INSTITUTE OF ANALYTICAL SCIENCES AND PHYSICO-CHEMISTRY FOR THE ENVIRONMENT AND MATERIALS

APPLICATION SECTORS

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

PARTNERSHIPS

INDUSTRIAL

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

INSTITUTIONAL

- ADEME
- CEA
- IFP
- IFREMER
- IRSN
- LNE

STAFF

- 63 professors researchers
- 21 researchers
- 84 PhD students and post-docs
- 19 contract engineers
- 35 engineering and technical staff

SKILL CENTRE

- Analytical chemistry: Characterisation and metrology
- Theoretical chemistry: Methodology and modelling
- Chemistry and Physics of Materials: Synthesis and preparation
- Physical chemistry: Reactivity, surfaces and interfaces
- Biogeochemistry: Microbial ecology

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

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 m^2 polymer synthesis laboratories
- NG Sequencer, DNA Sequencer, qPCR
- Laser Ablation

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COMPETITIVENESS CLUSTER

- **AESE**: Aeronautics, Space and Onboard systems
- **AVENIA**: Avenir Energie Environnement

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

FUTURE INVESTMENTS

- **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

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
- **TECNA**: Interreg - Sudoe

IPREM CONTACT

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