

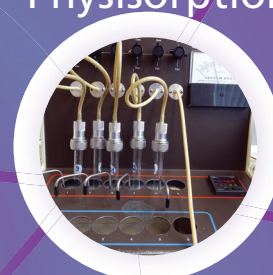
## Crystallography

## Elemental analysis

## Solid state NMR



## Physisorption

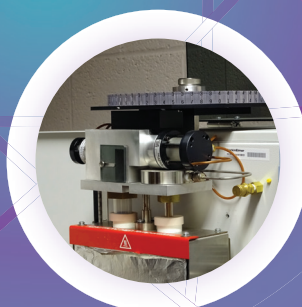


## Single-crystal X-ray diffraction

## Powder X-ray diffraction



## Chromatography



## Centrifugation



## Liquid state NMR



## Porosimetry



Our research is supported by



## DESCRIPTION

The PC<sup>2</sup> Platform is constituted by a large park of instruments including: nuclear magnetic resonance (both liquid and solid state) spectrometers, single-crystal and powder X-ray diffractometers, instruments for the analysis of the textural properties (N<sub>2</sub> physisorption, mercury porosimetry, ...) and for the chemical composition (combustion chemical analysis, ICP, ...) as well as separation techniques (chromatography, centrifugation...)

The combination of these techniques together with the presence of technicians full time dedicated to the analysis of the samples and highly qualified researchers for the development of advanced applications represent a strategic feature of this platform. Among these characterization techniques solid state NMR and X-ray diffraction emerged as advanced tools for characterization.

The platform is active in collaboration with academic teams, both at a national and international level. It also has a tradition of fruitful collaborations with industrial partners, especially in the fields of materials sciences and with the food and pharmacological industries.

## EXPERTISE

All the equipment combined with the technical and scientific expertise available at the PC<sup>2</sup>.

## EQUIPMENT

### X-RAY DIFFRACTOMETERS

The X-ray diffraction instruments are used for crystal structure determination, crystalline phase identification, size/strain analysis, etc.

Single-crystal diffractometer Oxford Diffraction Gemini (Mo/Cu radiation, CCD detector)

Powder diffractometer PANalytical – X'Pert Pro MRD (Cu radiation, Bragg-Brentano geometry)

Crystal structure determination, absolute structure, protein crystal screening

Crystalline phase identification and quantification, size/strain analysis

### NMR spectrometers

Solid-state 500 MHz Bruker Avance (several MAS probes)

Liquid-state 500 MHz Jeol ECZR (5-mm inverse broadband probe, autosampler)

Solid-state 400 MHz Varian VNMRS (several static and MAS probes)

Liquid-state 400 MHz Jeol ECX (5-mm direct broadband probe, autosampler)

Other

Elemental analysis, centrifugation, gas physisorption, mercury porosimetry.

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