaminating agricultural and food products, as well as herbal supplements
- Characterization of the functional and structural properties of natural polymers and organic materials through techniques such as rheology, spectro(photo)colorimetry, infrared spectroscopy (FTIR), and gel permeation chromatography (GPC)
- Modeling of “treatment-effect” relationships for identifying evolution patterns for organic systems exposed to ionizing radiation

Aug. 2008 – Sept. 2011 Senior Researcher (3rd rank)

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- Interaction of accelerated electron beams with matter and electron beam chemical dosimetry
- Nonconventional methods of treatment and modification of biopolymers; Material processing with electron beam and microwaves
- Treatment of agri-foodstuffs using non-conventional methods for biological decontamination
- Characterization of biopolymer functional properties using rheology, spectro(photo)colorimetry, infrared spectroscopy (FTIR), and gel permeation chromatography (GPC)

July 2004 – July 2008

Scientific Researcher

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Interaction of accelerated electron beams with matter and electron beam chemical dosimetry*
- *Nonconventional methods of treatment and modification of biopolymers*
- *Treatment of nutritional supplements using non-conventional methods for microbial decontamination*
- *Characterization of biopolymer functional properties using rheology and spectro(photo)colorimetry*

Nov. 2002 – June 2004

Research Assistant

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Electron beam interaction with matter*
- *Treatment of foods and medicinal plants using accelerated electron beam*
- *Methods of irradiated food identification*
- *Combined action of accelerated electrons and microwaves on microorganisms and biological systems*
- *Nonconventional methods of treatment and modification of biopolymers*

Sept. 2001 – Oct. 2002

Trainee Research Assistant

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Electron beam interaction with matter*
- *Treatment of foods using accelerated electron beam; Methods of irradiated food identification*

ACADEMIC APPOINTMENTS

Oct. – December 2024

Doctoral Examiner (PhD Thesis Examiner)

Thapar Institute of Engineering & Technology, Department of Biotechnology, Patiala, Punjab, India

- *Evaluation with a detailed report on a doctoral thesis in Biotechnology: assessment of the originality, methodology, and intellectual contribution of the research to developing sustainable and efficient Fe-doped TiO₂ photocatalysts and cellulose-based bionanocomposites for pharmaceutical contaminant removal from wastewater*

June – Aug. 2024

Doctoral Examiner (PhD Thesis Examiner)

Pondicherry University, School of Life Sciences, Department of Food Science and Technology, India

- *Evaluation with a detailed report on a doctoral thesis in Food Science and Technology: assessment of the originality, methodology, and intellectual contribution of the research to exploration, characterization, and modification of underutilized non-conventional starch sources*
- *Participation in and contribution to the oral examination (viva voce) of the doctoral candidate*

July – Sept. 2007

Invited Professor

São Paulo University, Faculty of Pharmaceutical Sciences, Brazil

- *Course: "Irradiation processing (sterilization) of materials and products used in the pharmaceutical industry"; Seminar: "Electron beam irradiation of medicinal herbs: microbial status, chemical aspects, and antioxidant activity"*

TRAINING AND SUPERVISION

2021 to present Coordinator for Student Internships

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Coordination of practical training and internship programs for university students*
- *Design and oversee structured learning experiences within physical techniques based on ionizing radiation/non-ionizing radiation/cold plasma, with a particular focus on functional (bio)materials and sustainable applications*

2022 – 2024 Postdoctoral Supervisor

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Integration and supervision of three postdoctoral researchers into the project PN-III-P4-PCE-2021-1778 (Contract 51/2022): Selection of competitive reactions for plasma modified starch, following their PhD research within the laboratory*

2008 – 2023 Research Internship Supervisor

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Guiding two Master's-level student interns in 2023 – one intern was recruited and funded through the project PN-III-P4-PCE-2021-1778 (Contract 51/2022): Selection of competitive reactions for plasma modified starch*
- *Technical training in the development of biopolymer-based polyelectrolytes via electron beam-induced grafting provided to one graduate in 2013*
- *Guiding a student intern in 2008, recruited and supported through the project 51-007/2007: Obtaining of modified starches by non-conventional technology, having applications in the food industry*

MANAGEMENT ACTIVITIES

April 2023 – present Head of Group: "Applied Research with Emerging Radiation Technologies" (CATER)

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

Jan. 2020 – March 2023 Head of Group: "Advanced Research with Radiations and Plasma" (CARP)

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

Nov. 2012 – Dec. 2019 Deputy Head of the Electron Accelerators Laboratory

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

Nov. 2011 – Nov. 2014 Scientific Head of Group: "Electron Beam Applications" (EBA)

National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- Jun. 2022 – Dec. 2024** Principal Leader, Project PN III-Programme 4 – Fundamental and groundbreaking research, EXPLORATORY RESEARCH PROJECTS (PCE 2021) PN-III-P4-PCE-2021-1778 (Contract 51/2022): *Selection of competitive reactions for plasma modified starch* (<https://select.ale.inflpr.ro>)
National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- Jan. 2018 – Dec. 2021** Project Coordinator, Bilateral Cooperation Romanian Academy – Bulgarian Academy of Science: *Optimization of electron beam processing of biopolymer-based materials*
National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- Jan. 2014 – Dec. 2017** Project Coordinator, Bilateral Cooperation Romanian Academy – Bulgarian Academy of Science: *Investigation and optimization of electron beam modification of advanced materials*
National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- July 2012 – Dec. 2016** Principal Investigator (project manager), Project PN II-PARTNERSHIPS in Strategic Fields PN-II-PT-PCCA-2011-3.2-0152 (Contract 64/2012): *Eco-friendly biopolymer-based polyelectrolytes prepared by electron beam-induced grafting to improve the quality parameters of surface and waste waters* (<http://flamir.inflpr.ro>)
National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- April 2010 – Nov. 2011** Principal Investigator (Co-director), Project PN II-CAPACITIES 376/2010 (Bilateral Cooperation Romania – Turkey): *Investigations on the use of nonconventional methods against some important seed-borne pathogens of cereal crops*
National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- Sept. 2007 – Nov. 2010** Principal Investigator, Project PN II-PARTNERSHIPS in Strategic Fields 51-007/2007: *Obtaining of modified starches by non-conventional technology, having applications in the food industry*
National Institute for Laser, Plasma and Radiation Physics (INFLPR) – Electron Accelerators Laboratory, 409 Atomistilor St., PO Box MG-36, Magurele, Romania; Telephone: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- June – Oct. 2004** Principal Investigator, Grant Td CNCSIS 443/2004: *Research on obtaining modified starch using ionizing and non-ionizing radiation*
University Politehnica of Bucharest-UPB, Splaiul Independenței Nr. 313, Sect. 6, Bucharest, Romania; Telephone: +40-21- 410-03-91; www.upb.ro

EDUCATION AND TRAINING

- Nov. 2003 – Nov. 2009** **PhD in Engineering Sciences – Chemical Engineering, 2010**
 “Politehnica” University of Bucharest, Romania
 ▪ Thesis title: *Non-Conventional Techniques of Starch Treatment and Modification*
- Oct. 2001 – July 2002** **MSc in Pharmaceuticals and Cosmetics**
 “Politehnica” University of Bucharest, Faculty of Industrial Chemistry, Romania
- Oct. 1996 – July 2001** **BSc in Chemistry, Specialization: Food Chemistry**
 “Politehnica” University of Bucharest, Faculty of Industrial Chemistry, Romania

PERSONAL SKILLS

Mother tongue(s)

Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1/C2	C1/C2	C1/C2	C1/C2	C1/C2
Italian	A1/A2	A1/A2	A1/A2	A1/A2	A1/A2
Spanish	A1/A2	A1/A2	A1/A2	A1/A2	A1/A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)

Social and communication skills

Good team spirit demonstrated within research groups in various multidisciplinary projects
 Excellent oral and written communication skills developed through the experience as a speaker and participant in workshops, seminars, conferences, and publications
 Adaptability to multicultural environments gained through work as a partner in international collaborations and participation in various workshops, symposiums, and conferences in different countries (Germany, France, Portugal, the United Kingdom, Turkey, Greece, Mexico, Brazil, etc.)
 Ability for conception, analysis, and synthesis
 Decision-making ability, persuasive power, and taking responsibility for decisions made
 Flexibility in thinking and action, perseverance, and a sense of humour

Organisational/managerial skills

Experience in team and project management, coordination, and administration; leadership competencies gained through work experience in different projects
 Proven organizational sense demonstrated by establishing a new laboratory for physicochemical analysis and leading the "Applied Research with Emerging Radiation Technologies" (ARERT) (April 2023 – present), "Advanced Research with Radiation and Plasma" (CARP) (Jan. 2020 – March 2023), "Electron Beam Applications" Groups (Nov. 2011 – Nov. 2014) within the Electron Accelerators Laboratory, and serving as Deputy Head of the Electron Accelerators Laboratory (Nov. 2012 – Dec. 2019)
 Expertise in leading meetings gained from experience as a Chairperson of the Scientific Seminar of the Electron Accelerators Laboratory (2009 – 2012; 2021 – present)

Job-related skills

Expertise in research and development of unconventional physical techniques based on ionizing radiation/non-ionizing radiation/cold plasma for the modification and functionalization of natural polymeric materials; treating biological systems using ionizing/non-ionizing radiation/plasma-based methods for biological decontamination; characterizing the functional and structural properties of natural polymers and organic materials through techniques such as rheology, spectrophotometry, spectrophotocolorimetry, infrared spectroscopy, elemental analysis, and gel permeation chromatography; design of experiments; data mining and modeling of "treatment-effect" relationships, including the identification of evolution patterns for various (biological) systems exposed to ionizing radiation or combined radiation-based methods

Analytical skills developed through experimental research

Presentation skills gained from speaking at various scientific meetings (workshops, symposia, or conferences)

High-impact academic writing and publishing

Holistic strategies for academic and social media visibility

International collaborations and project management

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Independent user	Independent user	Basic user	Independent user

Levels: Basic user - Independent user - Proficient user
[Digital competences - Self-assessment grid](#)

Proficient in utilizing Microsoft Office tools, including Word, Excel, PowerPoint, etc.

Good knowledge of mathematical and statistical analysis tools such as Origin, StatistXL, InfoStat, etc., along with proficiency in specialized scientific software like ChemDraw, RheoWin, CaryWin, Opus, Eager Experience, Breeze, Empower, etc.

Easy and fast adaptation to new technologies/software

Driving licence

Category B, since February 1994
 Category B1, since December 1995
 Category AM, since January 2013

ADDITIONAL INFORMATION

Additional Education, Qualification or Specialization

- *e-Learning Course on Research Ethics [eL CoRE] – Understanding Research Ethics Through Case Examples – The Attitude for the Conscientious Scientist*, Japan Society for the Promotion of Science, March 2025
- *Course for Consultant for Personal Development* (COR cod: 242324), Arkad Training & Coaching S.R.L., Bucharest, Romania, May 25 – July 27, 2024
- *Radiation Protection in the Use of Particle Accelerators* - Level 1, National Institute of Research-Development for Nuclear Physics and Engineering "Horia Hulubei", Bucharest, Romania, March 30 – 31, 2022
- *MANAGER Professional Qualification Course*, S.C. Schultz Consulting S.R.L., Bucharest, Romania, February 18 – 23, 2018
- *Radioprotection in the Use of Particle Accelerators* - Level 1, National Institute of Research-Development for Nuclear Physics and Engineering "Horia Hulubei", Bucharest, Romania, January 23 – 27, 2017
- *Radiological Safety in the Use of Electron Accelerators* - Level 1, National Institute of Research-Development for Nuclear Physics and Engineering "Horia Hulubei", Bucharest, Romania, February 20 – 24, 2012
- *Practice Assertiveness Techniques*, Romanian Institute "Sic Cogito", Bucharest, Romania, December 22, 2011 – January 22, 2012
- *Specialization Program: "Project Manager"*, Experts Body in Accessing European Structural and Cohesion Funds, Bucharest, Romania, July 25 – August 28, 2011

- *Fundamentals of Environmental Chemistry*, "Politehnica" University of Bucharest, Faculty of Applied Chemistry and Material Science, Romania, June 25 – 28, 2007
- *Radioprotection in the use of particle accelerators* - Level 2, National Institute of Research-Development for Nuclear Physics and Engineering "Horia Hulubei", Bucharest, Romania, May 24 – June 9, 2006
- *International School of Atomic and Molecular Spectroscopy*, 22nd Course: New Developments in Optics and Related Fields: Modern Techniques, Materials and Applications, Erice, Italy, June 16 – 21, 2005
- *32nd Course of the International School of Solid State Physics*: Radiation Effects in Solids, Erice, Italy, July 17 – 29, 2004 (grant of NATO Advanced Study Institute: 1,200 \$)
- *International School of Structural Biology and Magnetic Resonance*. 6th Course: Structure, Dynamics and Function of Biological Macromolecules and Assemblies, Erice, Italy, July 10 – 22, 2003 (grant of NATO Advanced Study Institute: 1,400 \$)
- *Second International Summer Student School*: Nuclear Physics Methods and Accelerators in Biology and Medicine, Poznan, Poland, June 19 – 30, 2003 (grant of Romanian Ministry of Education and Research – National Agency for Atomic Energy: 600 \$)
- *International School of Atomic and Molecular Spectroscopy*, 20th Course: Frontiers of Optical Spectroscopy. Investigating Extreme Physical Conditions with Advanced Optical Techniques, Erice, Italy, May 16 – June 1, 2003 (grant of NATO Advanced Study Institute: 1,500 \$)

Awards

- *The Best Poster Award* from the Academy of Romanian Scientists, Romania, 2023, for the poster titled "*Versatility of Cold Plasma Technique for Starch Processing*" – F. Iacob, **M.R. Nemțanu**, M. Brașoveanu, D. Ticoș, presented at the International Scientific Conference on "*Applications of Chemistry in Nanosciences and Biomaterials Engineering*" NanoBioMat 2023 – Winter Edition, 22-24 November 2023
- *The Best Poster Award* from the Academy of Agricultural and Forestry Sciences "Gheorghe Ionescu-Sisesti", Romania, and the International Centre of Agricultural and Food Protection of the Balkan Environmental Association (B.E.NA), 2003, for the poster titled "*Physical Methods for Irradiated Food Identification*" – **M.R. Nemțanu**, A. Tîrlea, M. Brașoveanu, presented at the International Workshop on *A Healthy Environment for Food Quality and Safety*, Bucharest, Romania, February 21-22, 2003

Editorial Work

- Guest Editor of Special Issue of MDPI/*Materials* (ISSN 1996-1944): "*Polymer and Gel Materials for Air and Water Remediation via Adsorption and Separation*", March – October 2025
- Guest Editor of Special Issue of MDPI/*Materials* (ISSN 1996-1944): "*Trends in Functionalization of Natural Polymers by Ionizing and Non-Ionizing Radiation Processing*", August 2022 – October 2023
- Co-editor of the book "*Practical Aspects and Applications of Electron Beam Irradiation*", 254 pages, ISBN 978-81-7895-541-4, Research Signpost/Transworld Research Network, India, 2011

Reviewer

Critical Reviews in Food Science and Nutrition (2025), *Comprehensive Reviews in Food Science and Food Safety* (2025), *Sustainable Food Technology* (2025), *International Journal of Food Properties* (2025), *Journal of the Science of Food and Agriculture* (2025), *Discover Applied Sciences* (2025), *Journal of Cereal Science* (2024-2025), *International Journal of Biological Macromolecules* (2022, 2024-2025), *Radiation Physics and Chemistry* (2012-2013, 2017, 2020, 2022-2025), *Innovative Food Science and Emerging Technologies* (2011, 2022, 2024, 2025), *Starch/Stärke* (2012-2014, 2024), *Polysaccharides* (2024), *Molecules* (2024), *Foods* (2022, 2024), *Trends in Food Science and Technology* (2023), *Journal of Food Processing and Preservation* (2023), *Measurement: Food* (2023), *Journal of Materials Science: Materials in Electronics* (2023), *Food Hydrocolloids* (2022), *Journal of Nutrition Research* (2022), *Journal of Thermal Analysis and Calorimetry* (2011, 2022), *Food and Bioproducts Processing* (2021), *International Journal of Food Properties* (2016), *Acta Scientiarum Polonorum*, *Technologia Alimentaria* (2016), *Chemical Engineering Journal* (2015), *European Food Research and Technology* (2012-2013), *INCS News* (the news and publishing organ of the International Nuclear Chemistry Society) (2008), *International Journal of Food Science and Technology* (2006, 2011, 2016), *Nuclear Instruments and Methods in Physics Research B* (2004)

Reviewer for international programs

Green Water Processes 2022: Cooperation Chinese Academy of Sciences (CAS), China - Dutch Research Council (NWO), the Netherlands Merian Fund programme, File no. 482.22.003, 2023

Memberships

- E-Member of the Society of Chemical Industry (SCI) (July 2025 – July 2026)
- Topical Advisory Panel Member of MDPI/*Materials* (ISSN 1996-1944) (Feb. 2024 – present)
- Member of the Editorial Team of the *Nurture* (ISSN 1994-1625) (Jan. 2023 – present)
- Member of the Editorial Board of the *American Journal of Polymer Science* (ISSN 2163-1344) (Dec. 2011 – present)
- Member of the International Organizing Committee of the *International Conference on Electron Beam Technologies*, Varna, Bulgaria: 2012 – 2024
- Member of the Scientific Council of the National Institute for Laser, Plasma and Radiation Physics (INFLPR): 2012 – 2018; 2022 – present
- Chairperson of the Scientific Seminar of the Electron Accelerators Laboratory (INFLPR): 2009 – 2012; 2021 – present

Publications
Presentations
Conferences
(see Annex 1)

- Articles published in scientific journals: >90 (ISI journals: 61)
- Book chapters: 14 published chapters, 4 chapters in press
- Co-editor of a book
- Co-author of a methodological guide
- Papers in Proceedings of scientific meetings, symposia, workshops, or conferences: >20
- Patents: 2 granted patents and 1 patent proposal (registered in Romania)

Projects
(see Annex 2)

- Project Manager/Principal Investigator/Project Leader of 7 research projects (2004 to present)
- Project Member, in 20 other projects (2001 to present)

Citations

- Sum of Times Cited (Web of Science™): 650
- Without self-citations (Web of Science™): 574
- Citations (Scopus): 758
- Without self-citations (Scopus): 668
- Citations (GoogleScholar): 1096
- *h*-index (Web of Science™): 14
- *h*-index (Scopus): 14
- *h*-index (GoogleScholar): 17
- *i10*-index (GoogleScholar): 31

Researcher unique identifier(s)

- ORCID: 0000-0003-1527-0508 (<https://orcid.org/0000-0003-1527-0508>)
- <https://publons.com/researcher/2750282/monica-r-nemtanu/>
- Web of Science Researcher ID: [B-8562-2012](https://publons.com/researcher/2750282/monica-r-nemtanu/)
- Scopus Author ID: 58883695400 (<https://www.scopus.com/authid/detail.uri?authorId=58883695400>)
- BrainMap ID: U-1700-035Y-6427 (<https://www.brainmap.ro/monica-roxana-nemtanu>)
- https://scholar.google.com/citations?hl=en&user=dj_uXnUAAAAJ
- <https://www.researchgate.net/profile/Monica-Nemtanu>
- <https://www.linkedin.com/in/monica-r-nemtanu-6874b414/>

ANNEX 1

List of publications

I. Publications in scientific journals

1. R.K. Gupta, S. Pipliya, J. Patel, P.P. Srivastav, R. Castro-Muñoz, C.-K. Wang, **M.R. Nemțanu**, Essential oil-embedded starch based films for active packaging: insights into migration, stability, and preservation efficiency, *Trends in Food Science & Technology*, Vol. 163, 105149, September 2025 (ISSN 0924-2244, IF₂₀₂₄=15.4; Q1) <https://doi.org/10.1016/j.tifs.2025.105149>
2. E. Asiamah, Y. Wang, J. Gan, D.-H. Geng, **M.R. Nemțanu**, S. Sharafeldin, Y. Cheng, Effects of pre-gelatinized starch and dry starch supplementation on the structural and functional integrity of single-component smooth pea starch noodles, *International Journal of Biological Macromolecules*, Vol. 319, Part 2, 144267, August 2025 (ISSN 0141-8130, IF₂₀₂₄=8.5; Q1) <https://doi.org/10.1016/j.ijbiomac.2025.144267>
3. P.P. Akhila, K.V. Sunooj, T. Jayasuya, V. Nayana, P.T.N. Sharmila, B. Aaliya, M. Navaf, A. Annamalai, B. Indumathy, S. Yugeswaran, S.K. Sinha, S. Sabu, A. Sasidharan, V. Yadav, J. George, **M.R. Nemțanu**, Study on the influence and application of fatty acid incorporation in hausa potato starch film fabricated from plasma activated water assisted annealing modification: Assessment on fruit coating potential, *Food Chemistry*, Vol. 482, 144205, 1 August 2025 (ISSN 0308-8146, IF₂₀₂₄=9.8; Q1) <https://doi.org/10.1016/j.foodchem.2025.144205>
4. P.P. Akhila, K.V. Sunooj, **M.R. Nemțanu**, T. Sakshi, B. Aaliya, M. Navaf, A. Annamalai, B. Indumathy, S. Yugeswaran, S.K. Sinha, D.N. Yadav, M.C. Joshi, A. Jebreen, K.P. Sudheer, J. George, 3D printing of hausa potato starch: Assessing a new dimension of cold plasma treatment using varied feed gases, *International Journal of Biological Macromolecules*, 302, 140655, April 2025 (ISSN 0141-8130, IF₂₀₂₄=8.5; Q1) <https://doi.org/10.1016/j.ijbiomac.2025.140655>
5. E. Asiamah, **M.R. Nemțanu**, M. Brașoveanu, D.-H. Geng, W. Yiming, K. Wang, Y. Cheng, Unveiling the suitability of C-starch as functional food: A pairwise interaction of lipids, and polyphenol components (LIPOP), *Carbohydrate Polymers*, 353C, 123279, 1 April 2025 (ISSN 0144-8617, IF₂₀₂₄=12.5; Q1) <https://doi.org/10.1016/j.carbpol.2025.123279>
6. M. Demeter, I. Călina, A. Scărișoreanu, **M.R. Nemțanu**, M. Brașoveanu, M. Micutz, M. Dumitru, Formulation, E-Beam Crosslinking, and Comprehensive Characterisation of Lavender Oil-Enriched Hydrogels, *Polymers*, 16(22), 3150, 2024 (EISSN 2073-4360, IF₂₀₂₄=4.9; Q1) <https://doi.org/10.3390/polym16223150>
7. F. Sher, A. Hayward, A. El Guerra, B. Wang, I. Ziani, H. Hrnjic, E. Boškailo, A. Chupin, **M.R. Nemțanu**, Advanced metal-organic frameworks for superior carbon capture, high-performance energy storage and environmental photocatalysis – a critical review, *Journal of Materials Chemistry A*, Vol. 12, Issue 41, 27932-27973, 2024 (ISSN 2050-7488, IF₂₀₂₄=9.5; Q1) <https://doi.org/10.1039/D4TA03877K>
8. F. Sher, I. Ziani, N. Al-Shara, A. Chupin, N. Horo, B. Wang, S. Rahman, B. Fareed, **M.R. Nemțanu**, Critical insights into eutectic molten hydroxide electrolysis for sustainable green hydrogen production, *Sustainable Energy & Fuels*, Vol. 8, Issue 19, 4429-4452, 2024 (ISSN 2398-4902, IF₂₀₂₄=4.1; Q2) <https://doi.org/10.1039/D4SE01060D>
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28. M. Oane, A. Popescu, C. Oproiu, I.N. Mihailescu, R.V. Medianu, **M. Nemțanu**, M. Brasoveanu, O. Pacala, M. Pacala, A. Predoiu, *The general model of the thermal field distributions in solids under multiple laser irradiation*, 2009 Annual Scientific Conference – Program and Abstracts, ISSN 1843-6838, pp 140-141, Bucharest-Magurele, June 5, 2009
29. **M.R. Nemțanu**, *Induced effects on physicochemical characteristics of pastes of different starch biomacromolecules by electron beam irradiation*, 2nd International Nuclear Chemistry Congress (2nd-INCC) – Abstract Book, p 164, Cancun, Mexico, 13-18 April 2008
30. **M.R. Nemțanu**, E. Mazilu, R. Minea, *Influence of electron beam irradiation on antioxidant capacity of sea buckthorn juice*, 2nd International Nuclear Chemistry Congress (2nd-INCC) – Abstract Book, p 184, Cancun, Mexico, 13-18 April 2008
31. M. Culea, A. Iordache, **M. Nemțanu**, R. Minea, *GC/MS study of sea buckthorn oil*, Fifth Conference on Isotopic and Molecular Processes (PIM – 2007) – Abstracts, p 192, Cluj-Napoca, Romania, September 20-22, 2007
32. M. Culea, A. Iordache, **M. Nemțanu**, A. Pinte, *Gas Chromatography-mass Spectrometry Applications for Sea Buckthorn Characterization*, 5th Euro Fed Lipid Congress and 24th Symposium of the Nordic Lipidforum - OILS, FATS and LIPIDS: From Science to Applications - Innovations for a better World – Book of Abstracts, p 171, Gothenburg, Sweden, 16-19 September 2007
33. **M.R. Nemțanu**, R. Minea, V. Meltzer, E. Pincu, *Changes of Some Physicochemical Properties of Wheat Starch by Electron Beam Irradiation*, 9th European Conference on Accelerators in Applied Research and Technology (ECAART-9) – Book of Abstracts, p 114, Florence, Italy, September 3-7, 2007
34. R. Minea, **M.R. Nemțanu**, M. Culea, G. Damian, C. Balotescu, M. Bucur, E. Mazilu, *Use of electron beam treatment to improve the microbiological safety of sea buckthorn oil*, 9th European Conference on Accelerators in Applied Research and Technology (ECAART-9) – Book of Abstracts, p 114, Florence, Italy, September 3-7, 2007
35. R. Minea, **M.R. Nemțanu**, M.I. Popescu, *Effects of the Electron Beam Treatment on the Colorimetric and Rheological Behaviour of the Sea Buckthorn Oil*, Abstracts – 1st International Chester Food Science and Technology Conference (ICFST), p 64, Chester, England, 10th-13th April 2007
36. C.P. Lungu, A. Anghel, I. Mustata, V. Zaroschi, A.M. Lungu, P. Chiru, C.C. Surdu-Bob, C. Oproiu, R. Minea, **M.R. Nemțanu**, I. Văță, E. Ivanov, D. Dudu, M. Lazarescu, C. Logofatu, C. Negri, B. Bojin, F. Miculescu, M. Miculescu, A. Kiss, M. Braic, V. Braic, *Preparation and Characterization of Beryllium Thin Films Deposited on W, C and Cu by Thermionic Vacuum Arc Technique*, National Conference of Applied Physics – Book of Abstracts, p 138, ISBN10: 973-716-442-3, ISBN 13: 978-973-716-442-1, Iași, Romania, 8-9 December 2006
37. **M.R. Nemțanu**, *Accelerated Electron Beams Action on Maize Starch*, Fourth International Student Conference of the Balkan Physical Union (ISCBPU-4) – Abstract Booklet, p 128, Bodrum, Turkey, 29 August-1 September 2006
38. **M.R. Nemțanu**, R. Minea, E. Mazilu and N. Radulescu, *Microbial Safety Improvement of Sea Buckthorn by Electron Beam Irradiation*, 6th International Conference of the Balkan Physical Union (BPU-6) – Book of Abstracts, p 1093, 22-26 August 2006, Istanbul, Turkey (published in AIP Conference Proceedings – Sixth International Conference of the Balkan Physical Union Istanbul (Turkey), 22-26 August 2006, ISBN: 978-0-7354-0404-5, ISSN: 0094-243X, vol. 899, p 792, 2007)
39. **M.R. Nemțanu**, R. Minea, E. Mitru, *Electron Beam Influence on Microcrystalline Cellulose*, 6th International Conference of the Balkan Physical Union (BPU-6) – Book of Abstracts, p 1092, 22 – 26 August 2006, Istanbul, Turkey (published in AIP Conference Proceedings – Sixth International Conference of the Balkan Physical Union Istanbul (Turkey), 22-26 August 2006, ISBN: 978-0-7354-0404-5, ISSN: 0094-243X, vol. 899, p 791, 2007)
40. D. Stan-Cristea, B. Constantinescu, R. Bugoi, **M. Nemțanu**, P. Ioan, *Studies on Proton Irradiation-Induced Modifications in Ultraviolet Transmission Properties on KU1 Quartz Glass Samples*, 6th International Conference of the Balkan Physical Union (BPU-6) – Book of Abstracts, p 585, Istanbul, Turkey, 22-26 August 2006
41. R. Minea, **M.R. Nemțanu**, M. Brasoveanu and E. Mitru, *Rheological Behavior of Electron Beam Irradiated Maize Starch*, Abstracts – 6th International Balkan Workshop on Applied Physics (IBWAP 2005), p 138, Constanța, Romania, July 5-7th, 2005
42. R. Minea, M. Brasoveanu, **M.R. Nemțanu** and E. Mitru, *Evaluation of Irradiated Fresh Herbs*, Abstracts – 6th International Balkan Workshop on Applied Physics (IBWAP 2005), p 138, Constanța, Romania, July 5-7th, 2005
43. B. Constantinescu, R. Bugoi, **M. Nemțanu**, P. Ioan, D. Stan, *Studies on Proton Irradiation-Induced Modifications in Ultraviolet Transmission Properties on KU1 Quartz Glass Samples*, Abstracts – 6th International Balkan Workshop on Applied Physics (IBWAP 2005), p 117, Constanța, Romania, July 5-7th, 2005
44. M.M. Brasoveanu, N.M. Grecu, **M.R. Nemțanu**, R. Minea, V.V. Grecu, *Free Radicals in Electron Beam Irradiated Green Coffee Beans Studied by Electron Paramagnetic Resonance Spectroscopy*, 9th International Workshop Electron Magnetic Resonance of Disordered Systems (EMARDIS-05) – Abstracts, Sofia-Boyana, Bulgaria, June 8-15, 2005
45. R. Minea, M. Brasoveanu, **M. Nemțanu**, S. Manea, V. Tamas, E. Mazilu, S. Setnic, N. Radulescu, C. Tanase, *The Effect of Ionising Radiation on Certain Biologically Active Compounds and Enzymatic Activity of Spirulina platensis*, Physics Conference (TIM-04) – Abstract Book, Addendum, Timișoara, Romania, November 26th-27th, 2004
46. N. Georgescu, R. Minea, **M. Nemțanu**, M. Brasoveanu, *Production of oxidant agents in water, by using e-beam, combined with electrical discharges*, 8th European Conference on Accelerators in Applied Research and Technology (ECAART-8), p 90, Paris, France, September 20-24, 2004
47. B. Constantinescu, **M. Nemțanu**, M. Brasoveanu, R. Bugoi, P. Ioan, M. Dragusin, D. Stan, *Studies on Proton Irradiation-Induced Modifications in Ultraviolet Transmission Properties on KU1 Quartz Glass Samples*, Abstracts – 5th International Balkan Workshop on Applied Physics (IBWAP 2004), p 106, Constanța, Romania, July 5-7th, 2004
48. M. Brasoveanu, **M. Nemțanu**, A. Tirlea, *Identification Possibilities of Irradiated Coffee Beans by Rheology and Paramagnetic Resonance Methods*, Simpozion "Mediul si Industria" – Rezumate, ISBN 973-85841-9-1, p 138, București, Romania, 29-31 octombrie 2003

49. M.M. Brasoveanu, **M.R. Nemtanu**, A. Tirlea, R. Minea, V.V. Grecu, *Studies Regarding the Possibility to Use Electron Paramagnetic Resonance on Irradiated Coffee Identification*, Book of Abstracts – First International Meeting on Applied Physics (APHYS – 2003), p 85, Badajoz, Spain, October 13-18th 2003
50. **M.R. Nemtanu**, M.M. Brasoveanu, A. Tirlea, R. Minea, *Physical Methods for Irradiated Food Discrimination*, 4th International Balkan Workshop on Applied Physics (IBWAP 2003) – Abstracts, p 108, Constanța, Romania, September 25-27th, 2003
51. M.M. Brasoveanu, A. Tirlea, **M.R. Nemtanu**, R. Minea, *Rheological Method for Irradiated Coffee*, 4th International Balkan Workshop on Applied Physics (IBWAP 2003) – Abstracts, p 108, Constanța, Romania, September 25-27th, 2003
52. A. Tirlea, **M.R. Nemtanu**, M.M. Brasoveanu, R. Minea, *Irradiated Starch Detection by Rheological Method*, 4th International Balkan Workshop on Applied Physics (IBWAP 2003) – Abstracts, p 107, Constanța, Romania, September 25-27th, 2003
53. B. Constantinescu, **M. Nemtanu**, M. Brasoveanu, D. Stan, P. Ioan, R. Bugoi, *Gamma and Proton Degradation in Optical Transmission Materials*, 4th International Balkan Workshop on Applied Physics (IBWAP 2003) – Abstracts, p 73, Constanța, Romania, September 25-27th, 2003
54. **M.R. Nemtanu** and B. Constantinescu, *Gamma and Proton Irradiation Effects on KU1 Glass Quartz*, International School of Atomic and Molecular Spectroscopy. 20th Course: Frontiers of Optical Spectroscopy. Investigating Extreme Physical Conditions with Advanced Optical Techniques – Proceedings, p 41, May 16 - June 1, 2003, Erice, Italy (publicat și în *Frontiers of Optical Spectroscopy. Investigating Extreme Physical Conditions with Advanced Optical Techniques*, NATO Science Series - II. Mathematics, Physics and Chemistry, Kluwer Academic Publishers/Dordrecht/Boston/London, vol. 168, ISBN 1-4020-2750-8, p 747)
55. R. Minea, N. Georgescu, Al. Vulpe, G. Bajeu, M. Brasoveanu, **M. Nemtanu**, *A System for Pulsed Corona Plasmas, with Ecological Applications*, Ceres Programme – Annual Scientific Session, ISBN 973-8488-09-5, pp II.89-II.90, Bucharest, Romania, 2-3 December 2002
56. **M.R. Nemtanu**, M. Brasoveanu, *Preliminary Researches Regarding Edible Jet Printing Inks*, 12th National Conference of the Romanian Physical Society “Trends in Physics” – Abstracts, p 89, Târgu Mureș, Romania, 26-28 September 2002
57. M.M. Brasoveanu, D. Timus, **M.R. Nemtanu**, *Elaboration of a Method for Surface Electrical Resistivity Modification of Polyamide by Electron Beam Irradiation*, 12th National Conference of the Romanian Physical Society “Trends in Physics” – Abstracts, p 35, Târgu Mureș, Romania, 26-28 September 2002
58. C. Oproiu, D. Martin, F. Scarlat, D. Timus, M. Brasoveanu, **M. Nemtanu**, *Insulating Materials Resistance in Intense Radiation Beams*, 12th National Conference of the Romanian Physical Society “Trends in Physics” – Abstracts, p 32, Târgu Mureș, Romania, 26-28 September 2002

ANNEX 2

List of projects

I. Project Manager/Principal Investigator/Project Leader

1. June 2022 – December 2024
 - Title: *Selection of competitive reactions for plasma-modified starch*
 - Financed under the National Research, Development, and Innovation III Program (**project competition**), by the Romanian Ministry of Research, Innovation and Digitalization, CNCS - UEFISCDI: Project PN III-Programme 4 – Fundamental and groundbreaking research, EXPLORATORY RESEARCH PROJECTS (PCE 2021) PN-III-P4-PCE-2021-1778 (Contract 51/2022) – 1,135,000 lei (~227,000 EUR)
2. January 2018 – December 2021
 - Title: *Optimization of electron beam processing of biopolymer-based materials*
 - Bilateral Cooperation Romanian Academy – Bulgarian Academy of Science (travel expenses through Academies)
3. January 2014 – December 2017
 - Title: *Investigation and optimization of electron beam modification of advanced materials*
 - Bilateral Cooperation Romanian Academy – Bulgarian Academy of Science (travel expenses through Academies)
4. July 2012 – December 2016
 - Title: *Eco-friendly biopolymer-based polyelectrolytes prepared by electron beam-induced grafting to improve the quality parameters of surface and waste waters*
 - Financed under the National Research, Development, and Innovation II Program (**project competition**), by the Romanian Research Authority: Project PN II-PARTNERSHIPS in Strategic Fields PN-II-PT-PCCA-2011-3.2-0152 (Contract 64/2012) – 2,580,000 lei (~570,000 EUR)
5. April 2010 – November 2011
 - Title: *Investigations on the use of non-conventional methods against some important seed-borne pathogens of cereal crops*
 - Financed under the National Research, Development, and Innovation II Program (**project competition**), by the Romanian Research Authority: Project PN II-CAPACITIES 376/26.04.2010 (Bilateral Cooperation Romania – Turkey) – 11,095 lei (~2,580 EUR)
6. September 2007 – November 2010
 - Title: *Obtaining modified starches by non-conventional technology, having applications in the food industry*
 - Financed under the National Research, Development, and Innovation II Program (**project competition**), by the Romanian Research Authority: Project PN II-PARTNERSHIPS in Strategic Fields 51-007/18.09.2007 – 1,165,443 lei (~340,000 EUR)
7. June – October 2004
 - Title: *Research on obtaining modified starch using ionizing and non-ionizing radiation*
 - Doctoral grant: Grant T_d CNCSIS 443/2004 – CNCSIS (**project competition**) – 4,600 lei (~1,150 EUR)

II. Member in other national projects

1. NUCLEU-LAPLAS VII 30N/12.01.2023: Project PN 23 03 01: Advanced research and technological developments of lasers - plasma - radiation - space (2023 – present)
2. NUCLEU-LAPLAS VI 16N/08.02.2019: Project PN 19 15 01 01: Emerging research on lasers, plasma, radiation, and their applications in intelligent specialized fields and public interest / Phase: No. 58, Synergetic impact of combined physical treatments on the rheological behavior of starch (phase completion date: October 14, 2020) / Phase Responsible
3. NUCLEU-LAPLAS VI: Advanced research and technological developments of lasers - plasma - radiation - space (2019 – 2022)
4. NUCLEU-LAPLAS 4N/2016: Project PN 16 47 01 03: Multidisciplinary studies with lasers, plasma, and radiation in public priority fields (environment and health) / Phase: No. 4, The impact of ionizing radiation on the spectroscopic characteristics of edible vegetable oils (phase completion date: June 14, 2016) / Phase Responsible
5. NUCLEU-LAPLAS III 09 39 05 02: Researches on combined treatments with electron beam and microwave of materials having applications in environment protection and medicine (June 2009 – December 2011)
6. NUCLEU-LAPLAS III 09 39 05 01 Macroscopic effects of fundamental and applied interest of accelerated electron interaction with matter (March 2009 – November 2011)
7. PN II-IDEAS 349/2007: Percolative nanocomposite thin films based on polymer/carbon nanoparticles synthesised by laser pyrolysis technique, for advanced applications in electrotechnique (electrical engineering) (October 2007 – October 2010)
8. PN II-PARTNERSHIPS in Strategic Fields 51-101/18.09.2007: Natural food supplement with anti-stress properties (September 2007 – December 2010)/*research team member* (2007 – February 2008)
9. PN II-PARTNERSHIPS in Strategic Fields 31-061/18.09.2007: Non-contaminated vegetal extracts used in phytotherapy and obtained by non-conventional technologies (September 2007 – October 2010)/*research team member* (2007 – February 2008)
10. CEEB-Biotech 86/31.07.2006: Application of accelerated electron beam treatment for microbial decontamination of nutritional supplements from sea buckthorn (August 2006 – September 2008)/ *research team member* (2006 – February 2008)
11. NUCLEU-LAPLAS II 06 36 05 02: Physicochemical and microbiological modifications of sea buckthorn powder treated with accelerated electron beams to ensure its microbial quality (January 2006 – November 2008)
12. PNCDI-CERES 4-4/04.11.2004: Modification of some biopolymers by combined treatment with accelerated electron beams and corona electrical discharges (November 2004 – September 2006)

13. PNCDI-CERES 4-3/04.11.2004: Destruction of water organic pollutants with *in-situ* pulsed corona plasmas optimally combined with catalysts and supplementary ozone flux (November 2004 – September 2006)
14. PNCDI-CERES 3-44/05.11.2003: Effects of ionising radiations on some phytotherapeutic products for ensuring microbiological decontamination (November 2003 – August 2005)
15. NUCLEU-LAPLAS 03-17 05 03: Use of ionising radiation treatment to ensure food safety and irradiated food control, at national and international level: the present status and development directions (May 2003 – October 2005)
16. DELTA-B.EN.A in the environmental protection field: Identification possibilities of irradiated coffee beans by rheological method and electron paramagnetic resonance (April – November 2003)
17. PNCDI-CERES 46/13.11.2002: Obtaining the synergetic effect in aqueous solution combining *repetitive pulsed corona discharges – accelerated electron beam* to maximize the concentrations of depollution agents (November 2002 – November 2004)
18. PNCDI-CERES 139/15.10.2001: Development of new methods to increase the efficiency of ecological applications of pulsed corona plasmas (October 2001 – November 2004)
19. ORIZONT 2000: Researches concerning the effects of accelerated electron beams on some biomolecule's functionality, involved in nutrition, medicine and environmental protection (November 2000 – June 2002)/*research team member* (September 2001 – June 2002)
20. ORIZONT 2000: Study concerning the influence of accelerated electron beam and bremsstrahlung radiation on agri-food constituents (December 1997 – October 2001)/*research team member* (September – October 2001)

PERSONAL INFORMATION

Monica-Roxana NEMȚANU



Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Grup: “Cercetări aplicate cu tehnologii emergente cu radiații” (CATER), Str. Atomistilor 409, C.P. MG-36, Măgurele, România

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Sex Feminin | Naționalitate Română

EXPERIENȚA PROFESIONALĂ

Aug. 2014 – prezent Cercetător științific (grd. I)

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- Dezvoltare și utilizare tehnici fizice bazate pe radiații ionizante/neionizante/plasmă rece, cu accent deosebit pe potențialul lor transformativ în domenii precum știința materialelor, alimentație, agricultură și aplicații de mediu
- Caracterizare proprietăți funcționale și structurale ale polimerilor naturali și materialelor organice prin tehnici precum reologie, spectro(foto)colorimetrie, spectroscopie în infraroșu (FTIR), analiză elementală CHNS/O și cromatografie de permeație de gel (GPC)
- Design experimental și procesare de date, cu accent pe modelarea relațiilor „tratament-efect”, inclusiv identificarea modelelor de evoluție pentru sisteme organice complexe expuse la radiații ionizante sau metode combinate bazate pe radiații

Oct. 2011 – iul. 2014 Cercetător științific (grd. II)

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- Interacția radiației cu materia și dozimetrie chimică
- Dezvoltare și utilizare tehnici fizice bazate pe radiații ionizante/neionizante/plasmă rece pentru modificare și funcționalizare materiale polimerice naturale și decontaminare biologică a produselor agricole și alimentare, precum și a suplimentelor pe bază de plante
- Caracterizare proprietăți funcționale și structurale ale polimerilor naturali și materialelor organice prin tehnici precum reologie, spectro(foto)colorimetrie, spectroscopie în infraroșu (FTIR) și cromatografie cu permeație de gel (GPC)
- Modelare relații „tratament-efect” pentru identificarea modelelor de evoluție pentru sistemele organice expuse la radiații ionizante

Aug. 2008 – Sept. 2011 Cercetător științific (grd. III)

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- Interacția fasciculelor de electroni accelerați cu materia și dozimetrie chimică a fasciculelor de electroni
- Metode neconvenționale de tratare și modificare a biopolimerilor
- Preprocesare materiale cu fascicul de electroni și microunde
- Tratare produse agroalimentare folosind metode neconvenționale de decontaminare biologică
- Caracterizare proprietăți funcționale ale biopolimerilor folosind reologie, spectro(foto)colorimetrie, spectroscopie în infraroșu (FTIR) și cromatografie cu permeație de gel (GPC)

Iul. 2004 – Iul. 2008

Cercetător științific

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Interacția fasciculelor de electroni accelerați cu materia și dozimetrie chimică a fasciculelor de electroni*
- *Metode neconvenționale de tratare și modificare a biopolimerilor*
- *Tratare suplimente nutritive folosind metode neconvenționale de decontaminare biologică*
- *Caracterizare proprietăți funcționale ale biopolimerilor folosind reologie și spectro(foto)colorimetrie*

Nov. 2002 – Iun. 2004

Asistent de cercetare

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Interacția fasciculelor de electroni accelerați cu materia*
- *Tratare alimente și plante medicinale folosind fascicul de electroni accelerați*
- *Metode de identificare a alimentelor iradiate*
- *Acțiune combinată a electronilor accelerați și microundelor asupra microorganismelor și sistemelor biologice*
- *Metode neconvenționale de tratare și modificare a biopolimerilor*

Sept. 2001 – Oct. 2002

Asistent de cercetare stagiar

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Interacția fasciculelor de electroni accelerați cu materia*
- *Tratare alimente cu fascicul de electroni accelerați*
- *Metode de identificare a alimentelor iradiate*

ACTIVITĂȚI ACADEMICE

Oct. – Dec. 2024

Membru comisie de doctorat

Thapar Institute of Engineering & Technology, Department of Biotechnology, Patiala, Punjab, India

- *Evaluare însoțită de raport detaliat asupra unei teze de doctorat în Biotehnologie: apreciere originalitate, metodologie și contribuție intelectuală a cercetării la dezvoltarea sustenabilă și eficientă de fotocatalizatori TiO_2 dopați cu Fe și bionanocompozite pe bază de celuloză pentru eliminarea contaminanților farmaceutici din apele uzate*

Iun. – Aug. 2024

Membru comisie de doctorat

Pondicherry University, School of Life Sciences, Department of Food Science and Technology, India

- *Evaluare însoțită de raport detaliat asupra unei teze de doctorat în Știința și Tehnologia Alimentară: apreciere originalitate, metodologie și contribuție intelectuală a cercetării la explorarea, caracterizarea și modificarea surselor de amidon neconvenționale subutilizate*
- *Participare și a contribuție la examenul oral (viva voce) al doctorandului*

Iul. – Sept. 2007

Profesor invitat

São Paulo University, Faculty of Pharmaceutical Sciences, Brazil

- *Curs: „Procesarea prin iradiere (sterilizare) a materialelor și produselor utilizate în industria farmaceutică”*
- *Seminar: „Iradierea cu fascicule de electroni a plantelor medicinale: stare microbiană, aspecte chimice și activitate antioxidantă”*

ACTIVITĂȚI DE FORMARE ȘI COORDONARE

2021 – prezent

Coordonator pentru stagii de practică studențească

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Coordonare programe de instruire practică pentru studenții*
- *Proiectare/structurare și coordonare experiențe de învățare cu privire la tehnici fizice bazate pe radiații ionizante/neionizante/plasmă rece, cu accent pe (bio)materiale funcționale și aplicații sustenabile*

2022 – 2024

Coordonator cercetători postdoctorali

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Integrare și coordonare trei cercetători postdoctorali în proiectul PN-III-P4-PCE-2021-1778 (Contract 51/2022):* Selecția reacțiilor competitive pentru amidon modificat cu plasmă, în urma cercetării lor doctorale în cadrul laboratorului

2008 – 2023

Coordonator stagii de cercetare

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- *Îndrumare doi studenți stagiați de nivel master în 2023 – unul dintre stagiați recrutat și finanțat prin proiectul PN-III-P4-PCE-2021-1778 (Contract 51/2022):* Selecția reacțiilor competitive pentru amidon modificat cu plasmă
- *Instruire tehnică în dezvoltarea de polielectroliți pe bază de biopolimeri prin grefare indusă de fascicul de electroni oferită unui absolvent în 2013*
- *Îndrumare student stagiar în 2008, recrutat și susținut prin proiectul 51-007/2007:* Obținerea de amidon modificat prin tehnologie neconvențională, cu aplicații în industria alimentară

ACTIVITĂȚI DE MANAGEMENT

April 2023 – prezent

Sef de grup: "Cercetări aplicate cu tehnologii emergente cu radiații" (CATER)

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

Ian. 2020 – Mar. 2023

Sef de grup: "Cercetări avansate cu radiații și plasmă" (CARP)

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

Nov. 2012 – Dec. 2019

Adjunct șef laborator Acceleratoare de electroni

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

Nov. 2011 – Nov. 2014

Sef științific grup "Aplicații fascicule de electroni"

Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro

- Iun. 2022 – Dec. 2024** Director de proiect, Proiect PN III-Programul 4 – Cercetare Fundamentală și de Frontieră, PROIECTE DE CERCETARE EXPLORATORIE (PCE 2021) PN-III-P4-PCE-2021-1778 (Contract 51/2022): *Selectare reacții competitive pentru amidon modificat în plasmă* (<https://select.ale.inflpr.ro>)
Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; www.inflpr.ro
- Ian. 2018 – Dec. 2021** Director de proiect, Cooperare Bilaterală Academia Română – Academia de Științe Bulgară: *Optimization of electron beam processing of biopolymer-based materials*
Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- Ian. 2014 – Dec. 2017** Director de proiect, Cooperare Bilaterală Academia Română – Academia de Științe Bulgară: *Investigation and optimization of electron beam modification of advanced materials*
Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- Iul. 2012 – Dec. 2016** Director de proiect, Proiect PN II-PARTENERIATE în domenii prioritare PN-II-PT-PCCA-2011-3.2-0152 (Contract 64/2012): *Polielectroliti prietenoși mediului pe bază de biopolimeri, obținuți prin grefare indusă cu fascicul de electroni, pentru îmbunătățirea parametrilor de calitate a apelor de suprafață și reziduale* (<http://flamir.inflpr.ro>)
Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- Apr. 2010 – Nov. 2011** Co-Director de proiect, Proiect PN II-CAPACITĂȚI 376/26.04.2010 (Cooperare Bilaterală Romania – Turcia): *Investigații privind utilizarea de metode neconvenționale împotriva unor importanți agenți patogeni din recoltele cerealiere*
Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- Sept. 2007 – Nov. 2010** Director de proiect, Proiect PN II-PARTENERIATE în Domenii prioritare 51-007/18.09.2007: *Obținerea de amidonuri modificate prin tehnologie neconvențională, cu aplicabilitate în industria alimentară*
Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR) București – Laboratorul Acceleratoare de electroni, Str. Atomistilor 409, C.P. MG-36, Măgurele, România; Telefon: +40-21-457-45-07; Fax: +40-21-457-42-43; www.inflpr.ro
- Iun. – Oct. 2004** Director de proiect, Grant Td CNCSIS 443/2004: *Cercetări privind obținerea amidonului modificat în câmp de radiații ionizante și neionizante*
Universitatea Politehnica din București-UPB, Splaiul Independenței Nr. 313, Sect. 6, București, România; Telefon: +40-21- 410-03-91; www.upb.ro

EDUCAȚIE ȘI FORMARE

- Nov. 2003 – Nov. 2009** **Doctorat în Științe Inginerești – Inginerie chimică, 2010**
Universitatea Politehnica din București-UPB, România
▪ Titlul tezei de doctorat: *Tehnici neconvenționale de tratare și modificare a amidonului*
- Oct. 2001 – Iul. 2002** **Studii Aprofundate în Medicamente și Cosmetice**
Universitatea Politehnica din București-UPB, Facultatea de Chimie Industrială, România
- Oct. 1996 – Iul. 2001** **Licență în Chimie, Specializare: Chimie alimentară**
Universitatea Politehnica din București-UPB, Facultatea de Chimie Industrială, România

COMPETENȚE PERSONALE

Limba maternă

Româna

Alte limbi străine cunoscute

	ÎNȚELEGERE		VORBIRE		SCRIERE
	Ascultare	Citire	Participare la conversație	Discurs oral	
Engleză	C1/C2	C1/C2	C1/C2	C1/C2	C1/C2
Italiană	A1/A2	A1/A2	A1/A2	A1/A2	A1/A2
Spaniolă	A1/A2	A1/A2	A1/A2	A1/A2	A1/A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Competențe și abilități sociale și de comunicare

Spirit de echipă bun demonstrat în cadrul grupurilor de cercetare din diverse proiecte multidisciplinare
Abilități excelente de comunicare orală și scrisă, dezvoltate prin prezentările orale și participările la conferințe, workshop-uri și simpozioane și publicații
Adaptabilitate la medii multiculturale dobândită prin munca în calitate de partener în colaborări internaționale și participarea la diverse workshop-uri, simpozioane și conferințe în diferite țări (Germania, Franța, Portugalia, Regatul Unit, Turcia, Grecia, Mexic, Brazilia etc.)
Capacitate de concepție, analiză și sinteză
Capacitate de luare a deciziilor, putere de convingere și asumarea responsabilității pentru deciziile luate
Flexibilitate în gândire și acțiune, perseverență, simț al umorului

Competențe și aptitudini manageriale

Experiență în managementul de echipă și proiect, coordonare și administrare; competențe de conducere dobândite prin experiența de lucru în diferite proiecte
Simț organizatoric dovedit prin dezvoltarea unui nou laborator pentru analize fizico-chimice și conducerea mai multor grupuri „Cercetări aplicate cu tehnologii emergente cu radiații” (CATER) (apr. 2023 – prezent), „Cercetări avansate cu radiații și plasmă” (CARP) (ian. 2020 – mar. 2023), „Aplicații fascicule de electroni” (nov. 2011 – nov. 2014) în cadrul Laboratorului Acceleratoare de Electroni și ocuparea funcției de Șef Adjunct al Laboratorului Acceleratoare de Electroni (nov. 2012 – dec. 2019).
Experiență în conducerea de întâlniri dobândită din experiența ca Președinte al Seminarului Științific al Laboratorului Acceleratoare de Electroni (2009 – 2012; 2021 – prezent).

Competențe și aptitudini tehnice

Expertiză în cercetare și dezvoltare de tehnici fizice neconvenționale bazate pe radiații ionizante/neionizante/plasmă rece pentru modificare și funcționalizare materiale polimerice naturale; Tratare sisteme biologice folosind metode bazate pe radiații ionizante/neionizante/plasmă rece pentru decontaminare biologică; Caracterizare proprietăți funcționale și structurale polimeri naturali și materiale organice prin tehnici precum reologie, spectro(foto)colorimetrie, spectroscopie în infraroșu, analiză elementală și cromatografie cu permeație de gel; Design experimental; Procesare de date și modelare relații „tratament-efect”, cu identificare de modele de evoluție pentru diverse sisteme (biologice) expuse la radiații ionizante sau metode combinate bazate pe radiații
Abilități analitice dezvoltate prin cercetare experimentală
Abilități de prezentare dobândite prin expuneri orale la diverse întâlniri științifice (workshop-uri, simpozioane sau conferințe)
Scriere și publicare academică cu impact ridicat
Strategii holistice pentru vizibilitate academică și pe rețelele sociale
Colaborări internaționale și management de proiect

Competențe digitale

AUTOEVALUARE				
Procesarea informației	Comunicare	Creare de conținut	Securitate	Rezolvarea de probleme
Utilizator experimentat	Utilizator experimentat	Utilizator independent	Utilizator elementar	Utilizator independent

Niveluri: Utilizator elementar - Utilizator independent - Utilizator experimentat
Competențe digitale - Grilă de autoevaluare

Bună stăpânire a instrumentelor Microsoft Office (Word, Excel, PowerPoint, etc.)
Bună cunoaștere a instrumentelor de analiză matematică și statistică precum Origin, StatistiXL, InfoStat, etc., și a altor programe științifice specializate, cum ar fi ChemDraw, RheoWin, CaryWin, Opus, Eager Experience, Breeze, Empower, etc.
Adaptare ușoară și rapidă la noi tehnologii/software

Permis de conducere

Categoria B, din februarie 1994
Categoria B1, din decembrie 1995
Categoria AM, din ianuarie 2013

INFORMAȚII SUPLIMENTARE

Educație, calificare sau specializare suplimentare

- *e-Learning Course on Research Ethics [eL CoRE] – Understanding Research Ethics Through Case Examples – The Attitude for the Conscientious Scientist*, Japan Society for the Promotion of Science, martie 2025
- *Curs pentru Consultant pentru dezvoltare personală* (COR cod: 242324), Arkad Training & Coaching S.R.L, București, România, mai 25 – iulie 27, 2024
- *Radioprotecția la utilizarea acceleratoarelor de particule* - Nivelul 1, Institutul Național de Cercetare-Dezvoltare pentru Fizică și Inginerie Nucleară “Horia Hulubei”, București, România, martie 30 – 31, 2022
- *Curs de calificare profesională MANAGER*, S.C. Schultz Consulting S.R.L., București, România, 18 – 23 februarie 2018
- *Radioprotecția la utilizarea acceleratoarelor de particule* – Nivelul 1, Institutul Național de Cercetare-Dezvoltare pentru Fizică și Inginerie Nucleară “Horia Hulubei”, București, România, 23 – 27 ianuarie 2017
- *Siguranța radiologică la utilizarea acceleratoarelor de electroni* - Nivelul 2, Institutul Național de Cercetare-Dezvoltare pentru Fizică și Inginerie Nucleară “Horia Hulubei”, București, România, 20 – 24 februarie 2012
- *Curs online „Exersarea tehnicilor asertive”*, Institutul Român “Sic Cogito”, România, 22 decembrie 2011 – 22 ianuarie 2012
- *Program de specializare: “Manager de proiect”*, Corpul Experților în Accesarea Fondurilor Structurale și de Coeziune Europene, București, România, 25 iulie – 28 august 2011

- *Fundamentals of Environmental Chemistry*, "Politehnica" University of Bucharest, Faculty of Applied Chemistry and Material Science, Romania, June 25 – 28, 2007
- *Radioprotecția la utilizarea acceleratoarelor de particule* - Nivelul 2, Institutul Național de Cercetare-Dezvoltare pentru Fizică și Inginerie Nucleară "Horia Hulubei", București, România, 24 mai – 9 iunie 2006
- *International School of Atomic and Molecular Spectroscopy*, 22nd Course: New Developments in Optics and Related Fields: Modern Techniques, Materials and Applications, Erice, Italy, June 16 – 21, 2005
- *32nd Course of the International School of Solid State Physics*: Radiation Effects in Solids, Erice, Italy, July 17 – 29, 2004 (grant of NATO Advanced Study Institute: 1,200 \$)
- *International School of Structural Biology and Magnetic Resonance*. 6th Course: Structure, Dynamics and Function of Biological Macromolecules and Assemblies, Erice, Italy, July 10 – 22, 2003 (grant of NATO Advanced Study Institute: 1,400 \$)
- *Second International Summer Student School*: Nuclear Physics Methods and Accelerators in Biology and Medicine, Poznan, Poland, June 19 – 30, 2003 (grant of Romanian Ministry of Education and Research – National Agency for Atomic Energy: 600 \$)
- *International School of Atomic and Molecular Spectroscopy*, 20th Course: Frontiers of Optical Spectroscopy. Investigating Extreme Physical Conditions with Advanced Optical Techniques, Erice, Italy, May 16 – June 1, 2003 (grant of NATO Advanced Study Institute: 1,500 \$)

Premii

- *The Best Poster Award* from the Academy of Romanian Scientists, Romania, 2023, pentru posterul "Versatility of Cold Plasma Technique for Starch Processing" – F. Iacob, **M.R. Nemțanu**, M. Brașoveanu, D. Ticoș, prezentat în cadrul International Scientific Conference on "Applications of Chemistry in Nanosciences and Biomaterials Engineering" NanoBioMat 2023 – Winter Edition, 22-24 November 2023
- *The Best Poster Award* from the Academy of Agricultural and Forestry Sciences "Gheorghe Ionescu-Sisesti", Romania, and the International Centre of Agricultural and Food Protection of the Balkan Environmental Association (B.E.NA), 2003, pentru posterul "Physical Methods for Irradiated Food Identification" – **M.R. Nemțanu**, A. Tîrlea, M. Brașoveanu, prezentat în cadrul International Workshop on *A Healthy Environment for Food Quality and Safety*, Bucharest, Romania, February 21-22, 2003

Activitate editorială

- Guest Editor of Special Issue of MDPI/*Materials* (ISSN 1996-1944): "Polymer and Gel Materials for Air and Water Remediation via Adsorption and Separation", Mar. – Oct. 2025
- Guest Editor of Special Issue of MDPI/*Materials* (ISSN 1996-1944): "Trends in Functionalization of Natural Polymers by Ionizing and Non-Ionizing Radiation Processing", Aug. 2022 – Oct. 2023
- Co-editor al volumului "Practical Aspects and Applications of Electron Beam Irradiation", 254 pagini, ISBN 978-81-7895-541-4, Research Signpost/Transworld Research Network, India, 2011

Reviewer

Critical Reviews in Food Science and Nutrition (2025), *Comprehensive Reviews in Food Science and Food Safety* (2025), *Sustainable Food Technology* (2025), *International Journal of Food Properties* (2025), *Journal of the Science of Food and Agriculture* (2025), *Discover Applied Sciences* (2025), *Journal of Cereal Science* (2024-2025), *International Journal of Biological Macromolecules* (2022, 2024-2025), *Radiation Physics and Chemistry* (2012-2013, 2017, 2020, 2022-2025), *Innovative Food Science and Emerging Technologies* (2011, 2022, 2024, 2025), *Starch/Stärke* (2012-2014, 2024), *Polysaccharides* (2024), *Molecules* (2024), *Foods* (2022, 2024), *Trends in Food Science and Technology* (2023), *Journal of Food Processing and Preservation* (2023), *Measurement: Food* (2023), *Journal of Materials Science: Materials in Electronics* (2023), *Food Hydrocolloids* (2022), *Journal of Nutrition Research* (2022), *Journal of Thermal Analysis and Calorimetry* (2011, 2022), *Food and Bioproducts Processing* (2021), *International Journal of Food Properties* (2016), *Acta Scientiarum Polonorum*, *Technologia Alimentaria* (2016), *Chemical Engineering Journal* (2015), *European Food Research and Technology* (2012-2013), *INCS News* (the news and publishing organ of the International Nuclear Chemistry Society) (2008), *International Journal of Food Science and Technology* (2006, 2011, 2016), *Nuclear Instruments and Methods in Physics Research B* (2004)

Reviewer pentru programe
internationale

Green Water Processes 2022: Cooperation Chinese Academy of Sciences (CAS), China - Dutch Research Council (NWO), the Netherlands Merian Fund programme, File no. 482.22.003, 2023

Membru

- E-Member of the Society of Chemical Industry (SCI) (Iul. 2025 – Iul. 2026)
- Topical Advisory Panel Member of MDPI/*Materials* (ISSN 1996-1944) (Feb. 2024 – prezent)
- Membru al Echipei Editoriale al *Nurture* (ISSN 1994-1625) (Ian. 2023 – prezent)
- Membru al Comitetului Editorial al *American Journal of Polymer Science* (ISSN 2163-1344) (Dec. 2011 – prezent)
- Membru al Comitetului Internațional de Organizare al *International Conference on Electron Beam Technologies*, Varna, Bulgaria: 2012 – 2024
- Membru al Consiliului Științific al INFLPR: 2012 – 2018; 2022 – prezent
- Președinte Seminar Științific al Laboratorului Acceleratoare de Electroni (INFLPR): 2009 – 2012; 2021 – prezent

Publicații
Prezentări
Conferințe
(Anexa 1)

- Articole publicate în reviste științifice: >90 (reviste ISI: 61)
- Capitole de carte: 14 publicate, 4 în curs de publicare
- Co-editor al unui volum
- Co-autor al unui ghid metodologic
- Lucrări în Proceedings-uri ale manifestărilor științifice: >20
- Brevete de invenție: 2 brevete acordate și 1 cerere de brevet (în România)

Proiecte
(Anexa 2)

- Director de proiect: 7 proiecte de cercetare câștigate prin competiție (2004 – prezent)
- Membru în echipa de cercetare: în alte 20 proiecte (2001 – prezent)

Citări

- Total citări (Web of Science™): 650
- Fără autocitări(Web of Science™): 574
- Citări (Scopus): 758
- Fără autocitări (Scopus): 668
- Citări (GoogleScholar): 1096
- *h*-index (Web of Science™): 14
- *h*-index (Scopus): 14
- *h*-index (GoogleScholar): 17
- *i10*-index (GoogleScholar): 31

Identificatori unici

- ORCID: 0000-0003-1527-0508 (<https://orcid.org/0000-0003-1527-0508>)
- <https://publons.com/researcher/2750282/monica-r-nemtanu/>
- Web of Science Researcher ID: [B-8562-2012](https://www.webofscience.com/authid/detail.uri?authorId=58883695400)
- Scopus Author ID: 58883695400 & (<https://www.scopus.com/authid/detail.uri?authorId=58883695400>)
- BrainMap ID: U-1700-035Y-6427 (<https://www.brainmap.ro/monica-roxana-nemtanu>)
- https://scholar.google.com/citations?hl=en&user=dj_uXnUAAAAJ
- <https://www.researchgate.net/profile/Monica-Nemtanu>
- <https://www.linkedin.com/in/monica-r-nemtanu-6874b414/>

Listă de publicații

I. Publicații în reviste științifice

1. R.K. Gupta, S. Pipliya, J. Patel, P.P. Srivastav, R. Castro-Muñoz, C.-K. Wang, **M.R. Nemțanu**, Essential oil-embedded starch based films for active packaging: insights into migration, stability, and preservation efficiency, *Trends in Food Science & Technology*, Vol. 163, 105149, September 2025 (ISSN 0924-2244, IF₂₀₂₄=15.4; Q1) <https://doi.org/10.1016/j.tifs.2025.105149>
2. E. Asiamah, Y. Wang, J. Gan, D.-H. Geng, **M.R. Nemțanu**, S. Sharafeldin, Y. Cheng, Effects of pre-gelatinized starch and dry starch supplementation on the structural and functional integrity of single-component smooth pea starch noodles, *International Journal of Biological Macromolecules*, Vol. 319, Part 2, 144267, August 2025 (ISSN 0141-8130, IF₂₀₂₄=8.5; Q1) <https://doi.org/10.1016/j.ijbiomac.2025.144267>
3. P.P. Akhila, K.V. Sunooj, T. Jayasuya, V. Nayana, P.T.N. Sharmila, B. Aaliya, M. Navaf, A. Annamalai, B. Indumathy, S. Yugeswaran, S.K. Sinha, S. Sabu, A. Sasidharan, V. Yadav, J. George, **M.R. Nemțanu**, Study on the influence and application of fatty acid incorporation in hausa potato starch film fabricated from plasma activated water assisted annealing modification: Assessment on fruit coating potential, *Food Chemistry*, Vol. 482, 144205, 1 August 2025 (ISSN 0308-8146, IF₂₀₂₄=9.8; Q1) <https://doi.org/10.1016/j.foodchem.2025.144205>
4. P.P. Akhila, K.V. Sunooj, **M.R. Nemțanu**, T. Sakshi, B. Aaliya, M. Navaf, A. Annamalai, B. Indumathy, S. Yugeswaran, S.K. Sinha, D.N. Yadav, M.C. Joshi, A. Jebreen, K.P. Sudheer, J. George, 3D printing of hausa potato starch: Assessing a new dimension of cold plasma treatment using varied feed gases, *International Journal of Biological Macromolecules*, 302, 140655, April 2025 (ISSN 0141-8130, IF₂₀₂₄=8.5; Q1) <https://doi.org/10.1016/j.ijbiomac.2025.140655>
5. E. Asiamah, **M.R. Nemțanu**, M. Brașoveanu, D.-H. Geng, W. Yiming, K. Wang, Y. Cheng, Unveiling the suitability of C-starch as functional food: A pairwise interaction of lipids, and polyphenol components (LIPOP), *Carbohydrate Polymers*, 353C, 123279, 1 April 2025 (ISSN 0144-8617, IF₂₀₂₄=12.5; Q1) <https://doi.org/10.1016/j.carbpol.2025.123279>
6. M. Demeter, I. Călina, A. Scărișoreanu, **M.R. Nemțanu**, M. Brașoveanu, M. Micutz, M. Dumitru, Formulation, E-Beam Crosslinking, and Comprehensive Characterisation of Lavender Oil-Enriched Hydrogels, *Polymers*, 16(22), 3150, 2024 (EISSN 2073-4360, IF₂₀₂₄=4.9; Q1) <https://doi.org/10.3390/polym16223150>
7. F. Sher, A. Hayward, A. El Guerra, B. Wang, I. Ziani, H. Hrnjic, E. Boškailo, A. Chupin, **M.R. Nemțanu**, Advanced metal-organic frameworks for superior carbon capture, high-performance energy storage and environmental photocatalysis – a critical review, *Journal of Materials Chemistry A*, Vol. 12, Issue 41, 27932-27973, 2024 (ISSN 2050-7488, IF₂₀₂₄=9.5; Q1) <https://doi.org/10.1039/D4TA03877K>
8. F. Sher, I. Ziani, N. Al-Shara, A. Chupin, N. Horo, B. Wang, S. Rahman, B. Fareed, **M.R. Nemțanu**, Critical insights into eutectic molten hydroxide electrolysis for sustainable green hydrogen production, *Sustainable Energy & Fuels*, Vol. 8, Issue 19, 4429-4452, 2024 (ISSN 2398-4902, IF₂₀₂₄=4.1; Q2) <https://doi.org/10.1039/D4SE01060D>
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31. M. Culea, A. Iordache, **M. Nemțanu**, R. Minea, *GC/MS study of sea buckthorn oil*, Fifth Conference on Isotopic and Molecular Processes (PIM – 2007) – Abstracts, p 192, Cluj-Napoca, Romania, September 20-22, 2007
32. M. Culea, A. Iordache, **M. Nemțanu**, A. Pinte, *Gas Chromatography-mass Spectrometry Applications for Sea Buckthorn Characterization*, 5th Euro Fed Lipid Congress and 24th Symposium of the Nordic Lipidforum - OILS, FATS and LIPIDS: From Science to Applications - Innovations for a better World – Book of Abstracts, p 171, Gothenburg, Sweden, 16-19 September 2007
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34. R. Minea, **M.R. Nemțanu**, M. Culea, G. Damian, C. Balotescu, M. Bucur, E. Mazilu, *Use of electron beam treatment to improve the microbiological safety of sea buckthorn oil*, 9th European Conference on Accelerators in Applied Research and Technology (ECAART-9) – Book of Abstracts, p 114, Florence, Italy, September 3-7, 2007
35. R. Minea, **M.R. Nemțanu**, M.I. Popescu, *Effects of the Electron Beam Treatment on the Colorimetric and Rheological Behaviour of the Sea Buckthorn Oil*, Abstracts – 1st International Chester Food Science and Technology Conference (ICFST), p 64, Chester, England, 10th-13th April 2007
36. C.P. Lungu, A. Anghel, I. Mustata, V. Zaroschi, A.M. Lungu, P. Chiru, C.C. Surdu-Bob, C. Oproiu, R. Minea, **M.R. Nemțanu**, I. Văță, E. Ivanov, D. Dudu, M. Lazarescu, C. Logofatu, C. Negri, B. Bojin, F. Miculescu, M. Miculescu, A. Kiss, M. Braic, V. Braic, *Preparation and Characterization of Beryllium Thin Films Deposited on W, C and Cu by Thermionic Vacuum Arc Technique*, National Conference of Applied Physics – Book of Abstracts, p 138, ISBN10: 973-716-442-3, ISBN 13: 978-973-716-442-1, Iași, Romania, 8-9 December 2006
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38. **M.R. Nemțanu**, R. Minea, E. Mazilu and N. Radulescu, *Microbial Safety Improvement of Sea Buckthorn by Electron Beam Irradiation*, 6th International Conference of the Balkan Physical Union (BPU-6) – Book of Abstracts, p 1093, 22-26 August 2006, Istanbul, Turkey (published in AIP Conference Proceedings – Sixth International Conference of the Balkan Physical Union Istanbul (Turkey), 22-26 August 2006, ISBN: 978-0-7354-0404-5, ISSN: 0094-243X, vol. 899, p 792, 2007)
39. **M.R. Nemțanu**, R. Minea, E. Mitru, *Electron Beam Influence on Microcrystalline Cellulose*, 6th International Conference of the Balkan Physical Union (BPU-6) – Book of Abstracts, p 1092, 22 – 26 August 2006, Istanbul, Turkey (published in AIP Conference Proceedings – Sixth International Conference of the Balkan Physical Union Istanbul (Turkey), 22-26 August 2006, ISBN: 978-0-7354-0404-5, ISSN: 0094-243X, vol. 899, p 791, 2007)
40. D. Stan-Cristea, B. Constantinescu, R. Bugoi, **M. Nemțanu**, P. Ioan, *Studies on Proton Irradiation-Induced Modifications in Ultraviolet Transmission Properties on KU1 Quartz Glass Samples*, 6th International Conference of the Balkan Physical Union (BPU-6) – Book of Abstracts, p 585, Istanbul, Turkey, 22-26 August 2006
41. R. Minea, **M.R. Nemțanu**, M. Brasoveanu and E. Mitru, *Rheological Behavior of Electron Beam Irradiated Maize Starch*, Abstracts – 6th International Balkan Workshop on Applied Physics (IBWAP 2005), p 138, Constanța, Romania, July 5-7th, 2005
42. R. Minea, M. Brasoveanu, **M.R. Nemțanu** and E. Mitru, *Evaluation of Irradiated Fresh Herbs*, Abstracts – 6th International Balkan Workshop on Applied Physics (IBWAP 2005), p 138, Constanța, Romania, July 5-7th, 2005
43. B. Constantinescu, R. Bugoi, **M. Nemțanu**, P. Ioan, D. Stan, *Studies on Proton Irradiation-Induced Modifications in Ultraviolet Transmission Properties on KU1 Quartz Glass Samples*, Abstracts – 6th International Balkan Workshop on Applied Physics (IBWAP 2005), p 117, Constanța, Romania, July 5-7th, 2005
44. M.M. Brasoveanu, N.M. Grecu, **M.R. Nemțanu**, R. Minea, V.V. Grecu, *Free Radicals in Electron Beam Irradiated Green Coffee Beans Studied by Electron Paramagnetic Resonance Spectroscopy*, 9th International Workshop Electron Magnetic Resonance of Disordered Systems (EMARDIS-05) – Abstracts, Sofia-Boyana, Bulgaria, June 8-15, 2005
45. R. Minea, M. Brasoveanu, **M. Nemțanu**, S. Manea, V. Tamas, E. Mazilu, S. Setnic, N. Radulescu, C. Tanase, *The Effect of Ionising Radiation on Certain Biologically Active Compounds and Enzymatic Activity of Spirulina platensis*, Physics Conference (TIM-04) – Abstract Book, Addendum, Timișoara, Romania, November 26th-27th, 2004
46. N. Georgescu, R. Minea, **M. Nemțanu**, M. Brasoveanu, *Production of oxidant agents in water, by using e-beam, combined with electrical discharges*, 8th European Conference on Accelerators in Applied Research and Technology (ECAART-8), p 90, Paris, France, September 20-24, 2004
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49. M.M. Brasoveanu, **M.R. Nemtanu**, A. Tirlea, R. Minea, V.V. Grecu, *Studies Regarding the Possibility to Use Electron Paramagnetic Resonance on Irradiated Coffee Identification*, Book of Abstracts – First International Meeting on Applied Physics (APHYS – 2003), p 85, Badajoz, Spain, October 13-18th 2003
50. **M.R. Nemtanu**, M.M. Brasoveanu, A. Tirlea, R. Minea, *Physical Methods for Irradiated Food Discrimination*, 4th International Balkan Workshop on Applied Physics (IBWAP 2003) – Abstracts, p 108, Constanța, Romania, September 25-27th, 2003
51. M.M. Brasoveanu, A. Tirlea, **M.R. Nemtanu**, R. Minea, *Rheological Method for Irradiated Coffee*, 4th International Balkan Workshop on Applied Physics (IBWAP 2003) – Abstracts, p 108, Constanța, Romania, September 25-27th, 2003
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53. B. Constantinescu, **M. Nemtanu**, M. Brasoveanu, D. Stan, P. Ioan, R. Bugoi, *Gamma and Proton Degradation in Optical Transmission Materials*, 4th International Balkan Workshop on Applied Physics (IBWAP 2003) – Abstracts, p 73, Constanța, Romania, September 25-27th, 2003
54. **M.R. Nemtanu** and B. Constantinescu, *Gamma and Proton Irradiation Effects on KU1 Glass Quartz*, International School of Atomic and Molecular Spectroscopy. 20th Course: Frontiers of Optical Spectroscopy. Investigating Extreme Physical Conditions with Advanced Optical Techniques – Proceedings, p 41, May 16 - June 1, 2003, Erice, Italy (publicat și în *Frontiers of Optical Spectroscopy. Investigating Extreme Physical Conditions with Advanced Optical Techniques*, NATO Science Series - II. Mathematics, Physics and Chemistry, Kluwer Academic Publishers/Dordrecht/Boston/London, vol. 168, ISBN 1-4020-2750-8, p 747)
55. R. Minea, N. Georgescu, Al. Vulpe, G. Bajeu, M. Brasoveanu, **M. Nemtanu**, *A System for Pulsed Corona Plasmas, with Ecological Applications*, Ceres Programme – Annual Scientific Session, ISBN 973-8488-09-5, pp II.89-II.90, Bucharest, Romania, 2-3 December 2002
56. **M.R. Nemtanu**, M. Brasoveanu, *Preliminary Researches Regarding Edible Jet Printing Inks*, 12th National Conference of the Romanian Physical Society “Trends in Physics” – Abstracts, p 89, Târgu Mureș, Romania, 26-28 September 2002
57. M.M. Brasoveanu, D. Timus, **M.R. Nemtanu**, *Elaboration of a Method for Surface Electrical Resistivity Modification of Polyamide by Electron Beam Irradiation*, 12th National Conference of the Romanian Physical Society “Trends in Physics” – Abstracts, p 35, Târgu Mureș, Romania, 26-28 September 2002
58. C. Oproiu, D. Martin, F. Scarlat, D. Timus, M. Brasoveanu, **M. Nemtanu**, *Insulating Materials Resistance in Intense Radiation Beams*, 12th National Conference of the Romanian Physical Society “Trends in Physics” – Abstracts, p 32, Târgu Mureș, Romania, 26-28 September 2002

ANEXA 2

Listă de proiecte

I. Director de proiect

1. Iunie 2022 – Decembrie 2024

- Titlu: *Selectare reacții competitive pentru amidon modificat în plasmă*
- Finanțare: Programul Național de Cercetare, Dezvoltare și Inovare III (**competiție de proiect**), prin Ministerul Cercetării, Inovării și Digitalizării, CNCS - UEFISCDI: Proiect PN III-Programul 4 – Cercetare Fundamentală și de Frontieră, PROIECTE DE CERCETARE EXPLORATORIE (PCE 2021) PN-III-P4-PCE-2021-1778 (Contract 51/2022) – 1,135,000 lei (~227,000 EUR)

2. Ianuarie 2018 – Decembrie 2021

- Titlu: *Optimization of electron beam processing of biopolymer-based materials*
- Acord bilateral Academia Română – Academia Bulgară de Științe (cheltuieli de mobilitate între academii)

3. Ianuarie 2014 – Decembrie 2017

- Titlu: *Investigation and optimization of electron beam modification of advanced materials*
- Acord bilateral Academia Română – Academia Bulgară de Științe (cheltuieli de mobilitate între academii)

4. Iulie 2012 – Decembrie 2016

- Titlu: *Polielectroliti prietenoși mediului pe bază de biopolimeri, obținuți prin grefare indusă cu fascicul de electroni, pentru îmbunătățirea parametrilor de calitate a apelor de suprafață și reziduale*
- Finanțare: Programul Național de Cercetare, Dezvoltare și Inovare II (PNCDI II) (**competiție de proiect**), prin Autoritatea Națională de Cercetare Științifică (ANCS): Proiect PN II-PARTENERIATE în Domenii prioritare PN-II-PT-PCCA-2011-3.2-0152 (Contract 64/2012) – 2,580,000 lei (~570,000 EUR)

5. Aprilie 2010 – Noiembrie 2011

- Titlu: *Investigații privind utilizarea de metode neconvenționale împotriva unor importanți agenți patogeni din recoltele cerealiere*
- Finanțare: Programul Național de Cercetare, Dezvoltare și Inovare II (PNCDI II) (**competiție de proiect**), prin Autoritatea Națională de Cercetare Științifică (ANCS): Proiect PN II-CAPACITĂȚI 376/26.04.2010 (Cooperare bilaterală România – Turcia) – 11,095 lei (~2,580 EUR)

6. Septembrie 2007 – Noiembrie 2010

- Titlu: *Obținerea de amidonuri modificate prin tehnologie neconvențională, cu aplicabilitate în industria alimentară*
- Finanțare: Programul Național de Cercetare, Dezvoltare și Inovare II (PNCDI II) (**competiție de proiect**), prin Autoritatea Națională de Cercetare Științifică (ANCS): Proiect PN II-PARTENERIATE în Domenii prioritare 51-007/18.09.2007 – 1,165,443 lei (~340,000 EUR)

7. Iunie – Octombrie 2004

- Titlu: *Cercetări privind obținerea amidonului modificat în câmp de radiații ionizante și neionizante*
- Grant T_d CNCSIS 443/2004 – CNCSIS (**competiție de proiect**) – 4,600 lei (~1,150 EUR)

II. Membru în alte proiecte naționale

1. NUCLEU-LAPLAS VII 30N/12.01.2023: Proiect PN 23 03 01: Cercetări avansate și dezvoltări tehnologice în domeniul laserelor - plasmei - radiațiilor - spațiului (2023 – prezent)
2. NUCLEU-LAPLAS VI 16N/08.02.2019: Proiect PN 19 15 01 01: Cercetări emergente de laseri plasmă, radiații și aplicațiile lor în domeniile de specializare inteligentă și interes public / Faza: Nr. 58, *Impactul sinergetic de tratamente fizice combinate asupra comportamentului reologic al amidonului* (Termen de încheiere a fazei: 14.10.2020) / Responsabil Fază
3. NUCLEU-LAPLAS VI: Cercetări avansate și dezvoltări tehnologice în domeniul laserelor - plasmei - radiațiilor - spațiului (2019 – 2022)
4. NUCLEU-LAPLAS 4N/2016: Proiect PN 16 47 01 03: Studii multidisciplinare cu laseri, plasmă și radiații în domenii de prioritate publică (mediu și sănătate) / Faza: Nr. 4, *Impactul radiațiilor ionizante asupra caracteristicilor spectroscopice ale uleiurilor vegetale comestibile* (Termen de încheiere a fazei: 14.06.2016) / Responsabil Fază
5. NUCLEU-LAPLAS III 09 39 05 02: Cercetări ale tratării combinate cu electroni accelerați și microunde a mediilor materiale cu aplicații în protecția mediului și medicină (Iunie 2009 – Decembrie 2011)
6. NUCLEU-LAPLAS III 09 39 05 01: Efecte macroscopice de interes fundamental și aplicativ ale interacției electronilor accelerați cu materia (Martie 2009 – Noiembrie 2011)
7. PN II-IDEI 349/2007: Straturi subțiri nanocompozite percolative de tip polimer/nanoparticule de carbon sintetizate prin tehnica de piroliza laser, pentru aplicații avansate în electrotehnică (Octombrie 2007 – Octombrie 2010)
8. PN II-PARTENERIATE în Domenii prioritare 51-101/18.09.2007: Supliment alimentar natural cu proprietăți antistress (Septembrie 2007 – Decembrie 2010)/*membru în echipa de cercetare* (2007 – Februarie 2008)
9. PN II-PARTENERIATE în Domenii prioritare 31-061/18.09.2007: Extracte vegetale necontaminate utilizabile în fitoterapie obținute prin tehnologii neconvenționale (Septembrie 2007 – Octombrie 2010)/*membru în echipa de cercetare* (2007 – Februarie 2008)
10. CEEX-Biotech 86/31.07.2006: Aplicarea tratamentului cu fascicule de electroni accelerați în vederea decontaminării microbiene a suplimentelor nutritive din cătină (August 2006 – Septembrie 2008)/*membru în echipa de cercetare* (2006 – Februarie 2008)
11. NUCLEU-LAPLAS II 06 36 05 02: Modificări fizico-chimice și microbiologice ale pulberii de cătină albă tratată cu fascicule de electroni accelerați în vederea asigurării calității microbiene (Ianuarie 2006 – Noiembrie 2008)

12. PNCDI-CERES 4-4/04.11.2004: Modificarea unor biopolimeri prin tratament combinat cu fascicule de electroni accelerați și plasmă corona (Noiembrie 2004 – Septembrie 2006)
13. PNCDI-CERES 4-3/04.11.2004: Distrugerea poluanților organici din apă, cu plasmă corona pulsate in-situ, combinate optim cu catalizatori și cu flux suplimentar de ozon (Noiembrie 2004 – Septembrie 2006)
14. PNCDI-CERES 3-44/05.11.2003: Acțiunea radiațiilor ionizante asupra unor preparate fitoterapeutice iradiate în vederea decontaminării microbiologice (Noiembrie 2003 – August 2005)
15. NUCLEU-LAPLAS 03-17 05 03: Utilizarea tratamentului ionizant în asigurarea securității alimentului și controlul alimentelor iradiate, pe plan mondial și național: situația actuală, direcții de dezvoltare (Mai 2003 – Octombrie 2005)
16. DELTA-B.EN.A în domeniul protecției mediului: Posibilități de identificare prin reovîscozimetrie și rezonanță paramagnetică a boabelor de cafea iradiate (Aprilie – Noiembrie 2003)
17. PNCDI-CERES 46/13.11.2002: Obținerea efectului sinergic, în soluții apoase, al combinației descărcări electrice repetitive – fascicule de electroni accelerați, în scopul maximizării concentrațiilor de agenți depoluanți (Noiembrie 2002 – Noiembrie 2004)
18. PNCDI-CERES 139/15.10.2001: Descoperirea de noi metode pentru creșterea eficienței aplicațiilor ecologice ale plasmelor corona pulsate repetitiv (Octombrie 2001 – Noiembrie 2004)
19. ORIZONT 2000: Cercetări privind acțiunea fasciculelor de electroni accelerați asupra funcționalității unor biomolecule, cu implicații în nutriție, medicină și protecția mediului (Noiembrie 2000 – Iunie 2002)/*membru în echipa de cercetare* (Septembrie 2001 – Iunie 2002)
20. ORIZONT 2000: Studiu privind influența fasciculului accelerat de electroni și a radiației de frânare asupra constituenților agroalimentari (Decembrie 1997 – Octombrie 2001)/*membru în echipa de cercetare* (Septembrie – Octombrie 2001)

List of publications

I. Publications in scientific journals

1. R.K. Gupta, S. Pipliya, J. Patel, P.P. Srivastav, R. Castro-Muñoz, C.-K. Wang, **M.R. Nemțanu**, Essential oil-embedded starch based films for active packaging: insights into migration, stability, and preservation efficiency, *Trends in Food Science & Technology*, Vol. 163, 105149, September 2025 (ISSN 0924-2244, IF₂₀₂₄=15.4; Q1) <https://doi.org/10.1016/j.tifs.2025.105149>
2. E. Asiamah, Y. Wang, J. Gan, D.-H. Geng, **M.R. Nemțanu**, S. Sharafeldin, Y. Cheng, Effects of pre-gelatinized starch and dry starch supplementation on the structural and functional integrity of single-component smooth pea starch noodles, *International Journal of Biological Macromolecules*, Vol. 319, Part 2, 144267, August 2025 (ISSN 0141-8130, IF₂₀₂₄=8.5; Q1) <https://doi.org/10.1016/j.ijbiomac.2025.144267>
3. P.P. Akhila, K.V. Sunooj, T. Jayasuya, V. Nayana, P.T.N. Sharmila, B. Aaliya, M. Navaf, A. Annamalai, B. Indumathy, S. Yugeswaran, S.K. Sinha, S. Sabu, A. Sasidharan, V. Yadav, J. George, **M.R. Nemțanu**, Study on the influence and application of fatty acid incorporation in hausa potato starch film fabricated from plasma activated water assisted annealing modification: Assessment on fruit coating potential, *Food Chemistry*, Vol. 482, 144205, 1 August 2025 (ISSN 0308-8146, IF₂₀₂₄=9.8; Q1) <https://doi.org/10.1016/j.foodchem.2025.144205>
4. P.P. Akhila, K.V. Sunooj, **M.R. Nemțanu**, T. Sakshi, B. Aaliya, M. Navaf, A. Annamalai, B. Indumathy, S. Yugeswaran, S.K. Sinha, D.N. Yadav, M.C. Joshi, A. Jebreen, K.P. Sudheer, J. George, 3D printing of hausa potato starch: Assessing a new dimension of cold plasma treatment using varied feed gases, *International Journal of Biological Macromolecules*, 302, 140655, April 2025 (ISSN 0141-8130, IF₂₀₂₄=8.5; Q1) <https://doi.org/10.1016/j.ijbiomac.2025.140655>
5. E. Asiamah, **M.R. Nemțanu**, M. Brașoveanu, D.-H. Geng, W. Yiming, K. Wang, Y. Cheng, Unveiling the suitability of C-starch as functional food: A pairwise interaction of lipids, and polyphenol components (LIPOP), *Carbohydrate Polymers*, 353C, 123279, 1 April 2025 (ISSN 0144-8617, IF₂₀₂₄=12.5; Q1) <https://doi.org/10.1016/j.carbpol.2025.123279>
6. M. Demeter, I. Călina, A. Scărișoreanu, **M.R. Nemțanu**, M. Brașoveanu, M. Micutz, M. Dumitru, Formulation, E-Beam Crosslinking, and Comprehensive Characterisation of Lavender Oil-Enriched Hydrogels, *Polymers*, 16(22), 3150, 2024 (EISSN 2073-4360, IF₂₀₂₄=4.9; Q1) <https://doi.org/10.3390/polym16223150>
7. F. Sher, A. Hayward, A. El Guerra, B. Wang, I. Ziani, H. Hrnjic, E. Boškailo, A. Chupin, **M.R. Nemțanu**, Advanced metal-organic frameworks for superior carbon capture, high-performance energy storage and environmental photocatalysis – a critical review, *Journal of Materials Chemistry A*, Vol. 12, Issue 41, 27932-27973, 2024 (ISSN 2050-7488, IF₂₀₂₄=9.5; Q1) <https://doi.org/10.1039/D4TA03877K>
8. F. Sher, I. Ziani, N. Al-Shara, A. Chupin, N. Horo, B. Wang, S. Rahman, B. Fareed, **M.R. Nemțanu**, Critical insights into eutectic molten hydroxide electrolysis for sustainable green hydrogen production, *Sustainable Energy & Fuels*, Vol. 8, Issue 19, 4429-4452, 2024 (ISSN 2398-4902, IF₂₀₂₄=4.1; Q2) <https://doi.org/10.1039/D4SE01060D>
9. A.B. Kareem, U.A. Al-Rawi, U. Khalid, F. Sher, F. Zafar, Mu. Naushad, **M.R. Nemțanu**, E.C. Lima, Functionalised graphene oxide dual nanocomposites for treatment of hazardous environmental contaminants, *Separation and Purification Technology*, Vol. 342, 126959, August 2024 (ISSN 1383-5866, IF₂₀₂₄=9.0; Q1) <https://doi.org/10.1016/j.seppur.2024.126959>
10. P.P. Akhila, K.V. Sunooj, S.P. Bangar, B. Aaliya, M. Navaf, B. Indumathy, S. Yugeswaran, S.K. Sinha, S.A. Mir, S. Mounir, J. George, **M.R. Nemțanu**, Assessing the impact of plasma-activated water-assisted heat-moisture treatment on the extrusion-recrystallization process of hausa potato starch, *Carbohydrate Polymers*, Vol. 335, 122081, 1 July 2024 (ISSN 0144-8617, IF₂₀₂₄=12.5; Q1) <https://doi.org/10.1016/j.carbpol.2024.122081>
11. M. Brașoveanu, H. Sabbaghi, D. Ticoș, M. Dumitru, K.V. Sunooj, F. Sher, **M.R. Nemțanu**, Enhancing starch functionality through synergistic modification via sequential treatments with cold plasma and electron beam irradiation, *International Journal of Biological Macromolecules*, Vol. 270, Part 1, 132346, June 2024 (ISSN 0141-8130, IF₂₀₂₄=8.5; Q1) <https://doi.org/10.1016/j.ijbiomac.2024.132346>
12. F. Sher, E. Boškailo, N. Smječanin, **M.R. Nemțanu**, E.K. Sher, E.C. Lima, Magnetic multifunctional nanomaterials for enhanced transverse chemical and bioanalytical applications – A review, *TrAC Trends in Analytical Chemistry*, Vol. 173, 117622, April 2024 (ISSN 0165-9936, IF₂₀₂₄=12.0; Q1) <https://doi.org/10.1016/j.trac.2024.117622>
13. B. Aaliya, K.V. Sunooj, A. Vijayakumar, P. Krina, M. Navaf, P.P. Akhila, P. Raviteja, S. Mounir, M. Lackner, J. George, **M.R. Nemțanu**, Fabrication and characterization of talipot starch-based biocomposite film using mucilages from different plant sources: A comparative study, *Food Chemistry*, Vol. 438, 1380011, 16 April 2024 (ISSN 0308-8146, IF₂₀₂₄=9.8; Q1) <https://doi.org/10.1016/j.foodchem.2023.138011>
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