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RESEARCH CENTRE ON STRUCTURAL MATERIALS (CIME)

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Universidad Rey Juan Carlos
Universidad Complutense de Madrid

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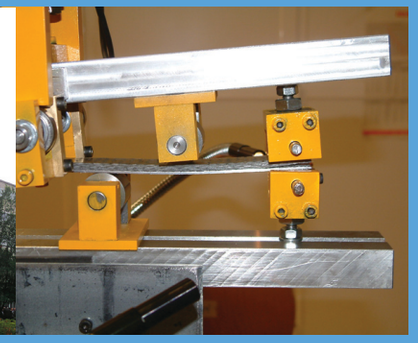
RESEARCH CENTRE ON STRUCTURAL MATERIALS (CIME)



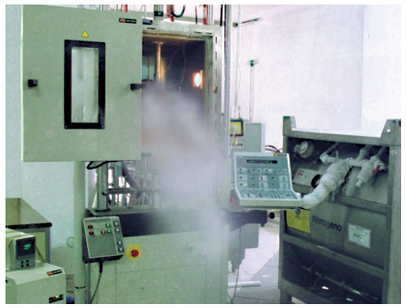
The CIME is a research centre made up of several consolidated groups that carry out their research works in the field of structural materials.

In this centre, the following groups develop their research activity: Advanced Structural Materials and Nanomaterials (MATESAN), Computational Mechanics (GMC), Polymers, Characterization and Applications (POLCA) and Hybrid Materials (MH).

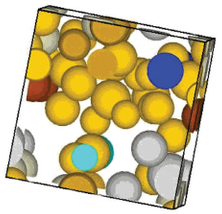
RESEARCH CENTRE ON STRUCTURAL MATERIALS

RESEARCH LINES

- Numerical simulation of large deformation and dynamic problems
- Synthesis, characterization and application of polymers, compounds and nanocompounds
- Hybrid materials
- Materials with hierarchical structure
- Particle technology
- Bioinspired materials
- Adhesion and adhesives
- Mechanical characterization of structural materials
- Analytical and numerical simulation of the mechanical properties in materials
- Structural integrity

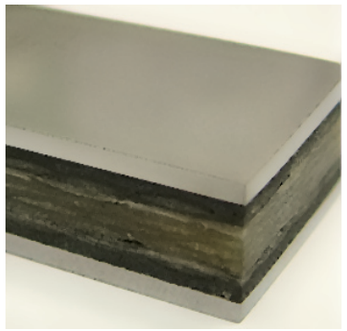


Extreme loading conditions (high temperature, cryogenics, impact, fatigue, fracture, etc.).

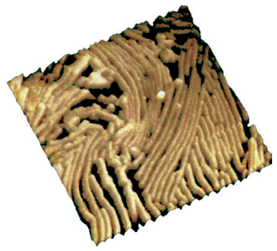


Numerical simulation of composite, metal and ceramic materials, and biomaterials.

Particle processing technology to obtain high and low density metal, ceramic and composite materials. Structural foams.

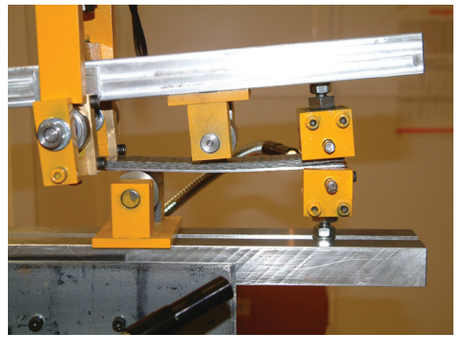


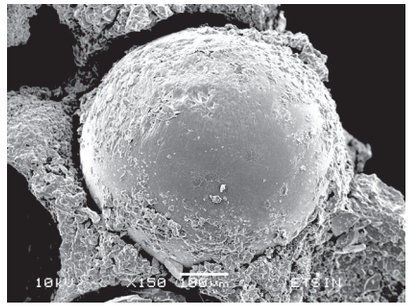
Fibre-metal laminated material made up of metal and polymer-matrix composite materials with structural adhesives.



Microstructure-properties relationship in structural materials.

Determination of mechanical properties and fracture and fatigue behaviour in structural adhesive joints.





Attainment and characterization of light hybrid materials with damage tolerance and high capacity for energy dissipation.

Development of bioinspired adhesives, with hierarchical nanostructure and multiscale cohesive behaviour.