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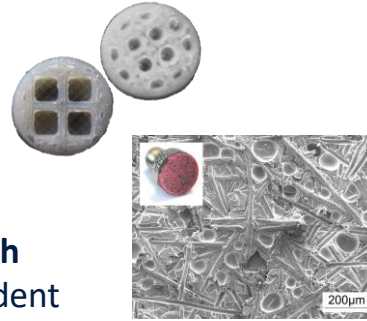
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METHODS

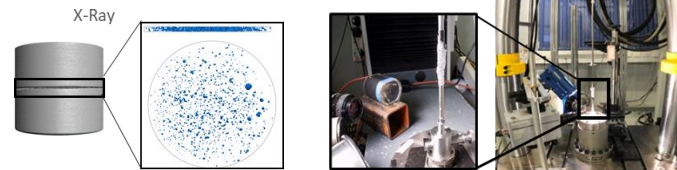
Materials

- Polymers
- 3D printed TPE
- Composites



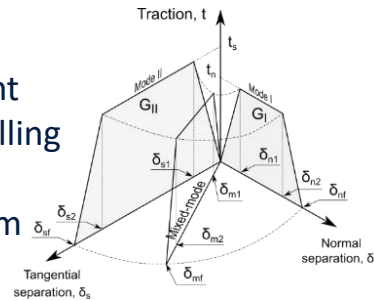
Experimental Research

- Strain-rate dependent
- Microstructural analysis
- Data acquisition



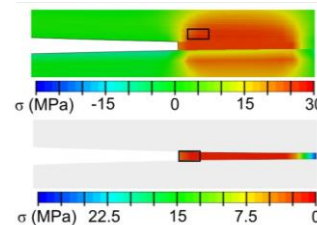
Constitutive Modelling

- Strain-rate dependent
- Cohesive zone modelling
- Hyperelasticity
- Fracture & Continuum mechanics



FEM Simulations (ABAQUS, LS-DYNA)

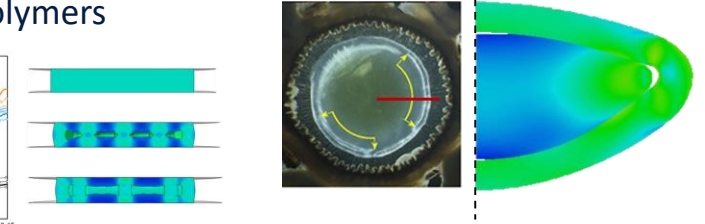
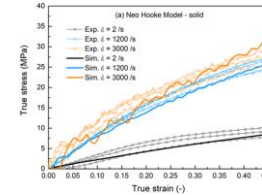
Comp. Part B: Eng., 195, (2020)



APPLICATIONS

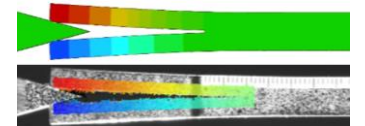
Large Strain Material Deformation

- Biomechanics (accommodating eye lens)
- 3D printed polymers

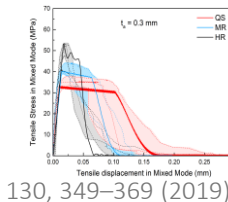
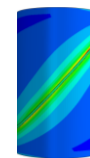


Mechanical Performance of Interfaces:

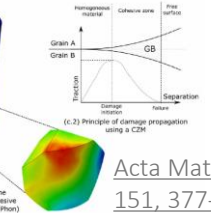
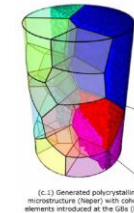
- Grain boundaries in crystals
- Adhesive joints
- Delamination of composite plies



Int. J. Imp. Eng., 138, (2020)



J. Mech. Phys. Solids, 130, 349–369 (2019)



Acta Materialia, 151, 377–394, (2018)

Failure Prediction:

- Smart 3D printed mouthguards (i.e. Field hockey)
- Aerospace structures

