

## **NUMERICAL MODELLING OF COMPOSITE MATERIALS AND STRUCTURES**

*Sharp Adali<sup>1</sup> and Georgios Stavroulakis\*<sup>2</sup> and Georgios Drosopoulos<sup>3</sup>*

*<sup>1</sup>University of KwaZulu-Natal*

*<sup>2</sup>Technical University of Crete, Chania*

*<sup>3</sup>University of Central Lancashire*

### **MINISYMPOSIUM**

The purpose of this mini-symposium is to bring together researchers from civil, mechanical, aerospace and other engineering fields and investigate a wide range of problems, related to the mechanical response of composite materials and structures using numerical methods. Papers related to modelling, design and optimization of various types of composite materials and structures are solicited.

Modern fibre reinforced composite laminates, sandwich panels, auxetics, novel metamaterials, and nanocomposite materials will be part of the mini-symposium. Traditional composite materials including masonry or concrete are also included in the topics of the symposium.

Papers on different failure types, on mechanical behaviour of structures and on material properties are welcome. Different constitutive descriptions, including damage mechanics, plasticity, contact mechanics, etc. as well as multi-scale and homogenization methods, are encouraged. Load types include but are not limited to statics and dynamics, thermal effects and acoustic applications. Modern data-driven and physics-informed methods including machine learning solutions, which are able to exploit experimental data, are also included in the topics of the symposium.