Chairman	Labeas G.
Topic	*Additive Manufacturing – Topology Optimization*
Objectives	The Additive Manufacturing (AM) method is a modern production method based on the selective material deposition for the creation of the final geometry of the produced component. AM introduces significant advantages when compared to the classical production methods, notably in cases of components with complex geometries. The use of AM provides the ability to design and produce complex and demanding components with optimum material topology and results in optimum performance, as far as functionality, load transfer, strength and mechanical behaviour is concerned. Despite AM's advantages, it is not yet industrially established, due to problems during its transition from a rapid prototyping method to a mainstream industrial production process. The ''Additive Manufacturing – Topology Optimization' session will mainly but not exclusively focus on: • Novel design and topology optimization methodologies applied in the development of AM parts of optimum weight, cost and functional properties. • AM process simulation methods at the micro, meso and macro scale; techniques to improve process simulation efficiency. • AM production technologies for components of high complexity, high technological value and / or special formats, e.g. cellular material systems, nanoenabled materials. • In-situ AM process monitor and control. • Post-processing and joining of AM parts. • Experimental testing for the validation of the achieved AM product quality; standardisation approaches to AM testing. • Non-destructive evaluation of AM parts.