

Structures and Materials High strain rate testing

- Complex materials specimen
- Elementary structures
- From statics to dynamics

Static and dynamic tests

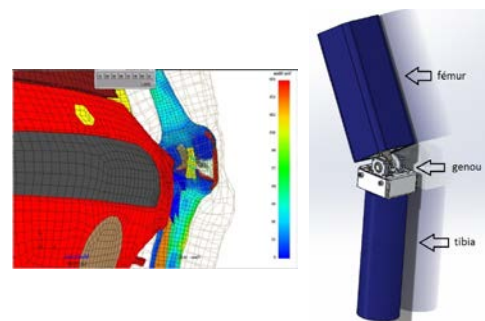
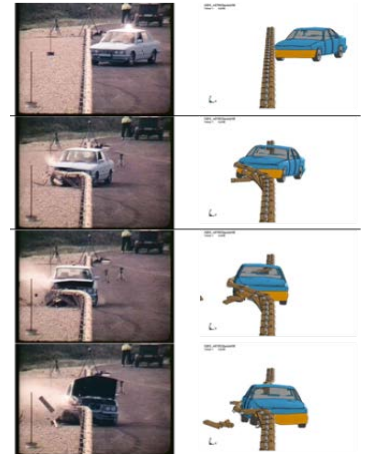
- Tensile, bending and compressive loading
- High strain rate from 200 s^{-1} to 10000 s^{-1}
- Specific test assembly
- Confidential working area

Expertise and Techniques

- Skill in dynamic tests
(high strain rate material characterization,
modal analysis...)
- Static tests
- Low and high impedance materials

Access to resources

- Working area, test devices



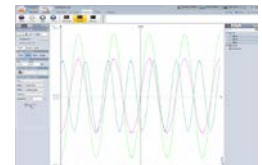
■ Test devices

- Split Hopkinson Pressure Bars (SHPB) for dynamic characterization materials
 - Stress-Strain curves at constant strain rate
 - 4 sets of bars (steel, aluminium, POMC, PETP)
 - Strain rate up to 10000 s⁻¹
 - Impact speed up to 20m/s
 - Set of impactors for each set of bars
- Block-Bar device for dynamic compressive tests
 - Impactor 50kg
 - Impact speed 6-8m/s
- Tensile device Zwick250 – Quasi-static
 - 25 tonnes capacity
 - Sensors 1kN, 5kN, 10kN and 250kN



■ Measurement devices

- High performance data acquisition system DEWETRON-30-8 (2MHz)
 - 4 HSI-STG input modules (Strain gauge bridge - high bandwidth)
 - 1 DAQP-LV input module (50V)
 - Dewesoft - Analysis Software
- Digital sampling oscilloscope Picoscope 5442A – 4 channels (60MHz)
- Acquisition system Siglab 2022A – 2 inputs – 2 outputs – 20kHz
- Accelerometers, load sensors, LVDT sensors, impact hammer, vibration exciter



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