

**PETRU PONI**



**“Petru Poni” Institute of Macromolecular  
Chemistry of Romanian Academy  
(ICMPP)  
Iasi, ROMANIA**



# ROMÂNIA

Location: (Southeastern) Central Europe

Time Zone: Eastern Standard Time (GMT + 2)

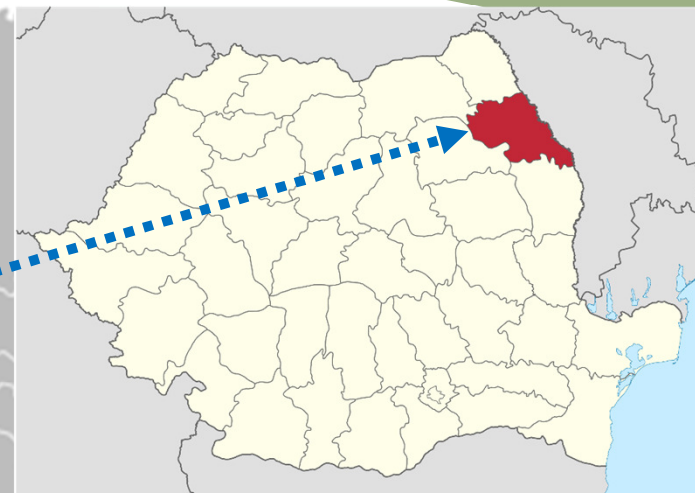
Flag of Romania: Three vertical stripes: blue, yellow and red

Population: 21,890,000 (January 2024)

Capital: Bucharest (*București* – pronunciation: *boo koo re sh tea*)

Currency: Leu (plural *Lei* – abbreviations: Lei/RON)

Climate: Temperate, four distinct seasons



## IAȘI

(pronounced: Yahsh)

Location: eastern Romania (Moldova region)

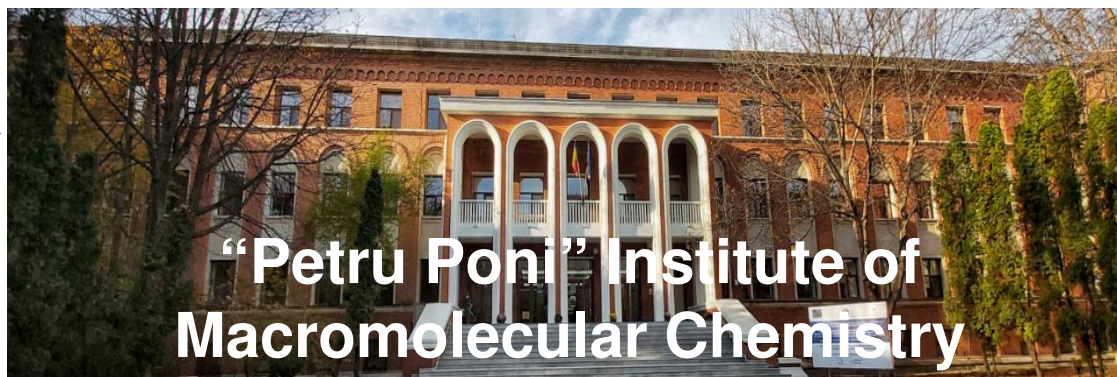
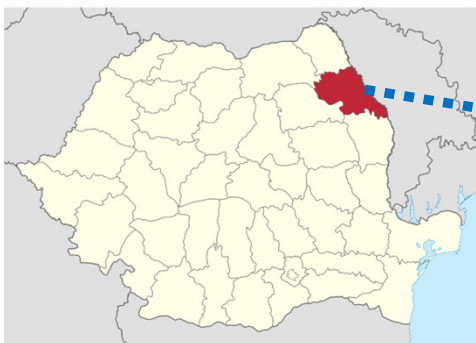
Nearest airport: Iași (IAS)

Area: 37 sq. miles (96 sq. kilometers)

Elevation: 312 ft. (105 meters)

Population: 387,000

First documented: 1387 AD



## **Institute of Excellence of Romanian Academy**

- founded in 1948 as a research unit of the Romanian Academy
- *ranked first / second* among the 71 research institutes / centers of the Romanian Academy
- *the first ten research positions in Romania* (according to the contribution to the total number of publications)
- The Institute for Scientific Information (ISI), Philadelphia, USA, lists the Institute among "*the main Romanian actors on the international scientific scene*"

<https://icmpp.ro/about.php>



# The main mission of ICMPP



- the accumulation/dissemination/valorization of knowledge obtained through fundamental and applied research in areas of national, European and international interest



to achieve the desired excellence in research, the strategic objectives of the Institute aim at performance in human resource education and specialization (PhD, post-doctoral) or are oriented towards the application of scientific results through the transfer of knowledge and technologies or to provide services and consultancy for economic agents.

<https://icmpp.ro/about.php>



HR EXCELLENCE IN RESEARCH

# Scientific departments



**Bio-inspired  
supramolecular  
structures and advanced  
materials**



**Monomers and  
polymers by chemical  
and photochemical  
methods**



**Heterochain/  
heterocyclic structures  
for improving the  
quality of life**



**Synthetic and natural  
ionic polymers and  
multifunctional  
composite materials**



**Natural polymers,  
bioactive,  
biocompatible and  
biomimetic materials**



**Element-organic  
polymers, metal  
complexes and organic/  
inorganic materials**



**Electroactive polymers  
for applications in opto-  
electronics and energy**



**Physical chemistry of  
multicomponent  
materials in solution  
and in the solid phase**

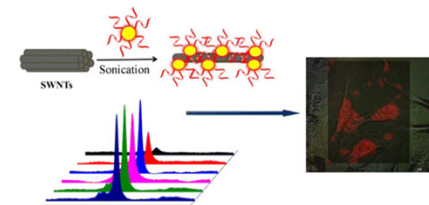
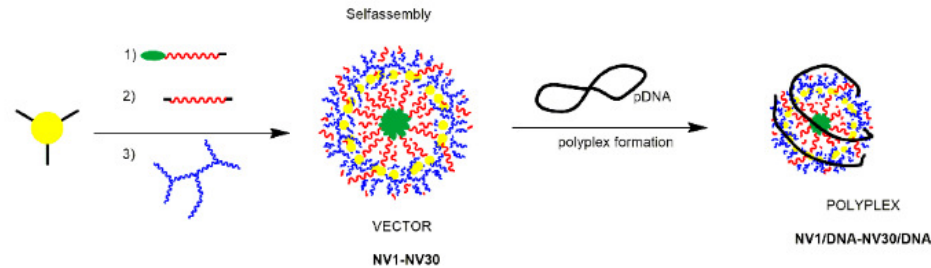
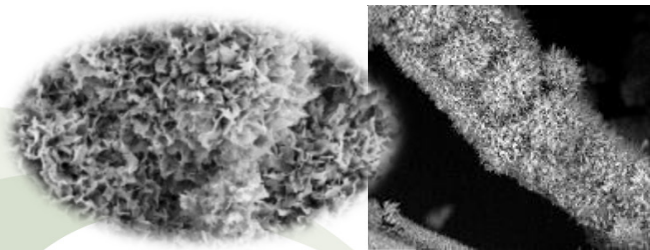


**Physics of polymers and  
polymeric materials**

# Nanostructured polymeric biomaterials for the pharmaceutical and medical industries

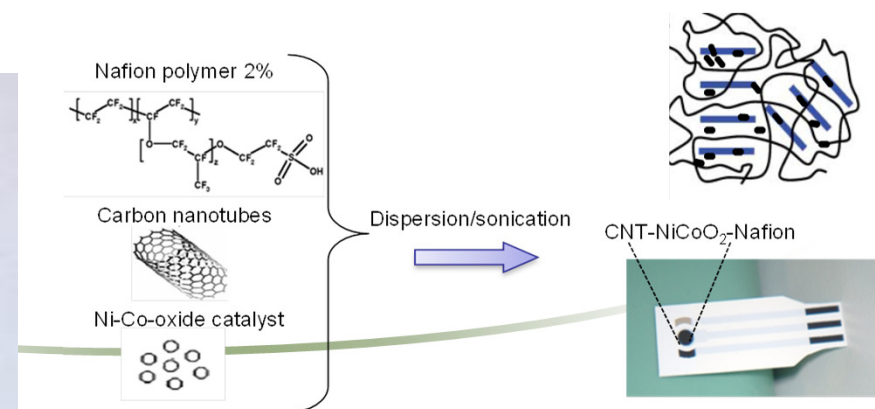
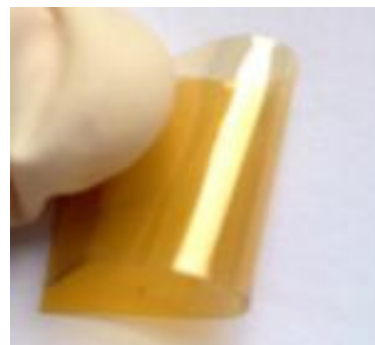
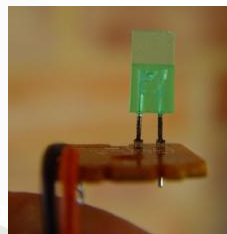
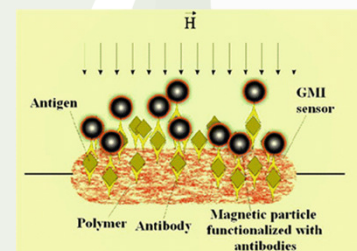
- Biomaterials for tissue engineering
- Selective macromolecular ligands
- Systems with pharmacological activity

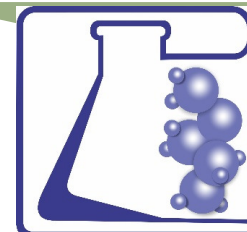
- Functional nanoparticles
- Carriers based on polymers sensitive to external stimuli



# Electro and optoactive nanomaterials

- Sensors and biosensors
- Materials for solar cells
- Electro- and optically active polymers

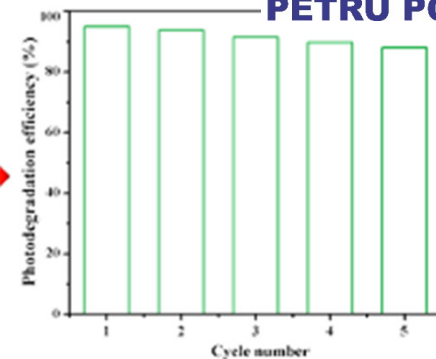
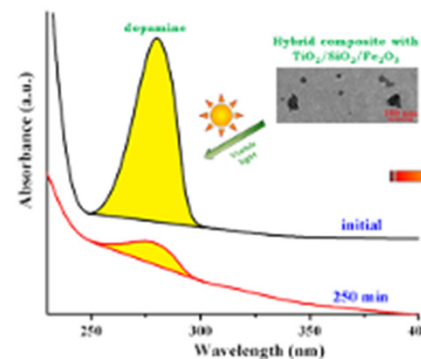
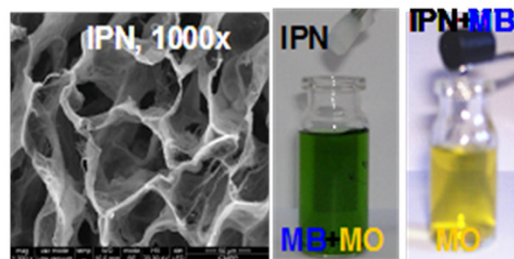
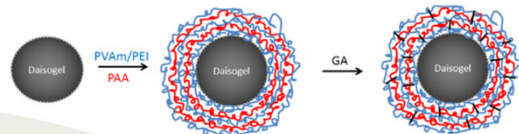




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# Composite and hybrid polymer materials for environmental protection and catalysis

- Chemical catalysts
- Photochemical catalysts
- Composite materials

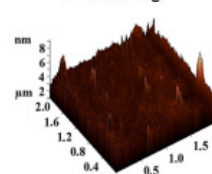


# Polymers and advanced materials for energy conversion and storage

- Dielectric elastomers
- Polymeric porous materials
- Metal-Organic Frameworks (MOF)

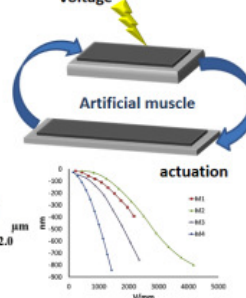
Silicone composites

Film forming

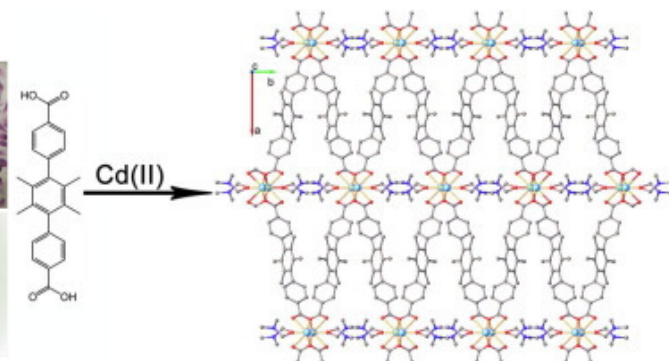
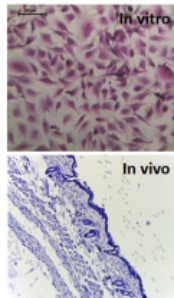


Voltage

Artificial muscle



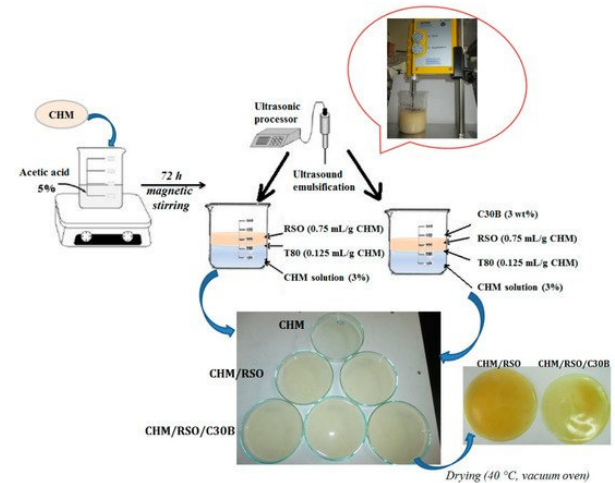
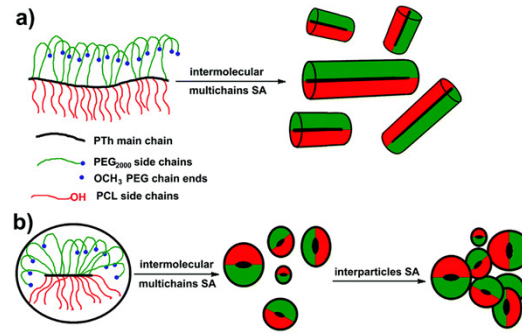
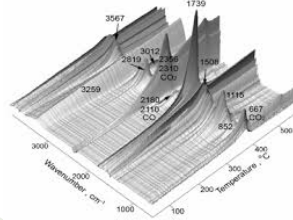
Biocompatibility tests





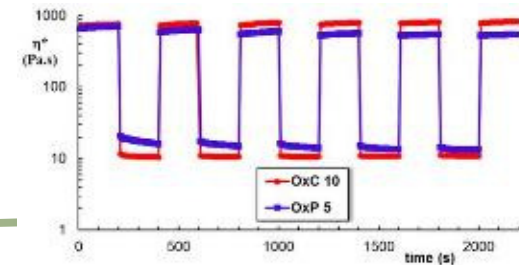
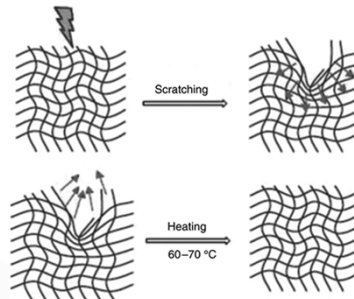
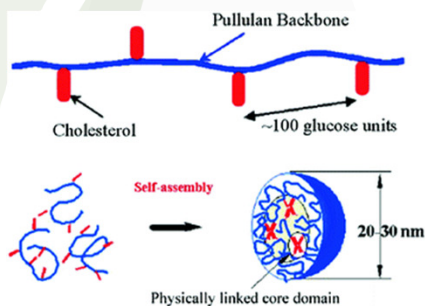
# Biodegradable polymer materials and eco-technologies for the recovery of polymer waste

- Pyrolysis/Gasification of polymeric waste
- Analysis of toxic gas emissions
- Biodegradable materials



# Multifunctional polymer materials and eco-technologies for films, coatings, adhesives

- Superhydrophobic/ Self-healing/ Self-cleaning/ Shock-resistant/ Flame retardant polymeric materials





# Key facts, numbers



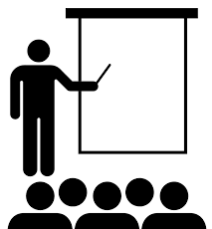
- ✓ >300 papers, books, book chapters published yearly in high-impact international journals  
H-index (*Web of Science* 08.01.2025) - 102



- ✓ >700 patents have been issued by the Institute along the years to cover the original, application-related research results



- ✓ involved in numerous national/European research projects and competes every year for new projects



- ✓ an average of 150 presentations at scientific manifestations/year

# Education

School of Advanced Studies of the Romanian Academy (SCOSAAR)



**Doctoral School of Chemical Sciences**  
19 doctoral thesis promoters



<https://icmpp.ro/sdsc/en/>

The mission of the Chemistry doctoral field is to develop a **highly specialized human resource** through research for R&D and innovation, **competent in the macromolecular compounds and polymer materials field**, capable of insertion on the highly qualified labor market, by **ensuring a creative, deontological, suitable for academic studies**, advanced scientific research, **interdisciplinary approaches** and the promotion of **scientific collaborations** at national and international level

# Services and consultancy

<https://erris.gov.ro/ICMPP>



- ✓ organic substances: component identifications and dosage of mixtures;
- ✓ polymer material: identifications analyses;
- ✓ on-demand physical and chemical analyses: NMR spectra, IR absorption spectra and UV-Visible, TG, DSC and TO (thermo-optical) GPC chromatograms, X-ray diffraction pattern, etc;
- ✓ personnel training for specific equipments;
- ✓ scientific research, technological development and design



# Inter(national) cooperation



*in Romania:* Politehnica University Bucuresti, University Bucuresti, "Transilvania" University Brasov, Technical University Timisoara, "Stefan cel Mare" University Suceava, "Ovidius" University Constanta, etc.

*in Iasi:* "Al. I. Cuza" University, "Ghe. Asachi" Technical University, "Ion Ionescu de la Brad" University of Life Sciences, "Gr. T. Popa" University of Medicine and Pharmacy



more than 70 SMI  
and large companies

~ 50 visitors from different  
institutions, annual

*in Europe:* France, Poland, Germany, Italy, Switzerland, Sweden, Hungary, Slovenia, Czech Republic, Finland, Great Britain, Portugal, Greece, Turkey, Ukraine etc

*in Japan, USA, China, Canada,  
Panama, Malaysia, Brazil, etc*

# Opportunities



- ✓ join ICMPP as partner in scientific ideas
- ✓ join ICMPP as research partner in national/EU projects



- ✓ participate to the scientific events we organize  
<https://www.icmpp.ro/macroiasi2025>



- ✓ join our PhD program – *la formation "à" et "par" la recherche*

# We are looking for



- solid, experienced scientific/ academic/business partners



- external sources of funding for our research/innovation



- opportunities for implementing our patents



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**Looking forward to welcome you at ICMPP!**

