

PROJECT PARTNER SEARCH FORM

I offer my expertise to participate as a Partner in a Horizon Europe Project

I am planning to coordinate a project and I am looking for Project Partners

TOPICS OF INTEREST

Interested primarily in participation in following project types:

- Widening participation & spreading excellence
- Research & Innovation Actions
- EIC pathfinder actions

Interest in participating in the following specific upcoming calls:

- HORIZON-WIDERA-2023-ACCESS-02-01/02: Bottom-up or Twinning Green Deal
- HORIZON-WIDERA-2023-ACCESS-03-01: European Excellence Initiative (EEI)
- HORIZON-WIDERA-2023-ACCESS-05-01: Dissemination and Exploitation Support Facility
- HORIZON-WIDERA-2023-ACCESS-06-01: Hop on Facility
- HORIZON-CL4-2023-DIGITAL-EMERGING-01-33: 2D materials of tomorrow (RIA)
- HORIZON-CL5-2024-D3-01-10: Next generation of renewable energy technologies (RIA)
- EIC Pathfinder Open

PARTNER INFORMATION

Laboratory for Advanced Materials (LAM) is a recently (2019) established laboratory by funding from the European Commission under the Horizon 2020 program, the ERA Chair scheme. Our primary focus is on design and development of new nanomaterials and materials for advanced technologies, particularly in the areas of energy conversion and storage, optoelectronics and electronics, as well biology and medicine. Our expertise includes:

- Nanomaterials/materials synthesis and fabrication
- Nanomaterials/materials characterization
- Proof-of-concept applications development

Examples of materials currently being developed in our laboratory and summary of corresponding activities:

Nanographenes

- Chemical “bottom-up” synthesis of 2D nanomaterials structurally related to graphene
- Experimental structural and electronic characterization
- Theoretical modeling of the electronic structure and properties
- Development and performance characterization of proof-of-concept devices
- Potential applications: electrochromic devices, displays, memories, smart windows, bioimaging, other

Inorganic nanocrystals

- Chemical “bottom-up” syntheses of semiconductor and metal nanocrystals, quantum dots, rods, nanoplatelets, nano-heterostructures;
- Characterization by electron and optical microscopy
- Structural and electronic characterization
- Development and performance characterization of proof-of-concept devices

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- Potential applications: photovoltaics, photocatalysis, batteries, LEDs, lasers, displays, bioimaging, antimicrobial agents, photothermal therapy, many others

Chalcogenide perovskites

- Chemical synthesis of chalcogenide perovskites and preparation of thin films
- Structural and electronic characterization
- Development and performance characterization of proof-of-concept devices
- Potential applications: photovoltaics, optical detectors, light emitting devices, photocatalysis, other

Description of the Legal Entity

Laboratory for Advanced Materials is a department within the Faculty of Natural Sciences at Comenius University in Bratislava, Slovakia. Comenius University is the oldest and most prestigious university in Slovakia.

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|--|---|--|
| <input checked="" type="checkbox"/> Higher Education | <input type="checkbox"/> Research Institution | <input type="checkbox"/> Public Administration |
| <input type="checkbox"/> Industry /SME | <input type="checkbox"/> NGO | <input type="checkbox"/> Other: <i>Please specify</i> |

Description of the (Research) Team

LAM research team comprises total of thirteen researchers; six postdoctoral researchers, six PhD students and a masters student. In terms of technical training, seven members of the team are chemists, five are physicists, seven are chemists and one is a materials scientist. The entire team or the parts of the team, depending on the research topic are available for potential partner collaboration. The postdoctoral researchers available for the collaborative effort and their expertise are summarized below:

Dr. Roman Bystrický: Chemist; Primary expertise: Chalcogenide perovskites. [Google scholar link](#)

Dr. Pavol Tisovský: Chemist; Primary expertise: Nanographenes. [Google Scholar link](#)

Dr. Mrinmoy Roy: Physicist; Primary expertise: Inorganic Nanocrystals. [Google Scholar link](#)

Dr. Anamul Haque: Physicist; Primary expertise: Inorganic Nanocrystals. [Google Scholar link](#)

Dr. Peter Hutár: Physicist; Chalcogenide perovskites, Nanographenes. [Research Gate link](#)

Expertise of the Team Leader

Dr. Sykora is an ERA Chair and a director of LAM. Prior to joining LAM Dr. Sykora was a visiting scientist and a technical staff member at the Los Alamos National Laboratory (NM, USA) from 2003-2018. During the fifteen years at Los Alamos, Dr. Sykora performed research primarily in the area of materials and nanomaterials. He also served in various leadership and management roles, including as a research team leader, senior manager at the Center for Advanced Solar Photophysics, member of the Laboratory Energy Security Leadership Council and others. As a research team leader he led international teams consisting of experts from academia, national laboratories and industry. He also participated in and led several Collaborative Research and Development Agreements with major industrial partners. Dr. Sykora received his PhD in Chemistry from Marquette University (WI, USA) and his postdoctoral training from University of North Carolina (NC, USA) under the direction of Prof. Thomas J. Meyer. Dr. Sykora is a co-author of sixty research publications (over 3800 citations) and co-inventor of five issued US patents. [Google Scholar link](#)

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Potential role in the project

- Research
 Training
 Dissemination
 Other: ***Please specify***

Dr. Sýkora is available to participate as a partner, project leader, co-leader, scientific coordinator or workpackage leader. He has experience as a project leader/coordinator from EU as well as USA.

Already experience as a	Coordinator	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	Partner	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	Expert Evaluator	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
CONTACT DETAILS			

Contact Person: Milan Sykora
Organization: Laboratory for Advanced Materials, Comenius University
City: Bratislava
Country: Slovakia
Phone: + 421-2-901-42-159
Email: sykoram@uniba.sk
Organization Website: https://fns.uniba.sk/en/lam/
Contact Person Webpage:

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