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## Preface

The field of hybrid materials can trace its origins to sol-gel chemistry,<sup>[1]</sup> preceramic polymers,<sup>[2,3]</sup> polymer intercalation of low-dimensional inorganics<sup>[4]</sup> and biomimetic materials processing.<sup>[5]</sup> Basically this field is defined as the development of synthetic, characterization and modeling methods that allow researchers to assemble organic/inorganic (nano) composites with complete control of mixing over multiple dimensional scales. The impetus for the recent exceptional growth of this field derives from the fact that it allows researchers to combine the properties of organic materials with those of inorganic materials at length scales that permit the tailoring of global properties (transparency, conductivity, photonic properties, etc.) with exceptional control. There are now more than 6000 articles published in the area of hybrid materials each year.

This special issue concerns recent advances and 'Future Trends in Organic/inorganic Nanocomposite Hybrid Materials.' The work contained in this issue consists of papers from the majority of the participants in the US Japan workshop of the same title held in Himeji, Japan in May 2009. This is the fifth three-year workshop on these materials and the papers represent the state of the art in hybrid materials design, synthesis, characterization and modeling. The organizers would like to thank the US Air Force Research Laboratory, the Office of Naval Research Global and *Applied Organometallic Chemistry* for support of the workshop.

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