



## Larisa-Maria PETRILA

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PhD thesis topic: *Polymer/enzyme composite materials with catalytic and biomedical applications*, Coordinator *Dr. Marcela Mihai*

### Research topics

Composite materials based on polyelectrolytes and enzymes, by layer-by-layer assembly, sorption and/or precipitation; Immobilization of enzymes on composite materials of different shapes and morphologies; Characterization of polymer-based and enzyme/polymer composite materials by various techniques (polyelectrolyte titrations, potentiometric titrations, Fourier-transform Infrared Spectroscopy, scanning electron microscopy, X-ray photoelectron spectroscopy, thermogravimetric analysis, electrokinetic measurements, UV-Vis spectrophotometry); Testing of composite materials in different applications (water cleaning, catalysis, biomedical applications); Characterization of enzyme/polymer composite materials (enzymatic activity, stability, shelf life).

### Scientific research

Author and co-author of 4 ISI articles published (1 in Q1, 2 in Q2); 2 BDI articles published; 10 Oral communications; 22 citations (HI = 2); Member in 1 national projects; Awards: Best oral presentation for the study „Silica/polyelectrolyte sorbents for the removal of organic pollutants” - Larisa-Maria Petrila, Florin Bucatariu, Marcela Mihai, Ph.D. Students’ Days, The First Edition, Arad, Romania (2021).

### Visibility

[orcid.org/0000-0003-3341-6718](https://orcid.org/0000-0003-3341-6718);

[sciprofiles.com/profile/1696025](https://sciprofiles.com/profile/1696025)

[brainmap.ro/larisa-maria-petrila](https://brainmap.ro/larisa-maria-petrila)

### Relevant publications:

1. **L.-M. Petrila**, F. Bucatariu, M. Mihai, C. Teodosiu, **Polyelectrolyte Multilayers: An Overview on Fabrication, Properties, and Biomedical and Environmental Applications**, *Materials* 14 (2021) 4152. **Q2** (IF<sub>2021</sub> = **3.748**). DOI: 10.3390/ma14154152
2. F. Bucatariu, C. Teodosiu, I. Morosanu, D. Fighir, R. Ciobanu, **L.-M. Petrila**, M. Mihai. **An overview on composite sorbents based on polyelectrolytes used in advanced wastewater treatment**, *Polymers* 13 (2021) 3963. **Q1** (IF<sub>2021</sub> = **4.967**). DOI: 10.3390/polym13223963
3. F. Bucatariu, M.-M. Zaharia, **L.-M. Petrila**, F. Simon, M. Mihai, **Sand/polyethyleneimine composite microparticles: Eco-friendly, high selective and efficient heavy metal ion catchers**, *Colloids and Surfaces A: Physicochem. Eng. Aspects* 649 (2022) 129540. **Q2** (IF<sub>2021</sub>=**5.518**). DOI: 10.1016/j.colsurfa.2022.129540
4. F. Bucatariu, **L.-M. Petrila**, C. Teodosiu, M. Mihai, **Versatile nanostructured SiO<sub>2</sub>/cross-linked polyelectrolyte composites for emerging pollutants removal from aqueous media**, *Comptes Rendus Chimie*, 25, S3, 1-14 (2022). **Q3** (IF<sub>2021</sub>=**2.55**). DOI: 10.5802/crchim.171