



Elena-Daniela LOTOS

PhD Student

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PhD thesis topic: *Polysaccharide-based micro- and nanostructured biomaterials for medical applications, Coordinator Acad. Bogdan C. Simionescu*

Research topics

Synthesis and characterization of hydrogels based on gelatin and hyaluronic acid, study of hydrogels with shape memory. Knowledge in synthesis and evaluation of biomaterials/bioactive compounds and utilization of these compounds in implementation of biotechnological processes. Studies of the biopolymers solubility in different solvents mixtures and at different pH; characterization of biopolymers solutions/dispersions by polyelectrolytic titrations, turbidimetric measurements, size and zeta potential determination. Trained to use the following instruments: Drop Shape Analyzer-DSA25 (Kruss GmbH, Germany), Particle Charge Detector-PCD 03 (Mütek GmbH, Germany), Zetasizer Nano (Malvern Panalytical, UK), Electrospinning equipment type TL PRO BM (Tonglitech).

Scientific research

Author of 2 ISI articles (1 in Q1 zone and 1 in Q2 zone), 1 article in proceedings, 4 oral communications.

Visibility

<https://www.brainmap.ro/elena-daniela-lotos;>

<https://orcid.org/0000-0001-9192-9920;>

<https://www.webofscience.com/wos/author/record/AGX-5642-2022;>

Relevant publications

1. E.-D. Lotos, M. Mihai, A.-L. Vasiliu, I. Rosca, A. Mija, B. C. Simionescu, S. Pispas, **Zein / polysaccharides nanoscale electrostatic complexes: preparation, drug encapsulation and antibacterial properties**, *Nanomaterials* 14(2), 197, **2024, Q1 (IF₂₀₂₂ = 5.3)**. DOI: 10.3390/nano14020197
2. E.-D. Lotos, A. Danila, A.-L. Vasiliu, I. Rosca, D.-V. Stroian, B. C. Simionescu, M. Mihai, **The potential emulsions of xanthan gum and Daucus carota macerated oil in functional textiles for skincare applications: Formulation, characterization, and performance evaluation**, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 682, 132960, **2024, Q2 (IF₂₀₂₂ = 5.2)**. DOI: 10.1016/j.colsurfa.2023.132960

Short research stages

1. **"Porous polymeric materials for medical and environmental applications"** at IP-BAS, in the Laboratory of Bioactive Polymers, Department of Polymeric Biomaterials, Sofia, Bulgaria, 9 May - 8 June 2022.
2. **IdEx Project "Development of zein based bioresins"** at Université Côte d'Azur, in Institute de Chimie de Nice, Nice, France, 1 November 2023 - 31 January 2024.

Member in projects

1. **Research Assistant (doctoral member)** in Project PN-III-P4-ID-PCE-2020-1541 (*ZwitterZein*) - Functional Polymers Laboratory, Petru Poni Institute of Macromolecular Chemistry, Iasi - ROMANIA, 2022-2023.
2. **Research Assistant (doctoral member)** in Project PNRR-III-C9-2022 - I8 (*HYBSAC*), Romanian National Recovery and Resilience Plan - Petru Poni Institute of Macromolecular Chemistry, Iasi - ROMANIA, 2023-2026.