



IULIANA STOICA

Date of birth: 18/06/1981 | **Nationality:** Romanian | **Phone number:**

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Address: 41, FINTINILOR STREET, 700337, IASI, Romania (Home)

WORK EXPERIENCE

SCIENTIFIC RESEARCHER III - "PETRU PONI" INSTITUTE OF MACROMOLECULAR CHEMISTRY - 01/01/2025 - Current - IASI, ROMANIA

Department: Physical Chemistry Lab | **Address:** Aleea Grigore Ghica Voda, 41A, Iasi, 700487, Iasi, Romania |

Website: www.icmpp.ro

- morphological, spatial and functional characterization of a wide range of polymers, copolymers, polymeric composites, polymeric mixtures, alloys and evaluation of local physical properties (adhesion, elasticity) using atomic force microscopy (AFM)
- modification of polymer surfaces (by lithography, mechanical structuring, plasma treatment, UV irradiation, laser irradiation) and complete characterization of the resulting nanostructures
- determination of piezoelectric properties and colorimetric characteristics on polymers, copolymers, polymeric composites, polymeric mixtures, alloys
- involved in writing and publishing of scientific articles, in indexed journals
- involved in communicating the scientific results produced by own activity
- use and maintenance of an Atomic Force Microscope (AFM) device
- use and maintenance of a d33 PiezoMeter System
- use of a CRI Illuminance Meter
- teaching courses and laboratories specific to the research field, for students, master students and PhD students
- organizing and carrying out, on request, training sessions within the laboratory
- member of guidance and academic integrity committees for PhD students

SCIENTIFIC RESEARCHER - "PETRU PONI" INSTITUTE OF MACROMOLECULAR CHEMISTRY - 30/06/2019 - 31/12/2024 - IASI, ROMANIA

Department: Physics of Polymers and Polymeric Materials Lab / Physical Chemistry Lab |

Address: Aleea Grigore Ghica Voda, 41A, 700487, Iasi, Romania | **Website:** www.icmpp.ro

- fundamental research

RESEARCH ASSISTANT - "PETRU PONI" INSTITUTE OF MACROMOLECULAR CHEMISTRY - 31/10/2010 - 30/06/2019 - IASI, ROMANIA

Department: Polymer Physics and Structure Lab / Physics of Polymers and Polymeric Materials Lab |

Address: Aleea Grigore Ghica Voda, 41A, 700487, Iasi, Romania | **Website:** www.icmpp.ro

- fundamental research

EDUCATION AND TRAINING

2020 - 2021 Iasi

POSTDOCTORAL RESEARCHER - L'OREAL - UNESCO NATIONAL POSTDOCTORAL FELLOWSHIP PROGRAM "FOR WOMEN IN SCIENCE" "Petru Poni" Institute of Macromolecular Chemistry, Physics of Polymers and Polymeric Materials Lab

- Research topic: "Patterned polyimides: an alternative to conventional support materials used in current flexible electronic devices"

Level in EQF EQF level 8

2014 – 2015 Bucuresti, Romania

POSTDOCTORAL RESEARCHER POLITEHNICA University of Bucharest, Faculty of Applied Chemistry and Materials Science

- Research topic: "Three-dimensional micro- and nanostructures induced on polymeric films optimized for optoelectronic and biomedical applications"
- Coordinator: Prof. Dr. Eng. Dan Sorin Vasilescu

Address Department of Bioresources and Polymer Science, Bucuresti, Romania | **Level in EQF** EQF level 8

2006 – 2011 Iasi, Romania

DOCTORAL STUDIES - PHD "Petru Poni" Institute of Macromolecular Chemistry, Polymer Physics and Structure Lab

- PhD thesis: "Atomic force microscopy applied to the study of polymers"
- Coordinator: Dr. Virgil Bărbui, CSI

Address Laboratory of Atomic force microscopy, Iasi, Romania | **Level in EQF** EQF level 8

2008 – 2009 Iasi, Romania

MASTER'S DEGREE, SPECIALIZATION: POLYMERIC BIOMATERIALS Technical University „Gh. Asachi ", Faculty of Chemical Engineering and Environmental Protection

- Dissertation paper: "AFM studies on the nano-structuring capacity of some rigid or flexible chain azopolymers"
- Coordinator: Prof. Dr. Eng. Nicolae Hurduc

Address Department of Natural and Synthetic Polymers, Iasi, Romania | **Level in EQF** EQF level 7

2004 – 2006 Iasi, Romania

MASTER'S DEGREE, SPECIALIZATION: PHYSIOTHERAPY AND MEDICAL RECOVERY BY PHYSICAL METHODS "Al.I.Cuza" University, Faculty of Physics

- Dissertation paper: "Making a device used to monitor tissue bioelectric act
- Coordinator: Prof. Dr. Tudor Luchian

Address Departament of biophysics and medical physics, Iasi, Romania | **Level in EQF** EQF level 7

2000 – 2004 Iasi, Romania

UNIVERSITY STUDIES, SPECIALIZATION: MEDICAL PHYSICS "Al.I.Cuza" University, Faculty of Physics

- Diploma paper: "Estimation of effective doses in diagnostic radiology"
- Coordinators: Dr. Olga Jacob and Prof. Dr. Erzilia Lozneau

Level in EQF EQF level 6

1996 – 2000 Moinesti, Bacau, Romania

HIGH-SCHOOL STUDIES "Grigore Cobălcescu" Technical College

- Profile: mathematics-physics

Level in EQF EQF level 4

● LANGUAGE SKILLS

Mother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
FRENCH	B2	B1	A2	A2	A2
ITALIAN	B2	A2	A2	A2	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **SKILLS**

Digital skills

Digital topography analysis software (MountainsSPIP Academic, Nova, IA, WSxM, n-Surf, Gwyddion...) | Image Processing | Image Analysis | Software for graphing and analysis (SigmaPlot, OriginLab) | Excellent knowlende of graphic software (Adobe Photoshop Adobe Indesign Adobe Illustrator) | COMSOL Multiphysics® software | Molecule editor ChemDraw | Social Media

Diploma for OIPVD - Data Entry, Validation, and Processing Operator

creating a website | Microsoft Word | Microsoft Excel | Microsoft Powerpoint

● **JOB-RELATED SKILLS**

Job-related skills

- skills in using atomic force microscope (AFM)
- skills in morphological, spatial and functional characterization of a wide range of polymers, copolymers, polymeric composites, polymeric mixtures, materials used in the realization of fixed dental works (zirconium, dental ceramics, metal alloys: titanium, chromium-nickel, chromium-cobalt)
- deduction of local physical properties (adhesion, elasticity) induced by various surface processes (mechanical nanostructure, plasma treatment, UV irradiation, laser irradiation)
- mentoring skills (as researcher in AFM field responsible for the training of students and as member of guidance and academic integrity committees for PhD students)
- the ability to disseminate the research results by developing and writing scientific articles (over 150 ISI articles) and presenting oral communications and posters at specialized conferences
- good editing skills acquired as an editor at Apple Academic Press Inc.—Taylor & Francis Group for 4 books

● **ORGANISATIONAL SKILLS**

Organisational skills

- good organisational skills gained as member of the organizing committee for the Session of scientific communications PROGRESSES IN SCIENCE OF ORGANIC AND MACROMOLECULAR COMPOUNDS in 2007, 2009, 2011, 2013 and member of the program committee for the International Conference in Photonics, Optics and Laser Technology in 2014, 2015, 2017 and 2019
- good skills of analysis, assistance, coordination and planning acquired as a member in various research teams

● **COMMUNICATION AND INTERPERSONAL SKILLS**

Communication and interpersonal skills

- good communication skills, relationships skills, receptivity and ability to adapt to new situations, gained through my experience as researcher in AFM laboratory
- excellent socializing skills with people gained through my experience as participant/presenter at courses, conferences, training sessions
- ability to work in a team gained through my experience as key expert in national and international projects

● REPRESENTATIVE PAPERS PUBLISHED IN ISI INDEXED / QUOTED JOURNALS

Representative papers

- **I. Stoica***, C. Ursu, E.-L. Epure, M. Asandulesa, A.I. Barzic, I. Sava; Testing the Photo/Piezo Actuation of Azo-Containing Polymers with Supramolecular Structures for Applications as Wireless Actuators; *ACS Appl. Polym. Mater.* 8, 790–805 (2026)
- M.I. Avadanei, **I. Stoica***, A.I. Barzic, R.M. Albu, I. Mihaila, I. Sava, C.-P. Constantin, M.-D. Damaceanu; Unraveling the Effect of Polarized Light and Abrasion in Applicative Customizing of the Azo-Polyimide Morphology; *ACS Appl. Polym. Mater.* 7, 9194-9210 (2025)
- **I. Stoica**, A. I. Barzic, C. Ursu, G. Stoian, E. G. Hitruc, I. Sava; Atomic force microscopy probing and analysis of polyimide supramolecular systems for sensor devices; *Sensors* 23: 4489/1-17 (2023)
- I. Sava, M. Asandulesa, A. I. Barzic, R. M. Albu, **I. Stoica***; Testing the performance of the azopolyimide supramolecular systems as substrate for sensors based on platinum electrodes; *Materials* 16: 4980/1-16 (2023)
- **I. Stoica**, A.I. Barzic, R.M. Albu, R.-D. Rusu, M.-D. Damaceanu; Alignment layers based on poly(oxadiazolenaphthylimide)s: new aspects on tuning anisotropy of the surface morphology and adhesion via rubbing; *Polym. Adv. Technol.* 33, 870 (2022)
- **I. Stoica**, R.M. Albu, C. Hulubei, D.G. Astanei, R. Burlica, G.A.M. Mersal, T.A. Seaf Elnasr, A.I. Barzic, A.Y. Elnaggar; A new texturing approach of a polyimide shielding cover for enhanced light propagation in photovoltaic devices; *Nanomaterials* 12, 3249 (2022)
- A.I. Barzic, R.M. Albu, C. Hulubei, S.F. Mahmoud, O.A. Abu Ali, Z.M. El-Bahy, **I. Stoica**; Polyimide layers with high refractivity and surface wettability adapted for lowering optical losses in solar cells; *Polymers* 14, 4049 (2022)
- **I. Stoica**, I. Sava, E.-L. Epure, V. Tiron, J. Konieczkowska, Ewa Schab-Balcerzak. Advanced morphological, statistical and molecular simulations analysis of laser-induced micro/nano multiscale surface relief gratings. *Surf. Interfaces Surf. Interf.* 29: 101743 (2022)
- **I. Stoica**, E.-L. Epure, C.-P. Constantin, M.-D. Damaceanu, E.-L. Ursu, I. Mihaila, I. Sava; Evaluation of local mechanical and chemical properties via AFM as a tool for understanding the formation mechanism of pulsed UV laser-nanoinduced patterns on azo-naphthalene-based polyimide films; *Nanomaterials*. 11: 812(1-23) (2021)
- A. I. Barzic, R. M. Albu, **I. Stoica**; Surface alteration implications on potential use of semi-alicyclic polyimide as biomedical materials; *Appl. Surf. Sci.* 540: 148377(1-14) (2021)
- **I. Stoica**, I. Sava, G. Bulai, G. Stoian, M. Strat, S. Gurlui, B. Oprisan; Development and morphological characterization of novel polyimide/metal nano hybrid materials; *Mater. Plast.* 57(2): 94-103 (2020)
- **I. Stoica**, M. Aflori, E.G. Ioanid, C. Hulubei; Effect of oxygen plasma treatment and gold sputtering on topographical and local mechanical properties of copolyimide/gold micropatterned structures; *Surf. Interf. Anal.* 50(2): 154-162 (2018)
- I. Sava, **I. Stoica***, I. Mihaila, V. Pohoata, I. Topala, G. Stoian, N. Lupu; Nanoscale analysis of laser -induced surface relief gratings on azo-copolyimide films before and after gold coating; *Polym. Test.* 72: 407-415 (2018)
- **I. Stoica**, A.I. Barzic, C. Hulubei; Fabrication of stable nanochannels on polyimide films using Dynamic Plowing Lithography; *Appl. Surf. Sci.* 426: 307-314 (2017)
- **I. Stoica**, A.I. Barzic, C. Hulubei, D. Timpu; Statistical analysis on morphology development of some semialicyclic polyimides using atomic force microscopy; *Microsc. Res. Tech.* 76(5):503–513 (2013)
- **I. Stoica**, A.I. Barzic, C. Hulubei; The impact of rubbing fabric type on the surface roughness and tribological properties of some semi-alicyclic polyimides evaluated from atomic force measurements; *Appl. Surf. Sci.* 268(1): 442–449 (2013)
- **I. Stoica**, L. Epure, I. Sava, V. Damian, N. Hurduc; An atomic force microscopy statistical analysis of laser-induced azo-polyimide periodic tridimensional nanogrooves; *Microsc. Res. Tech.* 76(9):914–923 (2013)

● BOOK CHAPTERS

Book chapters

- **I. Stoica**; Patterning polyimide films at nanoscale using dynamic plowing lithography (DPL); in *Imidic polymers and green polymer chemistry: New technology and developments in process and products*; Edited by A. I. Barzic, N.K. Rawat, A.K.Haghi; Apple Academic Press, Taylor & Francis Group, in press (2020)
- I. Sava, **I. Stoica**; The Influence of Azobenzene Content on Azopolyimides Capacity to Form Laser-Induced Surface Relief Gratings; in *Carbon-Related Materials In Honor of Nobel Laureate Akira Suzuki's Lecture at IUMRS-ICEM 2018*; Edited by C. Miron, P. Mele, S. Kaneko, T. Endo; Springer Nature Switzerland AG 2020, 87-102 (2020)
- **I. Stoica**, N. Hurduc; Structuring of polymer surfaces via laser irradiation as a tool for microand nanotechnologies; in *Electromagnetic radiation in analysis and design of organic materials: electronic and biotechnology applications*; Edited by D.O. Dorohoi, A.I. Barzic, M. Aflori; CRC Press, Taylor & Francis Group, 191-206 (2017)
- **I. Stoica**; From macro- to nanoscale surface morphological features of multiphase polymer films; in *Multiphase polymer systems: from micro to nanostructural evolution in advance technologies*; Edited by A.I. Barzic, S. Ioan; CRC Press, Taylor & Francis Group, Boca Raton, 139-154 (2016)
- A.I. Barzic, **I. Stoica**, C. Hulubei; Semi-alicyclic polyimides: insights into optical properties and morphology patterning; in *High performance polymers-polyimides based-from chemistry to applications*; Edited by Marc J.M. Abadie; InTech Publisher, Rijeka, Croatia, 167-198 (2012)

● EDITED BOOKS

Edited books

1. Carbon Nanotubes for a Green Environment. Balancing the Risks and Rewards; S. Kulkarni, **I. Stoica**, A. K. Haghi, Eds.; CRC Press, Apple Academic Press, Taylor & Francis Group, Boca Raton, FL, USA, 314 p (2022)
2. Applications of Biodegradable and Bio-Based Polymers for Human Health and a Cleaner Environment; **I. Stoica**, O. V. Mukbaniani, N. K. Rawat, A. K. Haghi, Eds.; CRC Press, Apple Academic Press Inc., Taylor & Francis Group, Boca Raton, FL, USA, 576 p (2022)
3. Advances in Energy Materials. New Composites and Techniques for Future Energy Applications; **I. Stoica**, A. R. Abraham, A. K. Haghi, Eds.; CRC Press, Apple Academic Press, Taylor & Francis Group, Boca Raton, FL, USA, 348 p (2024)
4. Modern Magnetic Materials: Properties and Applications; **I. Stoica**, A. R. Abraham, A. K. Haghi, Eds.; Apple Academic Press, CRC Press, Taylor & Francis Group, Palm Bay, FL, USA, 326 p (2024)

● PATENTS

Patents

1. OSIM patent Nr. RO 134926 B1, 30.05.2024, BOPI nr.5/2024, Title of the invention: Film polimeric pe baza de copoliimida de tip aromatic/alicyclic transparenta, cu rol de incapsulant pentru diode cu pierderi optice reduce (Transparent aromatic/alicyclic copolyimide-based polymeric film, serving as an encapsulant for diodes with reduced optical losses), Coordinator "Petru Poni" Institute of Macromolecular Chemistry, Inventors: A.I. Barzic, R.M. Albu, I. Stoica, C. Hamciuc, E. Hamciuc, C. Hulubei Coordinator "Petru Poni" Institute of Macromolecular Chemistry, Inventors: A.I. Barzic, R.M. Albu, I. Stoica, C. Hamciuc, E. Hamciuc, C. Hulubei
2. Submitted patent to OSIM: Title of the invention: Extensor uniaxial pentru filme polimerice adaptat la microscopul de forta atomica (Uniaxial stretching device for polymer films adapted to atomic force microscope), Coordinator "Petru Poni" Institute of Macromolecular Chemistry, Inventors: I. Stoica, D. Timpu, A.I. Barzic, registration number A/00150/28.03.2024
3. Submitted patent to OSIM: Title of the invention: Acoperiri poliimidice multistratificate cu indice de refractie in gradient utilizabile pentr reducerea pierderilor optice in celule solare (Multilayer polyimide coatings with a gradient refractive index usable for reducing optical losses in solar cells), Coordinator "Petru Poni" Institute of Macromolecular Chemistry, Inventors: A.I. Barzic, I. Stoica, C. Hulubei, registration number A2022 00420/18.07.2022

● PROJECTS

Projects

1. Bilateral cooperation grant between the Romanian Academy and the National Research Council of Italy, "Advanced strategies for tailoring the morphology of ceramic-polymer piezoelectric composites to enhance their responsive behaviour in next-generation sensing technologies". P2-AR-CNR-2026-2028 (Role in this project: Team member).
2. Bilateral cooperation grant between the Romanian Academy and the National Research Council of Italy, "Smart functional polymer-based composites for sustainable energy harvesters". P2-AR-CNR-2023-2025 (Role in this project: Team member)
3. Original alternative approach in tailoring coexistent photo/piezo-actuation on polyimides substrates for flexible/stretchable electronics and sensors. PN-III-P1-1.1-TE-2021-1044. 2022-2024 (Role in this project: Project leader)
4. Innovative strategies of enhancing energy storage of dielectrics via reinforcement of green polymers with natural fillers for eco-compatible devices. PN-III-P1-1.1-TE-2021-0762. 2022-2024 (Role in this project: Team member)
5. Innovative strategies for reducing optical losses through polymeric protective materials for more efficient photovoltaic devices. PN-III-P1-1.1-TE-2019-1878. 2020-2022 (Role in this project: Team member)
6. L'Oreal - Unesco National Program "For Women in Science". 2020-2021 (Role in this project: Postdoctoral researcher)
7. Innovative technologies based on polymers for the obtaining of new advanced materials. PN-III-P1-1.2-PCCDI-2017-042. 2018-2020 (Role in this project: Team member)
8. New approaches in designing polymer surfaces with controllable pattern for applications in biomedicine and high technologies. PN-II-RU-TE-2014-4-2976. 2015-2017 (Project member)
9. Excellence in research through doctoral and post-doctoral fellowships. POSDRU/159/1.5/S/132397. 2014-2015 (Role in this project: Postdoctoral researcher)
10. Promoting equal opportunities in university and academic career for women in Romania. POSDRU/144/6.3/S/127928. 2014-2015 (Role in this project: Project member)
11. Polyrotaxanes based on π -Conjugated backbone for Micro/Optoelectronic Applications. PN-II-ID-PCE-2011-3-0035. 2013-2016 (Role in this project: Member of the target group)

12. Complex systems based on polymers containing alicyclic structures for high performance materials. PN-II-ID-PCE-2011-3-0937. 2011 – 2016. (Role in this project: Team member)
13. Conjugated polymers with complex supramolecular structures: design, synthesis, structural analysis and study on the strategy for use in micro/optoelectronics. Grant Agreement ID: 998. 2009-2011 (Role in this project: Team member)
14. The European Polysaccharide Network of Excellence; EPNOE; Grant Agreement ID:500375. 2005-2008 (Role in this project: Team member)

AWARDS

Awards

- Silver Medal at European Exhibition of Creativity and Innovation EUROINVENT 2025, Iasi, Romania (8-10.04.2025) for "Uniaxial stretching device for polymer films adapted to atomic force microscope", authors Iuliana Stoica, Daniel Timpu, Andreea Irina Barzic
- Gold Medal at European Exhibition of Creativity and Innovation EUROINVENT 2024, Iasi, Romania (6-8.06.2024) for "Original alternative approach in tailoring coexistent photo/piezo-actuation on polyimides substrates for flexible/stretchable electronics and sensors", authors I. Stoica, I. Sava, C. Ursu, A.I. Barzic, R.M. Albu, M. Asandulesa, I. Butnaru, D. Diaconu
- Gold Medal at European Exhibition of Creativity and Innovation EUROINVENT 2024, Iasi, Romania (6-8.06.2024) for "Innovative strategies to reduce optical losses through shielding polymer materials for more efficient photovoltaics", authors A.I. Barzic, I. Stoica, R.M. Albu, C. Hulubei
- Gold Medal at "Inventica 2024 - science of creativity" the 28th International Conference of Inventics Iași, România (3-5.07.2024) for "Transparent polymeric film based on aromatic/alicyclic copolyimide with encapsulating role for diodes with reduced optical losses", authors A.I. Barzic, R. M. Albu, I. Stoica, C. Hamciuc, E. Hamciuc, C. Hulubei
- Winner of an individual Postdoctoral Fellowship L'Oreal - Unesco National Program "For Women in Science" 2020-2021, with the research project entitled "Structured polyimides: an alternative to conventional materials currently used as substrates for flexible electronic devices"
- Winner of an individual Postdoctoral Fellowship, with the research project entitled "Three-dimensional micro- and nanostructures induced on polymeric films optimized for optoelectronic and biomedical applications," awarded based on a national competition within the project Excellence in research through doctoral and post-doctoral fellowships, POSDRU/159/1.5/S/132397, co-financed from the European Social Fund through the Sectoral Operational Program Human Resources Development 2007-2013, at POLITEHNICA University of Bucharest, Faculty of Applied Chemistry and Materials Science, Department of Bioresources and Polymer Science, Bucuresti (Romania) (08.04.2014- 07.12.2015)
- Winner of the scientific papers competition organized within the project POSDRU/144/6.3/S/127928 „PECAFROM – Promoting equal opportunities in the university and academic career for women in Romania" with the paper "The influence of polysilane chemical structure on optical properties, rubbed film morphology and LC alignment"
- Winner of the international ProIMAGE Contest 2010 (organized by NT-MDT) with the image "Micro Labyrinth"

ADDITIONAL INFORMATION

Research profiles

- UEFISCDI ID (UEF-ID): U-1700-036E-5097
- <https://www.brainmap.ro/iuliana-stoica>
- Research Gate profile link: <https://www.researchgate.net/profile/Iuliana-Stoica>
- ORCID profile link: <https://orcid.org/0000-0002-6792-9581>
- Scholar Google profile link: https://scholar.google.com/citations?hl=ro&user=0e74QOcAAAAJ&view_op=list_works&gmla=AJsN-F6Ajj2EQE2TsQOxMhNg3gYlyCR99C-UdK39sRSXVv1RhyfMmnZFfXfQlhx6j_E4DD77nv3AhfIS3RrgdCi-PFRzwuw

Research activity

- >150 RESEARCH ARTICLES (ISI RATED)
- 2 REVIEW ARTICLES (ISI RATED)
- 13 PROCEEDINGS PAPERS (ISI INDEXED)
- 6 ARTICLES PUBLISHED IN EXTENSO IN SCIENTIFIC NATIONAL JOURNALS RECOGNIZED BY CNCSIS (B +)
- 5 BOOK CHAPTERS
- 4 EDITED BOOKS
- 1 NATIONAL PATENT
- 2 NATIONAL PATENTS UNDER EVALUATION
- 11 RESEARCH PROJECTS (AS A MEMBER)
- 1 RESEARCH PROJECT (AS COORDINATOR)
- 2 POSTDOCTORAL FELLOWSHIPS GAINED THROUGH NATIONAL COMPETITION
- >50 COMMUNICATIONS PRESENTED AT INTERNATIONAL SCIENTIFIC CONFERENCES

Hirsch Index

- Hirsch Index (Web of Science Core Collection): 21
- Hirsch Index (SCOPUS) 23
- Hirsch Index (Google Scholar) 26