East-Paris Institute of Chemistry and Materials (ICMPE)

UMR 7182 - UPEC/CNRS

Key words

Structural and functional metallurgy • Polymers • Energy storage and conversion • Eco-materials • Advanced materials • Therapeutic materials • Multicomponent reactions • Electro-synthesis and catalysis • Bioactive molecules and bio-resources

The institute is located on the CNRS campus in Thiais. It is part on the laboratory of excellence ("Labex") MMCD (Multi-Scale Modelling and Experimentation of Materials for sustainable Construction).

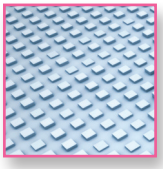
Objectives and research topics

In stimulating intellectual environment and with strong interacts between researchers in inorganic chemistry, metallurgy, organic chemistry, polymer chemistry, and materials characterisation, the ICMPE aims at developing new materials and processes, concepts and innovative scientific approaches to meet the needs of the future.

With their expertise in both fundamental and applied research, the ICMPE focuses on four specific research areas:

Environment and sustainability

- Eco-friendly strategies and methodologies
- Bio-resources development
- Decontamination procedures improvement



Advanced materials and scale effects

- Nano-objects, massive nanostructured materials
- Advanced materials: inorganic oxides, metal polymers, hybrid organic and inorganic materials
- Multiscale structuring: nanocomposites, porous materials, metallic glass, thin films
- Objectives: magnetism, membrane catalysis, energy, mechanical properties, biology/health interface, electrochromic, ferroelectricity

Energy materials

- Energy saving, storage and transformation
- Structure reduction, engines thermodynamic performance, fuel cladding life expectancy
- Storage of hydrogen, Li-ion, Ni-MH batteries
- Photovoltaic, thermoelectric and magneto-caloric energies conversion

Health and the living things

- Therapeutics development of analytical strategies, imaging and vectorisation
- Biomimetic and biocompatible materials, and bioactive polymers
- Structure / toxicity relations

Technological plateforms

- Flash sintering
- Metallurgic synthesis
- Analytical and semi-preparative HPLC
- NMR
- Electronic microscopies
- Characterisation techniques

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