

# MECHANICAL AND THERMOMECHANICAL CHARACTERIZATION OF MATERIALS AND COMPONENT QUALIFICATION

**Innovations and benefits** - This service allows to identify the properties, define the application and verification of the development process of materials and components, performing tests at temperatures up to 1500°C. The wide range of instruments and skills allow to actively participate in the development of new standards of characterization and component qualification.

**Uses** - Determination of the mechanical and thermomechanical characteristics of components and material constitutive laws by means of tensile, compression, bending, resilience, hardness, toughness, creep, fatigue tests. It is possible to:

- perform standard tests on samples instrumented with data processing and static analysis of results, also for determining the material constitutive laws;
- design and develop specific tests, even out-of-standard, supported by FEM and reliability analysis, also on the basis of specific needs by manufacturing companies.

**Past and present activities** - Collaborations with companies through contract agreements and joint participation in national and European projects. For example: ARS Tech s.r.l., ATR Group s.r.l., Automobili Lamborghini S.p.A., Dallara Automobili S.p.A., ECO certificazioni S.p.a., EMA - Europea Microfusioni Aerospaziali, Ferrari S.p.A., Fin-Ceramica Faenza S.p.A., GE AVIO S.r.l., HP Composites srl, Industrie Bitossi S.p.A., Neubor Glass, Kiwa Cermet Italia, KTM-Sportcar GmbH (AU), RI-BA Composites, Sacmi Imola s.c., Scuderia Toro Rosso S.p.A., Stafer S.p.A., Stara Glass, UFI FILTERS S.p.A.



*MTS testing machine, equipped with furnace, to perform bending test up to 1500 °C*

**CUSTOM** Thanks to its flexibility, the characterization service can be adjusted to different needs and contexts.