

This project is co-funded by the European Union  
and the Republic of Türkiye



# MSCA SE 2026 Call



**PRESENTER FULL NAME:** Prof. Andrejs E. Krauklis

**ORGANIZATION:** Latvia University of Life Sciences and Technologies (LBTU)  
Material–Environment Interactions (MEI) Group

**WORKSHOP NAME:** Horizon Europe – MSCA Staff Exchanges Brokerage Event

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## MSCA SE 2026 Call

### Description of the Organisation

#### **Latvia University of Life Sciences and Technologies (LBTU)**

- Public research university
- Strong focus on sustainability & applied research
- Active in Horizon Europe, Interreg, national excellence funding

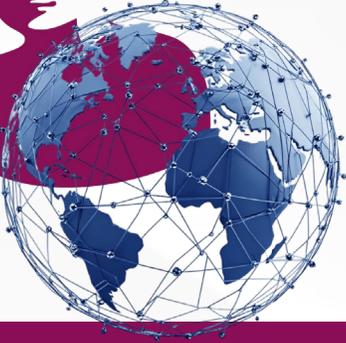
#### **Material–Environment Interactions (MEI) Group**

- H-index 28
- Advanced materials durability & sustainability modelling
- Strong publication record (Q1 journals in composites & materials science)
- QSPR & machine learning
- Experienced in international collaboration

Looking for partners and consortium to join.



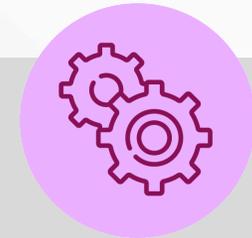
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- **Polymer & Composite Durability:** Experimental ageing, degradation mechanisms, and lifetime prediction of advanced composites.
- **QSPR & Machine Learning:** Data-driven modelling of mechanical performance, diffusion, and long-term durability.
- **Circular Composites:** Recycling, recyclate validation, and sustainable redesign of CFRP/GFRP systems.
- **Digital Twins:** AI-integrated predictive engineering and multi-scale durability forecasting.
- **LCA/LCC Integration:** Linking material performance with environmental and economic assessment



- ✓ Experience coordinating international projects
- ✓ Access to Baltic regional industrial partners
- ✓ We can act as:
  - Work Package Leader
  - Exchange host institution



- ✓ Advanced materials testing & ageing laboratories
- ✓ Expertise in composites, polymers, and circular economy
- ✓ QSPR / ML modelling capacity
- ✓ LCA & sustainability assessment expertise
- ✓ Machine learning for materials property prediction



## MSCA SE 2026 Call



### Your Research Fields

**Materials Science and Engineering**

**Sustainability & Circular Economy**



**Modelling / Machine Learning / Digitalization**

**Chemistry and Chemical Engineering**



**Environmental Science and Engineering / Environmental Impact Assessment**



## MSCA SE 2026 Call



### Project Idea

**Project Idea:** POLY-MEMORY – Environmental Molecular Memory in Polymers

**Deadline Dates:** 16 Apr 2026

**Objectives:**

- Investigate the existence of environmental molecular memory in (bio)polymers
- Compare intentional (MIP) vs unintentional imprinting mechanisms
- Develop QSPR-based “Imprinting Susceptibility Index”
- Apply ML to predict imprint formation & stability
- Integrate thermodynamic, surface and durability data into predictive frameworks

**Expected Results:**

- Descriptor database linking chemistry → memory behaviour
- AI-driven predictive framework for imprinting susceptibility
- Multiscale surrogate models for rapid property screening
- Sustainable material design guidelines
- Long-term collaborative platform for future proposals + Joint high-impact publications



## MSCA SE 2026 Call

Consortium - profile of known partners (if any)

No	Partner Name	Type	Country	Role in the Project
01	LBTU	Pub Uni	Latvia	Coordinator – QSPR Modelling, Property Prediction/Design
02	Bilkent University	Pub Uni	Turkey	Partner – Molecular imprinting & functional polymer systems
03	TU Delft	Pub Uni	Netherlands	Partner – Multiscale modelling & reduced-order surrogate models
04	Klaipeda University	Pub Uni	Lithuania	Partner – Environmental impact & sustainability assessment
05	Rostock University	Pub Uni	Germany	Partner – Thermodynamics & physicochemical interaction analysis



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### Consortium – required partners

No	Expertise	Type	Country	Role in the project
01	Industrial polymer producer (validation platform)	Open	Open	Validation specialists
02	Material Design / MD / QSPR/ ML Modelling	Open	Open	Modelling experts
03	Polymer chemistry (intentional imprinting benchmark)	Open	Open	intentional imprinting benchmarking
04	Isothermal titration calorimetry (ITC) Microcalorimetry Advanced adsorption isotherm BET surface analysis Solid-state NMR FTIR mapping AFM surface characterization Other analytical	Open	Open	Physical chemistry / materials characterization lab working on sorption, adsorption, or surface interactions.



## **MSCA SE 2026 Call**

PRESENTER CONTACT

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COUNTRY: LATVIA