IPREM / UMR 5254

Institute of Analytical Sciences and Physico-Chemistry for the Environment and Materials

The Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM) is a Joint Research Unit CNRS / UPPA (UMR 5254).

Website

Research Themes

* New characterisation, analytical tools and methods and modelling concepts : computation codes and strategies
* Structure – property relations: from molecule to material (synthesis, characterisation and modelling)
* Surfaces and interfaces : reactivity, mechanisms at interfaces, nanostructures, functionalisation of polymer surfaces
* Ecodynamics of contaminants, micro-organisms and tracers : biogeochemical cycles, fate of pollutants, biological, chemical and photochemical reactivities
* Molecular responses of living organisms : toxicity and bioavailability of metals, cold plasma effects

Application Sectors

* Environment
* Energy conversion and storage
* Health and Cosmetic products
* Transport (Aeronautical, Automobile)
* Biomass conversion
* Management of the subsoil and carbon-based resources

Instrumentation

* Elementary (ICP-MS), Isotope (Multicollector ICP-MS), Molecular (Electrospray, MS/MS, FT-MS) mass spectrometry
* Photoelectronic (UPS, XPS), electronic (AES) spectroscopy
* UV-Vis, IR, Raman spectroscopy
* High performance computation cluster
* Scanning electron (SEM), Near field (STM-AFM), Fluorescence microscopy
* NMR

* 200 m2 polymer synthesis laboratories
* NG Sequencer, DNA Sequencer, qPCR
* Laser Ablation

Excellence programmes

* *MARSS* (Equipex): Mass spectrometry centre, for the speciation, chemical reactivity and imaging for environmental and material sciences
* *XYLOFOREST* (Equipex): Transformation of wood and forest management
* *STORE-EX* (Labex): Electrochemical storage of energy
* *TOURS 2015*: Development of a Numerical Economy : energy integrated micro-sources
* *AMORAD*: Forecasting dispersion of radionuclides

Associated Technological Centres

* *UT2A*: Ultra Trace Analyses Aquitaine - Technological centre for analytical chemistry
* *CANOE*: Technology transfer platform in the field of composites based on nanoreinforcements and bioreinforcements

Partnerships

Industrial

AGILENT, AIRBUS, ALLTECH, ARKEMA, BELECTRIC OPV, EMAC, EXON, MERCK, PVDSA, SAFT, ST-Microelectronics, STORENGY, TIGF, TORE, TOTAL, TOYAL, TURBOMECA

Institutional

ADEME, CEA, IFP, IFREMER, IRSN, LNE

European and International Projects

* BIOCHROME: Foncicyt
* BIOSOURCE-COMP: Interreg - Poctefa
* EUROLIS-HELIS: Nanotechnologies Materials Production (NMP)
* ELENA: Interreg - Poctefa
* ESTABLIS: FP7 People - ITN
* METMIC: Europe CTP Espagne
* METRA: The European Metrology Research Programme (EMRP)
* MOTAUR: FP7 People - IEF

* NAYADE: Societal challenges - Energy
* ORQUE SUDOE: Interreg - Sudoe
* POLION: Marie Curie Action - IRSES
* SOLARE-EVOLUTION: FP7 People - IEF
* SYNABCO: FP7 People - IEF
* TCNA: Interreg - Sudoe

Staff

* 42 Full Professors
* 46 Assistant/Associate Professors
* 26 Post-Docs
* 61 PhD students
* 55 Research & Technical Staff
* 10 Administrative Staff

Contact

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