ADVANCED MATERIALS: COMPUTATIONAL ANALYSIS OF PROPERTIES AND PERFORMANCE

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MINISYMPOSIUM

This is a long-standing interdisciplinary Minisymposium, held at WCCM 8 (Venice, Italy, 2008), WCCM 9 (Sydney, Australia, 2010), WCCM 10 (Sao Paulo, Brazil, 2012), WCCM 11 (Barcelona, Spain, 2014), WCCM 12 (Seoul, South Korea, 2016), WCCM 13 (New York, USA, 2018), WCCM 14 (Paris, France/virtual edition, 2021) and WCCM 15 (Yokohama, Japan/ virtual edition). Its aim is to bring together specialists in mechanics and micromechanics of materials, applied mathematics, continuum mechanics, materials science, physics, biomechanics as well as mechanical, automotive, aerospace and medical engineering to discuss the latest developments and trends in computational analysis of relationships between the microstructural features of advanced engineering and natural materials and their local and global behaviour as well as its effect on performance of components and structures.

The topics of the Minisymposium include, but are not limited to, the following:

• computational mechanics of advanced materials and structures;

• effect of microstructure on properties and performance of advanced materials;

• prediction of deformational behaviour and life-in-service of structures and components made of advanced materials;

• computational models of biological and biomedical materials;

• computational methods for analysis of modern visco-elastic composite and nanocomposites materials;

• mechanics of composite materials with relaxation and phase transitions;

• simulation of failure mechanisms and damage accumulation processes in advanced materials;

• reliability analysis of microelectronic packages;

• computational analysis of cutting of advanced materials;

• numerical simulation of mechanical behaviour of materials in technological processes;

• optimization problems in mechanics of advanced materials and structures.