

## Preface

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Organic/inorganic hybrid materials have received a tremendous amount of attention in the last few years for a variety of reasons but primarily because they appear to offer the potential to combine the properties of inorganic and organic materials into a single, nanocomposite substance. Through proper design and synthesis (or processing) these nanocomposites can offer properties that are not simply additive, but superior to the individual components. Perhaps one of the primary reasons for this is that novel properties derive from interfacial interactions which typically are minor components in macrocomposites but can represent a third phase in nanocomposites. Polyhedral silsesquioxanes,  $(\text{RSiO}_{1.5})_n$  where  $n = 6, 8, 10 \dots$  but especially where

$n = 8$  are exemplary nanocomposite materials because all of the organic-inorganic interfaces consist exclusively of covalent bonds and the degree of bonding and the types of bonds can be extremely well defined by synthetic methods. Hence their study offers the potential to clearly identify the fundamental principles that govern interfacial properties as well as global properties in organic/inorganic nanocomposite materials. The series of papers presented in this issue provides a diverse view of activities in the field of nanocomposite materials chemistry.

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