Istituto per i Processi Chimico-Fisici

U.O.S. Pisa

Co
Naz
delle Ric

People | Labs | Running projects | Research products | Job offers | Safety | How to reach us

Home

The Pisa unit of the Istituto per i Processi Chimico-Fisici (Institute for the Chemical and Physical Processes), which belongs to the Dipartimento di Materiali e Dispositivi (Department for Materials and Devices) of the Consiglio Nazionale delle Ricerche (National Research Council), is located in Via G. Moruzzi 1, inside the CNR Research Area of Pisa (the largest research area in Italy), just outside the medieval city center.
The institute is formed by about 40 researchers, including CNR employees and associates, plus 9 units, including technicians and administrative staff. The institute research covers a wide variety of skills: chemical synthesis, characterization and development of materials, spectroscopic techniques, thermodynamics, calorimetry, molecular modeling techniques, design and computational nanotechnology, dynamics of coherent structures in fluids and magneto-fluids.

These research and trainig activities have a strong influence in areas of high social and economic impact, such as health, environment, energy, industrial and cultural heritage.

The staff of the Pisa unit carries out its research activity in the following areas:

- modeling, synthesis and characterization of polymeric materials, both multi-phase and / or characterized by a functional modular structure and composition;
- interface and confinement effects on the physical and chemical properties of structured materials and composites;
- relaxation dynamics of liquids and amorphous solids;
- thermodynamic methods for the study of materials and processes;
- electronic magnetic resonance methodologies for the study and development of materials;
- electromagnetic and acoustic methods and their application to materials and the environment;
- computational-theoretical approaches to study the spectroscopic properties of molecules, aggregates and materials;
- development and implementation of (multiscale) models and methods in the study of nanostructures and nanosystems;
- development of models and algorithms to study the dynamics of coherent structures in fluids and magneto-fluids.

The research activity is carried out in the IPCF laboratories by employing advanced scientific instruments in collaboration with a variety of both national and international academic and private institutions.