MATERIAL CHARACTERIZATION

Shared tools and expertise

SERVICE OFFERING

With several characterization platforms spread over 300 m² Axel'One provides a wide range of tools and services for mechanical and physical-chemical characterization:

- Bench testing development and tool adaptation
- Characterization materials properties
- All kind of materials can be characterized in a wide range on conditions (high and low temperature, controlled hygrometry) and speed (dynamic or static)
- Open access for SMEs and public or private entities to the characterization test bed covering shared tools and services

EXPERTISE

Axel'One service offering is based on the expertise and skills from several key players on the platform such as:

- MECANIUM, partner and operator for mechanical characterization tests. Tools are located in Axel'One PMI and at INSA Lyon
- SCIENCE ET SURFACE, specialist in surface analysis and characterization

ÉQUIPMENT

Mechanical charaterization

- Tensile/compression: machines from 10 N to 750 kN
- Torsion: machines up to 2 kN.m
- Combined solicitation: biaxial machine up to 50 kN
- Bending/shearing: specific sets of test depending on coupon size
- Impact testing: Hopkinson bar system
- Displacement sensors
- Extensometer
- Strain gauge
- Video extensometer
- Digital image correlation
- Speckle interferometer

Wide range of experimental conditions:

- Thermal chambers: -70°C to +600 °C
- Induction heading up to 1200 °C (10 °C/s)
- Joule effect heating up to 1600 °C (1000 °C/s)
- Cryostats for testing down to -196 °C
- Testing systems in controlled hygrometry and/or controlled atmosphere

Mechanical characterization of surface

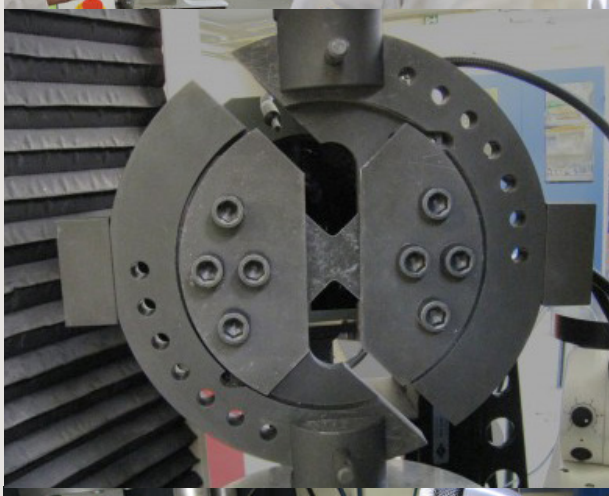
Tribometer UMT of Bruker:

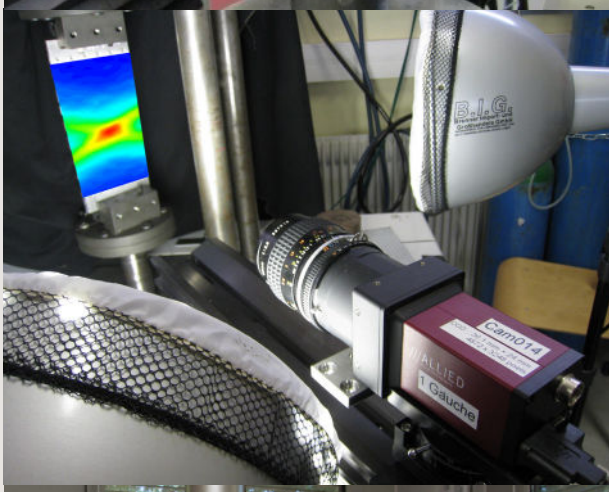
- Rockwell Indenter
- Optical imaging
- Hardness
- Young's module

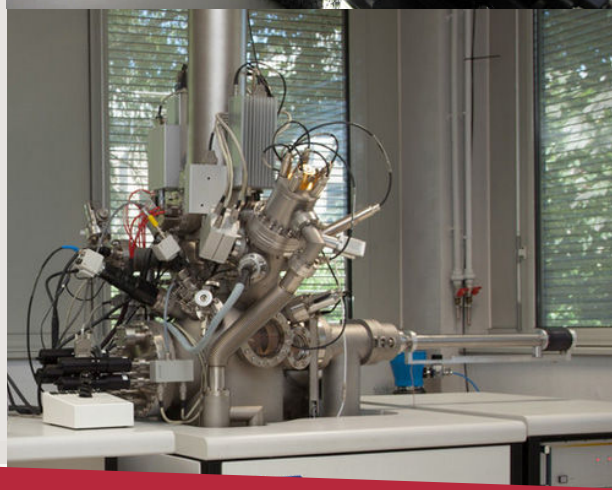
Surface analysis (partnership with Science et Surface)

At nanometric scale:

- Scanning Electron Microscopy (SEM)
- X-Ray Photoelectron Spectroscopy (XPS)
- Dynamic-Secondary Ion Mass Spectrometry (D-SIMS)
- Time of Flight-SIMS Spectrometry (Tof-SIMS)
- Surface Infrared Spectroscopy







CONTACT

Axel'One

+33 4 28 27 10 20 / MATERIAU@AXEL-ONE.COM

WWW.AXEL-ONE.COM