

**MS03: Multiscale and multifunctional composites: design and identification** (Prof. Gilles Lubineau, KAUST, Saudia Arabia; Prof. Marco Alfano, University of Calabria, Italy)

Modern composite materials have been successfully used for processing both structural and non-structural parts in several industries such as aeronautics, aerospace, naval and civil engineering. Yet, increasing the composite yield in next generation structures requires additional efforts in exploring their potential to systematically integrate/merge those functions that are, as today, ensured by various parts or materials. The purpose of this mini symposium is to gather leading researchers in the area to discuss design strategies (both experimental and/or computational) for achieving multifunctional composites materials which have the potential to dramatically improve system-level performance and efficiency. Topics of discussion will include (but will not be limited to) the following:

- joining techniques for dissimilar materials and structures
- effects of interfaces and interphases on the behaviors of composites
- micro mechanical approaches for multi physics problems;
- effect of microstructure on properties and performance of advanced materials;
- prediction of life-in-service of advanced materials;
- simulation of failure and damage accumulation in advanced materials;

