INFRA SUPRACHEM LAB - CENTER FOR ADVANCED RESEARCH IN SUPRAMOLECULAR CHEMISTRY

Marcela MIHAI, Narcisa-Laura MARANGOCI

Petru Poni Institute of Macromolecular Chemistry, Aleea Grigore Ghica Voda 41A, Iasi, Romania
nmarangoci@icmpp.ro

1. General information

- *Beneficiary*: Petru Poni Institute of Macromolecular Chemistry Iasi (Institutul de Chimie Macromoleculara Petru Poni, ICMPP)
- Project co-financed by European Regional Development Fund under the Competitiveness Operational Program 2014-2020
- *Priority Axis 1* – Research, Technological Development and Innovation to Support Economic Competitiveness and Business Development
- *Investment priority 1a* – Improving research and innovation infrastructures and capacities to develop excellence in RDI and promoting centers of expertise, especially those of European interest
- *Action 1.1.3* Creating synergies with the RDI actions of the European Union's HORIZON 2020 framework program and other international RDI programs
- *Period*: 25.02.2021 – 24.06.2023.
- *MySMIS*. 108983

2. General objective

The overall objective of the Infra SupraChem Lab project is to create an advanced infrastructure that deserves the supramolecular chemistry working group SupraChem Lab, a group created within the Horizon 2020 Project WIDESPREAD 2-2014: ERA Chairs (667387) - SupraChem Lab Laboratory of Supramolecular Chemistry for Adaptive Delivery Systems ERA Chair initiative.

3. Specific objectives / Expected results

O1. Realization of the design component for the Infra SupraChem Lab project - objective already in implementation
O2. Realization of the infrastructure of the SupraChem Lab center
O3. Equipping and launching the SupraChem Lab center
O4. Dissemination and publicity
O5. Project management

The implementation of the **Infra SupraChem Lab project** represents the creation of an adequate structure for the activity of the **SupraChem Lab group**, a group formed through a Horizon 2020 ERA CHAIR project (Horizon 2020 WIDESPREAD 2-2014: ERA Chairs Project no 667387). The SupraChem Lab project started in 2015 and with the support of EC investment of 2.5 MEuro, the foundation of a young team of researchers was laid, focused on the principles of supramolecular chemistry knowledge. The team's research areas range from the creation of dynamic systems for targeted biomedical applications to the dynamic molecular modeling of the interaction of complex

supramolecular systems. The group human resource represents a secure core for the training of new generations of specialists, able to continue and develop new fields with great applicative impact.

Over the last ten years, ICMPP's research directions have clearly evolved into interdisciplinary fields and have been adapted to global research trends, while also presenting their own original directions, based on knowledge and experience gained over time. The implementation of the Infra SupraChem Lab project would contribute to the improvement of the existing research within ICMPP and SupraChem Lab team and to the development besides the fundamental research directions and of some applied research directions for new top products. An important part in the development of new directions is based on a modern infrastructure, aimed at interdisciplinary research. An infrastructure based on the synthesis and complete characterization of new materials represents a real support for the development of application fields. The Infra SupraChem Lab infrastructure is a step forward to create the premises for application of the results of fundamental research obtained by the newly created group.

Infra SupraChem Lab will be set up in spaces owned by the ICMPP - in buildings currently unused, under conservation. The new center will also benefit from the arrangement of auxiliary spaces, for the storage of chemicals, glassware and laboratory materials as well as the related access ways to facilitate the access to the research infrastructure.

The structure of Infra SupraChem Lab will include the following departments:

A. **Operating department** consisting of:

A1. Chemical and biochemical synthesis laboratory

A2. Laboratory for the study of special properties and possible applications

A3. Physical and chemical characterization laboratory

The laboratories are be provided with chemical ventilation niche and specific laboratory equipment for chemical syntheses (eg: magnetic stirrers, inert gas purification installations, vacuum pumps, electric ovens, etc.), study of properties and material characterization (e.g. X-ray diffractometer for wide angles, Photo-DSC, Automatic confocal imaging system for scanning, characterization and data analysis in cell biology, Semi-automatic inverted fluorescence microscope, Diffractometer with dual X-ray source for single crystals, Motorized stereomicroscope with fluorescence with the possibility of in-depth analysis, and many others).

B. **Data processing department**

Within this department, the data will be processed and structural optimization studies will be performed.

C. **Department of projects and technology transfer**

All departments are provided with computers connected to the Internet and implicitly to the internal network of the center.

The project has as **direct beneficiaries** the SupraChem Lab team, the project being addressed also to other interest groups as follows:

- graduates of the universities of Iasi and not only who could join the SupraChem Lab team or could benefit from training within the newly created Center
- teachers from universities in Iasi and not only, who will be able to carry out educational activities within the center
- researchers from ICMPP or other collaborating research institutions, who will be able to perform tests or determinations on the equipment within the center
- different SMEs that will be able to benefit from technology transfer facilities of the patented results that will be obtained within the center