

Name: Sergiu Coseri

Senior Researcher – “Petru Poni” Institute of Macromolecular
Chemistry of Romanian Academy Iasi

Head of the “Polyaddition and Photochemistry” Department



Curriculum Vitae

Orcid qr code:



[HTTPS://SCHOLAR.GOOGLE.RO/CITATIONS?USER=5VYPIUsAAAAJ&HL=RO&OI=AO](https://scholar.google.ro/citations?user=5VYPIUsAAAAJ&hl=ro&oi=ao)

[ORCID.ORG/0000-0002-8993-5552](https://orcid.org/0000-0002-8993-5552)

PERSONAL DATA

Date and Place of Birth: July 14th 1967 in Siretel, Iasi, Romania
Married, Romanian (Nationality)

Research expertise: Developing of new catalytic systems for the selective derivatization of organic substrates (**especially polysaccharides**) in mild and “*ecofriendly*” environment; free radical processes involving *N*-hydroxyphthalimide (NHPI); chemical characterization of biopolymers; nanostructured polysaccharides, nanoparticles for the use in (bio) medical applications as sensors and for drug delivery systems. Organic chemistry; Physical organic chemistry,

WORK EXPERIENCE

October 1992 - present

**“Petru Poni” Institute of Macromolecular Chemistry Iasi, (ICMPP)
Romania – “Polyaddition and Photochemistry” Department**

Head of the Department, since July 2019

1992-1998 Research Assistant

1998-2006 Scientific Researcher

2007-November 2014 Scientific Researcher III

November 2014-January 2019 Scientific Researcher II

January 2019-present Scientific Researcher I

Romanian Academy research institute (> 250 employers)

Research areas: developing of new organic chemistry routes for selective oxidation of polysaccharides; new catalysts for selective organic transformations; nanocellulose; carbon nanotubes; hydrogels for biomedical applications; organogels; human movement detection.

Responsibilities: scientific direction and management of research projects (European, academic and industrial), supervising PhD students and early stage postdocs.

October 1991 - September 1992

“Petru Rares” School, Harlau, Iasi, Romania

- Chemistry teacher for college students

EDUCATION

- August 2016 **Romanian Academy**
Habilitation Thesis; Title: Nitroxyl radicals mediated functionalization of biopolymers: from synthesis to application, **OMENCS no. 4830/11.08.2016**
- June 2010 - March 2013 **“Petru Poni” Institute of Macromolecular Chemistry Iasi, (ICMPP) Romania**
Postdoctoral Fellow
- Postdoctoral Fellowship Grant, European Social Fund – “Cristofor I. Simionescu” Postdoctoral Fellowship Programme (ID POSDRU/89/1.5/S/55216), Sectorial Operational Programme Human Resources Development 2007-2013. “Petru Poni” Institute of Macromolecular Chemistry Iasi, Romania.
- November 2005 - October 2008 **“Petru Poni” Institute of Macromolecular Chemistry Iasi, (ICMPP) Romania**
NATO Return Fellow
- Return Fellow, NATO Reintegration Grant, Award received from NATO, Grant code: PDD(CP)-(CBP.EAP.RIG 982044)
 - Supervisor: Prof. Bogdan Simionescu
- June 2003 - June 2005 **National Research Council Ottawa, Canada**
Visiting Fellow at the Canadian Government Laboratory
- Award received from Natural Sciences and Engineering Research Council of Canada, Canada.
 - Supervisor: Dr. Keith U. Ingold.
- April 2002 – May 2003 **Queen’s University Kingston, Canada**
Postdoctoral Fellow
- Supervisor: Prof. Gregory Thatcher and Dr. Keith Ingold
- November 1994 - May 2001 **“Ghe. Asachi” Technical University Iasi and “Petru Poni” Institute of Macromolecular Chemistry Iasi, Romania**
PhD in Chemical Sciences
- PhD thesis: Isocyanate chemistry (In Romanian “Chimia izocianatilor”)
 - Supervisor: Dr. Adrian A. Caraculacu
- October 1986 – June 1991 **“Ghe. Asachi” Technical University Iasi, Romania**
Engineer diploma (MSc)
- Industrial Chemistry Faculty, Organic Chemistry department

SELECTED AWARDS AND MEMBERSHIPS

- 2015 – “Costin D. Nenitescu” prize of the Romanian Academy
2006 – Member of the EPNOE (European Polysaccharide Network of Excellence)
2020 – Member of Association Interactions, Complex Phenomena and Advanced Materials Society, ICPAMS.

EDITORIAL ACTIVITY

2012 – Present; Member of Editorial Board of:

1. Carbohydrate Polymer Technologies and Applications, Elsevier, <https://www.journals.elsevier.com/carbohydrate-polymer-technologies-and-applications/editorial-board>
2. Polymers, IF=4.967, Q1; <https://www.mdpi.com/journal/polymers/editors>
3. Materials, IF = 3.748, Q1; <https://www.mdpi.com/journal/materials/editors>
4. Polysaccharides, <https://www.mdpi.com/journal/polysaccharides/editors>
5. Open Chemical Engineering Journal (Bentham)

METRICS

Citation number: 2032 (Clarivate); 2164 (Scopus); 2700 (Google Scholar)

H – index: 28 (Clarivate); 27 (Scopus); 30 (Google Scholar)

INVITED REFEREE

Since 2005

International Journals

- Carbohydrate Polymers
- Organic Letters
- Biomacromolecules
- Cellulose
- Industrial Crops and Products, etc

PERSONAL SKILLS AND COMPETENCIES

Languages

Romanian native

English fluent

French beginner

Miscellaneous Interests

Travel, literature, scrabble (top 10 Romanian players), sport (jogging, tennis)

RESEARCH GRANTS AS A DIRECTOR

- **2021-2023** PN-III-P4-ID-PCE-2020-0476; Expanding cellulose's boundaries towards the fabrication of superior proton conductive membranes for fuel cells, Acronym: **EXCELLFUEL**
Budget: 250,000 EUR
- **2020-2022** PN-III-P2-2.1-PED-2019-0169; Highly sensitive immunoassay device, based on natural resources; Acronym: **HISENSE**
Budget: 125,000 EUR
- **2017-2019:** PN-III-P4-ID-PCE-2016-0349; Ingineria materiilor prime naturale: biointerfete pe baza de celuloza pentru detectia de proteine, Acronym: ERAW;
Budget: 170,000 EUR.
- **2012-2014:** Cellulose fibers oxidation using environmentally friendly reagents - Synthesis of various sorts of oxidized cellulose, using different reaction conditions – Industrial project between “**Petru Poni**” Institute and **Innventia SA Stockholm**, Sweden.
Budget: 120,000 SEK.
- **2012-2014:** Co-operation of SEE science parks for the promotion of transnational market update of R&D results and technologies by SMEs, **SEETechnology - SEE/D/0224/1.2/X**.
Budget: 2,046,667 EUR
- **2011-2013:** Strengthening the Romanian research capacity in Multifunctional Polymeric, **STREAM, ID 264115, 2011-2013**
Budget: 4,500,000 Euro
- **2005-2007:** NATO Security Through Science Programme, NATO Reintegration Grant, “Progresses in Free Radical Reactions Mechanism”; PDD(CP)-(CBP.EAP.RIG 982044)
Budget: 25,000 USD
Project manager

MAJOR COLLABORATIONS

- Prof. Tatiana Budtova, Centre de Mise en Forme des Materiaux Sophia Antipolis, France, Project title: “*Study of polysaccharides solutions behavior*”.
- Prof. Volker Ribitsch and Prof. Stefan Spirk; Graz University, Department of Organic Chemistry, Austria. Project title: “*Adsorption of cellulose thin films on PET monitored by QCM-D*”
- Prof. Karin Stana-Kleinschek and Prof. Simona Strnad; Laboratory for Characterization and Processing of Polymers, Faculty of Mechanical Engineering, University of Maribor, Smetanova 17, SI-2000 Maribor, Slovenia. Project title: “*Cellulose chemical functionalization using new nitroxyl radicals as mediators*”.
- Prof. Tim Lindstrom, Innventia AB Stockholm, Sweden; Project title: “*Cellulose fibers oxidation using environmentally friendly reagents - Synthesis of various sorts of oxidized cellulose, using different reaction conditions*”

PUBLICATIONS (SELECTION)

- Shuyuan Cui, Sufeng Zhang,* **Sergiu Coseri**, An injectable and self-healing cellulose nanofiber-reinforced alginate hydrogel for bone repair, *Carbohydrate Polymers*, 300(11), 120243, **2023**. **IF = 11.2**
- Ecaterina S. Dragan,* Claudiu A. Gheorghita, Maria V. Dinu, Ioana A. Duceac, **Sergiu Coseri**, Fabrication of self-antibacterial chitosan/oxidized starch polyelectrolyte complex sponges for controlled delivery of curcumin, *Food Hydrocolloids*, 135, 108147, **2023**. **IF = 10.7**
- Xue Yao, Sufeng Zhang,* Liwei Qian,* Ning Wei, Valentin Nica, **Sergiu Coseri**, and Fei Han, Super Stretchable, Self-Healing, Adhesive Ionic Conductive Hydrogels Based on Tailor-Made Ionic Liquid for High-Performance Strain Sensors, *Advanced Functional Materials*, **2022**. **IF = 19**
- Ioana A. Duceac,* **Sergiu Coseri***, Biopolymers and their derivatives: key components of advanced biomedical technologies, *Biotechnology Advances*, 61, 108056, **2022**. **IF = 16**
- Violeta Melinte, Andreea-Laura Chibac-Scutaru*, Madalina Elena Culica, **Sergiu Coseri**, Mineralization versus photoreduction of 4-nitrophenol under the influence of surface functionalized CeO₂ nanoparticles, hosted by versatile cellulose supports, *Applied Surface Science*, 565, 150494, **2021**. **IF = 6.7**
- Madalina Elena Culica, Andreea-Laura Chibac-Scutaru, Tamilselvan Mohan,* **Sergiu Coseri***, Cellulose-based biogenic supports, remarkably friendly biomaterials for proteins and biomolecules, *Biosensors and Bioelectronics*, 182, 113170, **2021**. **IF = 12.6**
- G. Biliuta, **S. Coseri***, Cellulose: A ubiquitous platform for ecofriendly metal nanoparticles preparation *Coordination Chemistry Reviews*, 383, 155-173, **2019**. **IF = 20.6**
- M. Bercea, G. Biliuta, M. Avadanei, R. I. Baron, M. Butnaru, **S. Coseri***, Self-healing hydrogels of oxidized pullulan and poly(vinyl alcohol), *Carbohydrate Polymers*, 206, 210-219, **2019**. **IF = 11.2**
- **S. Coseri***, Cellulose: To depolymerize... or not to?, *Biotechnology Advances*, **2017**, 35(2), 251-266. **IF = 16**
- D. Breitwieser, M. Kriechbaum, H. M.A. Ehmman, U. Monkowius, **S. Coseri**, L. Sacarescu, S. Spirk, Photoreductive generation of amorphous bismuth nanoparticles using polysaccharides – Bismuth-cellulose nanocomposites, *Carbohydrate Polymers*, **2014**, 116, 261-266. **IF = 11.2**
- **S. Coseri***, Phthalimide-*N*-oxyl (PINO) Radical, a Powerful Catalytic Agent; Its Generation and Versatility Towards Various Organic Substrates. *Catalysis Reviews*, **2009**, 51(2), 218-292. **IF = 10.9**
- A. A. Caraculacu, **S. Coseri**, Isocyanates in polyaddition processes. Structure and reaction mechanisms; *Progress in Polymer Science*, **2001**, 26(5), 799-851. **IF = 27.1**

RESEARCH MONOGRAPHS, CHAPTERS

- Thomas Heinze, Andreas Koschella, Tim Liebert, Valeria Harabagiu, **Sergiu Coseri**. Chapter 10: Cellulose: chemistry of cellulose derivatisation; in *The European Polysaccharide Network of Excellence (EPNOE) Research initiatives and results*. 283-327, Navard, Patrick (Ed.), Springer, ISBN 978-3-7091-0420-0, **2013**.
- **Sergiu Coseri** Chapter 4: “Reaction mechanisms and kinetic methods used to describe the uncatalyzed reaction between isocyanates and hydroxyl compounds” In *Recent Research Trends in Polymer Science*, Ed. Elena Scortanu, Published by Transworld Research Network; Transworld Research Network T.C. 37/661(2), Fort P.O., Trivandrum-695 023, Kerala, India, ISBN: 978-81-7859-427-1, **2009**.

INVITED PRESENTATIONS

1. **Sergiu Coseri**, Cellulose – sustainable material, Invited course on the workshop: “Sustainable materials and technologies” Maribor, Slovenia, March 2-6, **2015**.
2. **Sergiu Coseri**, Alina Spatareanu, Liviu Sacarescu, Cristina Rimbu, Valeria Harabagiu. The use of pullulan and 6-carboxyl pullulan for the silver nanoparticles formation 3rd EPNOE International Polysaccharide Conference, Nice, France, 21-24 October, **2013**.
3. **Sergiu Coseri**, Introduction of carboxyl moieties in cellulose chain by mimics natural occurring processes, Advances in Biomaterials, Viena, Austria, 12-16. 03. **2012**.
4. **Sergiu Coseri**, Physical and chemical cellulose surface modification, International Conference on Nanotechnology for the Forest Products Industry, St. Louis, Missouri, USA, June 25-27, **2008**.
5. **Sergiu Coseri**, Mechanisms of reaction of aminoxyl (nitroxide), iminoxyl and imidoxyl radicals with alkenes. Lecture la NRC Canada, Steacie Institute of Molecular Science, 100 Sussex Drive, K1N 0R6, Ottawa, April 5, **2005**.
6. **Sergiu Coseri**, A new method to distinguish between abstraction and addition as a first step of the cycloalkenes reaction with nitroxy radicals.
7. Lecture la NRC Canada, Steacie Institute of Molecular Science, 100 Sussex Drive, K1N 0R6, Ottawa, April 27, **2004**.
8. **Sergiu Coseri**, Reaction Mechanisms for Nitric Oxide Release from Nitrates. Lecture la NRC Canada, Steacie Institute of Molecular Science, 100 Sussex Drive, K1N 0R6, Ottawa, April 15, **2003**

INVITED PROFESSORSHIP

1. Laboratory for Characterization and Processing of Polymers Faculty for Mechanical Engineering, **University of Maribor**, Slovenia, March 2015, teaching course: *Cellulose – sustainable material*.
2. Faculty of Mathematics and Natural Science, Jan Dlugosz **University in Czestochowa**, Institute of Chemistry, Environment Protection and Biotechnology, Poland, April – May, 2017, Courses: i) *Chemistry and applications of biodegradable polymers* and ii) *Nanomaterials based on natural resources: a key strategy for a future sustainable development*.

PEER-REVIEW ACTIVITY

Expert Evaluator

Poland - Executive government agency of **National Science Centre Poland** (Narodowe Centrum Nauki - NCN; <http://www.ncn.gov.pl>). Since: 2016 - to date for the following programs: OPUS, PRELUDIUM, SONATA

Malta - Expert Evaluator for Malta Council for Science and Technology (MCST), since 2020.

Portugal - Graduate Women in Science - GWIS Committee Member, since 2022

Spain - “la Caixa” Foundation, since 2020

Romania - Executive Agency for Higher Education, Research, Development and Innovation Funding - UEFISCDI

