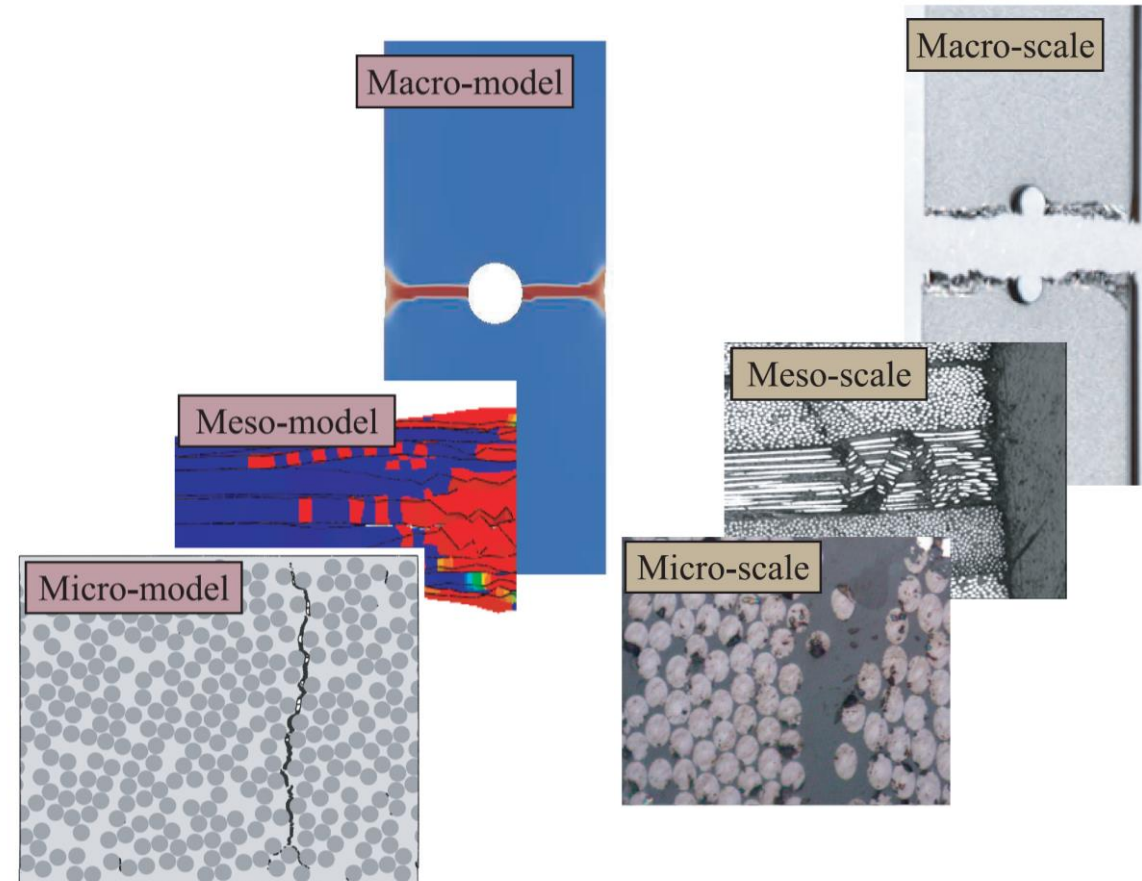


Porto-Composites-Lab

Physical and virtual characterisation of advanced composite materials

Main researcher: Pedro P. Camanho

- Development of novel concepts for advanced materials, structures, and manufacturing processes.
- Advanced analysis methods.
- R&D of semi-products for the composite value chain



Porto-Composites-Lab

Physical and virtual characterisation of advanced composite materials

Description:

- R&D and TT lab for advanced composite materials, processes, characterisation and analysis

Scope & Market:

- Advanced polymer matrix composites testing and analysis for the conventional and non-conventional mobility applications

Innovation & Benefits:

- **Material development:** thin-ply laminates, hierarchical composites, hybridization of different fibres
- **Analysis models / Design:** modelling across the micro- / meso- / macro-scales, integrated tools for the generation of virtual allowables
- **Processes:** development and testing, high-pressure RTM, thermoforming and *in situ* consolidation of thermoplastic based-composites, multi-material forming, out-of-autoclave *prepreg* curing, additive manufacturing
- **Testing:** quasi-static, impact and compression after impact, fatigue, digital image correlation, structural health monitoring, development of new test protocols for intralaminar fracture toughness, high-strain rate characterisation and mechanically fastened joints