



Mădălina Oprea

Date of birth: 13/10/1994

Place of birth: Bucharest, Romania

Nationality: Romanian

Gender: Female

CONTACT

 060381 București, Romania
(Home)

 madalinna.calarasu@gmail.com

 (+40) 760944558

 <https://www.brainmap.ro/madalina-oprea>



europass

WORK EXPERIENCE

NUST Politehnica Bucharest, Faculty of Chemical Engineering and Biotechnologies Bucharest, Romania

Business or Sector Education | **Department** Analytical Chemistry and Environmental Engineering | **Website** <https://chimie.upb.ro/departamente/chimie-analitica-si-ingineria-mediului/>

Assistant Professor

02/2025 – Current

NUST Politehnica Bucharest, Advanced Polymer Materials Group Bucharest, Romania

Business or Sector Professional, scientific and technical activities | **Department** Advanced Polymer Materials Group | **Address** Gheorghe Polizu 1-7, 011061, Bucharest, Romania | **Website** <https://upb.ro/advanced-polymer-materials-group-apmg/>

Science Research Assistant

09/2020 – Current

INCDCP Icechim Bucharest, Romania

Business or Sector Professional, scientific and technical activities | **Department** Polymers and Polymer Composites | **Address** Spl. Independentei 202, 060021, Bucharest, Romania | **Website** <https://icechim.ro/>

Science Research Assistant

09/2018 – 09/2020

Tehnoplus Medical Bucharest, Romania

Business or Sector Human health and social work activities | **Address** Odobesti 1, 032151, Bucharest, Romania

Sales Intern

06/2016 – 09/2016

EDUCATION AND TRAINING

10/2019 – 10/2023 Bucharest, Romania

PhD NUST Politehnica Bucharest, Faculty of Chemical Engineering and Biotechnologies

Address Gheorghe Polizu 1-7, 011061, Bucharest, Romania | **Website** <http://www.chimie.upb.ro/> | **Field of study** Chemical engineering | **Final grade** Summa Cum Laude | **Thesis** Polymeric materials for applications in hemodialysis and osseointegration

10/2017 – 06/2019 București, Romania

MsC NUST Politehnica Bucharest, Faculty of Engineering in Foreign Languages

Address Spl. Independentei 313, 060042, București, Romania | **Website** <http://ing.pub.ro/> | **Field of study** Chemical engineering | **Final grade** 10 | **Thesis** Antibacterial cellulose based materials with potential biomedical applications

10/2013 – 06/2017 București, Romania

BSc NUST Politehnica Bucharest, Faculty of Medical Engineering

Additional qualifications - Psycho-pedagogy certification (Level 1)

Address Gheorghe Polizu 1-7, 011061, București, Romania | **Website** <https://fim.upb.ro/> | **Field of study** Applied sciences | **Final grade** 9.54 | **Thesis** Nanostructured hybrid surfaces for the prevention of tumoral recurrence post-implantation

09/2009 – 05/2013 București, Romania

Computer Operator National College "Ion Neculce" Bucharest

Address Ion Neculce 2, 011238, București, Romania | Website <https://neculce.ro/> | Field of study Mathematics-Informatics |

Final grade 9.21

LANGUAGE SKILLS

MOTHER TONGUE(S): Română

Other language(s):

Engleza

Listening B2

Spoken production B2

Reading B2

Spoken interaction B2

Writing B2

Franceza

Listening A2

Spoken production A2

Reading A2

Spoken interaction A2

Writing A2

Japanese

Listening A1

Spoken production A1

Reading A1

Spoken interaction A1

Writing A1

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

SKILLS

Proficient in using Microsoft Office | ECDL Certificate | OriginPro | OMNIC | ChemDraw | TA Universal Analysis | Matlab (Basic)
| SAP CRM | C/C++/C# | Reference management software (Zotero, EndNote)

PROJECTS

Research projects

Team member in the following projects:

1. **2024 - present:** „New technological approaches in dental technology”, financed by “Vocational and educational training program ERASMUS+ 2023-1-RO01-KA220-VET-000157812”.
2. **2024 - 2025:** Contract No. 760093/23.05.2023, codul CF 213/29.11.2022 „Advanced and personalized solutions for bone regeneration and complications associated with multiple myeloma” from PNRR III-C9-I8.
3. **2021 - 2024:** Contract No. PN-III-P4-ID-PCE-2020-1154 – „Combining hemodialysis with stimulated drug delivery - a new generation of polymeric membranes for advanced biomedical applications – HemDelStim”.
4. **2021 - 2022:** Contract No. PN-III-P1-1.2-PCCDI-2017-1 - UPB Proof of Concept 2020 - „A new generation of membranes based on cellulose derivatives optimized for hemodialysis applications - NovoCellHem”.
5. **2020 – 2021:** Contract No. PN-III-P1-1.2-PCCDI-2017-0407 – „Smart materials for medical applications – INTEL MAT”, PCCDI 39/2018, Subproject 3 – „A new generation of composite membranes for hemodialysis based on derivatized graphene – HEMGRAPHHEM”.
6. **2018 – 2020:** Contract No. PN-III-P1-1.2-PCCDI-2017-0569 - „Closing bioeconomy value chains by obtaining innovative bioproducts demanded by the market – PRO-SPER”, 10PCCDI/2018.

PATENTS

Scientific patents

1. S.I. Voicu, M. Oprea, A.M. Pandele, A. Semenescu, M.C. Costoiu, F. Miculescu, I.V. Antoniac, I.M. Mates, L.I. Cioca - "Dialysis membrane with the ability of controlled release of active substances for the concomitant treatment of chronic renal dysfunction and liver cancer and the procedure for obtaining it", CBI OSIM A 00062/10.02.2023.

HONOURS AND AWARDS

Awards 2020 - 2025

1. Rada Mihalcea Awards for Young Researchers in Science and Engineering 2025 – Special Mention
2. Romanian Society of Biomaterials and Medical Ortovit– 2024 Scholarship
3. Romanian Research Gala 2024 - “Nicolae Vasilescu Karpen” award for the “Energy and Advanced Materials” field, granted to the APMG research group
4. Patent awards for “S.I. Voicu, M. Oprea, A.M. Pandele, A. Semenescu, M.C. Costoiu, F. Miculescu, I.V. Antoniac, I.M. Mates, L.I. Cioca - Dialysis membrane with the ability of controlled release of active substances for the concomitant treatment of chronic renal dysfunction and liver cancer and the procedure for obtaining it”:
 - Euroinvent 2023 Gold Medal
 - WIIPA Special Award 2023
 - University of Life Sciences "King Mihai I" from Timisoara Award 2023
 - Universitatea Stefan cel Mare Suceava Diploma of Excellence Gold Medal 2023
 - Association of Thai Innovation and Invention Promotion Special Prize 2023
 - Toronto International Society of Innovation and Advanced Skills Special Award 2023
 - INCDCP Icechim Excellence Award and Gold Medal 2023
5. League of Romanian Students Abroad – Finalist in the “Romania Postgraduate of the year 2021” category
6. Scientific articles awards:
 - ·PN-III-P1-1.1-PRECISI-2020-41333
 - ·PN-III-P1-1.1-PRECISI-2020-51228
 - ·PN-III-P1-1.1-PRECISI-2021-55176
 - ·PN-IV-P2-2.3-PRECISI-2023-74694

CONFERENCES AND SEMINARS

2025

1. **M. Oprea**, A.M. Pandele, A.C. Nechifor, A.I. Nicoara, I.V. Antoniac, A. Semenescu, S.I. Voicu, C.I. Enachescu, A.M. Fratila, Cellulose acetate/magnetic nanoparticles composite membranes with improved biomineralization ability, NTA Dentistry Scientific Conference, 18 July 2025, NUST Politehnica Bucharest, Romania
2. **M. Oprea**, A.M. Pandele, S.I. Voicu, Polymeric membranes with increased biomineralization ability, 4th Bucharest Polymer Conference, 2-5 June 2025, Brasov, Romania.

2024

1. **M. Oprea**, A.M. Pandele, A.I. Nicoara, S.I. Voicu, I.V. Antoniac, C.I. Enachescu, A.M. Fratila, Crown ether functionalized polymeric membranes with enhanced biomineralization properties, a X-a ediție a Conferinței Internaționale de Biomateriale, Inginerie Tisulară și Dispozitive Medicale (BIOMMEDD'2024), 10-12 October 2024.
2. **M. Oprea**, A.M. Pandele, S.I. Voicu, Covalent immobilization of crown ethers onto polymeric membrane surface for potential retention of heavy metals from wastewater, a 23-a ediție a Conferinței Internaționale de Chimie și Inginerie Chimică (RICCCE23), Mamaia-Constanța, omânia, 4–7 September 2024.
3. **M. Oprea**, M. Ionita, Investigating the interactions between functionalized graphene oxide and antisense oligonucleotides using a computational approach via molecular modelling simulations, a 23-a ediție a Conferinței Internaționale de Chimie și Inginerie Chimică (RICCCE23), Mamaia-Constanța, România, 4–7 September 2024.

2023

1. **M. Oprea**, Cellulose-based materials with personalized properties for osseointegration applications, 3BIOMAT, UNSTPB, Romania, 29 Noiembrie, 2023.
2. **M. Oprea**, A.M. Pandele, A.I. Nicoara, S.I. Voicu, Surface functionalization of cellulose acetate membranes for improved biomineralization properties, Transnational Multiplier Event, UNSTPB, Romania, 18-19 October 2023.
3. **M. Oprea**, S.I. Voicu, A.M. Pandele, A.I. Nicoara, A novel generation of surface functionalized cellulose acetate membranes for biomedical applications, BIOREMED 2023, Sibiu, România, 19-21 July 2023.
4. **M. Oprea**, S.I. Voicu, A.M. Pandele, A.I. Nicoara, Surface functionalization of cellulose acetate membranes with crown ether for biomedical applications, NanoBioMat Summer Edition, București, România, 28-30 June 2023.
5. **M. Oprea**, A.M. Pandele, A.I. Nicoara, S.I. Voicu, Surface functionalized cellulose acetate membranes with enhanced biomineralization ability, 2nd Bucharest Polymer Conference, Universitatea Politehnica din București, România, 7-10 June 2023.

2021

1. **M. Oprea**, S.I. Voicu, A.M. Pandele, A.I. Nicoara, C. Tuncel, Crown ether functionalized cellulose acetate membranes with potential applications in hemodialysis, NanoBioMat Winter Edition, București, România, 25-27 November 2021.
2. **M. Oprea**, S.I. Voicu, A.M. Pandele, A. Palla-Papavlu, Alpha-fetoprotein monoclonal antibody-functionalized graphene for the fabrication of surface acoustic wave sensors, Priochem 17th edition, București, România, 27-29 October 2021.
3. C. Tuncel, **M. Oprea**, A.M. Pandele, S.I. Voicu, Alpha-fetoprotein-functionalized multi-walled carbon nanotubes for the fabrication of surface acoustic wave sensors, Priochem 17th edition, București, România, 27-29 October 2021.
4. **M. Oprea**, S.I. Voicu, A.M. Pandele, A new generation of polysulfone membrane materials for hemodialysis, CoSolMat Workshop, București, România, 11-15 October 2021

5. **M. Oprea**, Ș.I. Voicu, A.M. Pandele, D.M. Panaitescu, Ethanolamine, a novel linker for the covalent functionalization of cellulose acetate membranes, 2nd Bucharest Polymer Conference, Universitatea Politehnica din București, România, 9-11 June 2021.

2020

1. **M. Oprea**, C.A. Nicolae, R.A. Gabor, R. Trusca, D.M. Panaitescu, Bacterial cellulose/poly(3-hydroxybutyrate-co-3-hydroxyvalerate) nanocomposites for biomedical applications, Workshop-ul Exploratoriu Tehnologii Inovatoare Trans-Sectoriale (NeXT-Chem), București, Romania, 18-19 June 2020.

2019

1. A.N. Frone, I. Chiulan, **M. Oprea**, S. Stoian, D.M. Panaitescu, A.R. Gabor, C.A. Nicolae. Effect of different POSS structures on thermal and morphological properties of biodegradable polyester. Simpozionul Internațional "Prioritățile chimiei pentru o dezvoltare durabilă" (PRIOCHEM), București, România, 30 Octombrie-1 November 2019.

2. **M. Oprea**, A.N. Frone, D.M. Panaitescu, R.A. Gabor, I. Chiulan, C.A. Nicolae, S. Stoian, The influence of silica-based nanofillers on thermal and dynamic mechanical properties of polylactic acid, A 21-a ediție a Conferinței Internaționale de Chimie și Inginerie Chimică (RICCCE21), Mamaia-Constanța, România, 4-7 September 2019.

3. D. Panaitescu, A. Frone, C. Nicolae, R. Gabor, **M. Oprea**, S. Stoian, Biocomposite foams based on polyhydroxyalkanoates: Morphological and thermo-mechanical characterization, 5th Central and Eastern European Conference on Thermal Analysis and Calorimetry (CEE-C-TAC5), Roma, Italia, 27-30 August 2019.

4. D.M. Panaitescu, S. Stoian, **M. Oprea**, A.N. Frone, I. Chiulan, A.R. Gabor, C.A. Nicolae, R. Trușcă, P.O. Stănescu, Nanocomposites from functionalized bacterial cellulose and biopolymers, 7th International Conference on Biobased and Biodegradable Polymers (BIOPOL-2019), Stockholm, Suedia, 16-19 June 2019.

5. **M. Oprea**, C.A. Nicolae, R.A. Gabor, R. Trușcă, D.M. Panaitescu, Biocomposites from bacterial cellulose and polyhydroxyalkanoates, A 9-a ediție a Conferinței Internaționale a Societăților de Chimie din Țările Europei de Sud-Est (ICOSECS9), Târgoviște, România, 8-11 May 2019.

6. **M. Oprea**, A.M. Grumezescu, A.M. Holban, R. Trușcă, D.M. Panaitescu, Hybrid polymeric materials with potential biomedical applications, Workshop-ul Exploratoriu Tehnologii Inovatoare Trans-Sectoriale (NeXT-Chem), București, România, 6-7 May 2019.

2018

1. D.M. Panaitescu, A.N. Frone, **M. Oprea**, S. Stoian, Porous structures from nanocellulose and biopolymers for biomedical applications, A 9-a ediție a Conferinței Internaționale de Biopolimeri și Știința Polimerilor, București, România, 19-21 November 2018.

2. **M. Oprea**, A.M. Grumezescu, E. Andronescu, A.M. Holban, E.R. Radu, S. Stoian, Nanostructured surfaces based on PLGA and magnetite for the prevention of post-implantation tumoral regression, A 6-a ediție a Colocviului Internațional de Fizica Materialelor (PM6), București, România, 15-16 November 2018.

3. D.M. Panaitescu, A.N. Frone, I. Chiulan, C.A. Nicolae, A.R. Gabor, **M. Oprea**, S. Stoian, R. Trușcă, A. Cășărică, New 3D structures from nanocellulose and biopolymers, A XXXV-a Conferință Națională de Chimie Călimănești-Căciulata, Căciulata, Romania, 2-5 October 2018.

4. S. Stoian, **M. Oprea**, C.A. Nicolae, V. Rădițoiu, D.M. Panaitescu, A.R. Gabor, Mechanical and thermal characterization of Polylactic Acid composites with nano-TiO₂ for short duration materials, A XXXV-a Conferință Națională de Chimie Călimănești-Căciulata, Căciulata, Romania, 2-5 October 2018.

Trainings and Workshops 2014-2023

1. EELISA "Educating sustainability in chemistry programs using transdisciplinary challenge-based learning", 22-23 May 2025.
2. UNSTPB SMART VRC-OS, November 13-December 5, 2023, <https://smart.upb.ro/course/view.php?id=25>.
3. UNSTPB SMART PED, January 5-February 16, 2023, <https://smart.upb.ro/course/info.php?id=23>.
4. UPB Optional Course of Japanese Language and Culture, October 2021-June 2022, <https://international.upb.ro/academics/courses/japanese-language-course>.
5. UPB Entrepreneurship Bootcamp, 18 May-16 June 2020, <https://upb.ro/bootcamp-antreprenoriat-program-gratuit-dedicat-studentilor-upb/>.
6. The Alternative School for Creative Thinking, Young Lions Design, 13 April-17 May 2020, <https://www.thealternativeschool.com/blog/young-lions-design-confirmed-speakers/>.
7. European Research and Innovation Days (Virtual event), 22-24 September 2020, <https://research-innovation-days.ec.europa.eu/>.
8. Innovative Enterprise Week, Bucharest, Romania, 19-21 June 2019, <https://innoenterprisebucharest2019.eu/old-home.html>.
9. UEFISCDI Workshop for the elaboration of a roadmap associated with intelligent specialization in the domain of Health, Bucharest, Romania, 26 March 2019, <https://uefiscdi.gov.ro/news-workshop-de-elaborare-a-foii-de-parcurs-asociate-specializarii-inteligente-in-domeniul-sanatate-proiect-sipoca27>.
10. CTMB Summer School - Training session focused on "Communication, personal development, and career orientation", Eforie Nord, Romania, August 2017, https://ctmb.eu/?page_id=17828.
11. Grup 7 Summer School - Training session focused on the development of communication and consumer interaction abilities, Bucharest, Romania, August 2014, <https://www.prwave.ro/350-de-participanti-la-prima-editie-a-scolii-de-vara-grup-sapte/>.

VOLUNTEERING

11/2020 – CURRENT

Scientific articles reviews

Invited reviewer for: Cellulose (Springer, F.I. 4.80), Applied Physics A (Springer, F.I. 2.58), Biomedicines (MDPI, F.I. 6.08), International Journal of Molecular Sciences (MDPI, F.I. 5.92), Polymers (MDPI, F.I. 4.96), Journal of Composites Science (MDPI, F.I. 3.48), Carbohydrate Polymers (Elsevier, F.I. 10.7), International Journal of Biological Macromolecules (Elsevier, F.I. 7.7).

DRIVING LICENCE

Driving Licence: AM

Driving Licence: B1

Driving Licence: B