Structural Integrity, Reliability and Micromechanics

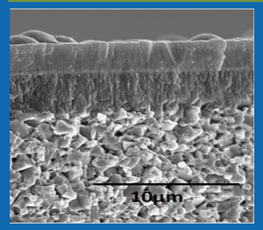
CIEFMA

UPC Departament de Ciència dels Materials i Enginyeria Metal·lúrgica
UNIVERSITAT POLITÈCNICA DE CATALUNYA

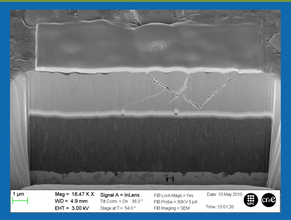
EEIGM

CIEFMA focuses on the assessment and understanding of mechanical integrity and reliability of engineering materials at different length scales

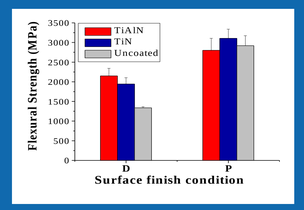
Functional Performance of Coated Tools for Metalforming Applications

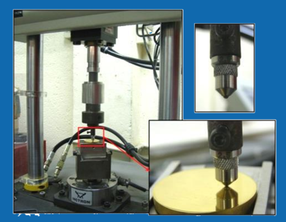


Bilayer structure of WC/C on top of TiN

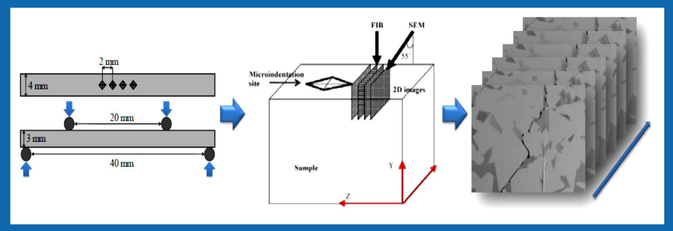


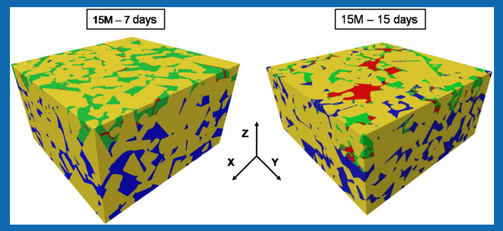
Subsurface damage observation by FIB





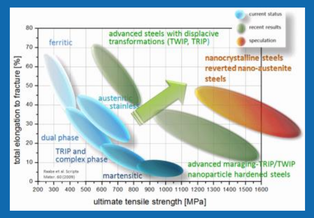
Contact damage testing

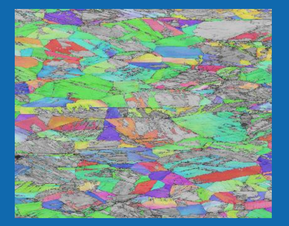


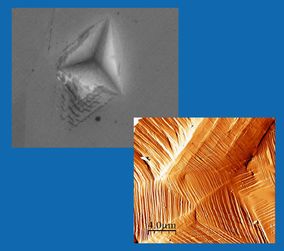


Corrosion-induced damage in hardmetals

Performance Optimization of High Strength Metallic Alloys by Microstructural Design

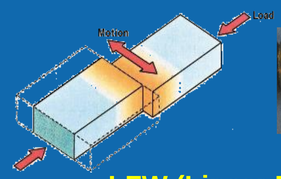




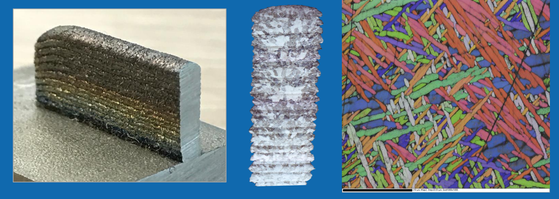


AHSS, and in particular TRIP steels, are investigated trying to correlate microstructural characteristics with macro- and micro-mechanical response

Structural integrity under service conditions of engineering materials, including joint structures and additive manufacturing



LFW (Linear Friction Welding)



Ti6Al4V samples produced by laser cladding

EEIGM Teachers/Researchers involved :

Antonio Mateo

Expertise :
Failure analysis
Fracture and fatigue of advanced metallic alloys

Emilio Jiménez

Expertise :
Micromechanical characterization of advanced ceramics, coatings, surfaces and composites.

Gemma Fargas

Expertise :
Structural integrity of advanced stainless steels, corrosion-induced damage in hardmetals and 3D-printing of zirconia-based ceramic materials