

PREFACE

Following the breakthrough discovery of the so-called M41S silica mesostructures in the early nineties, the area of periodic mesoporous materials has been growing steadily. Important findings appear in the literature on a regular basis, providing new impetus for further innovations, as well as creating new areas of research. Remarkable progress has been made in the area of material synthesis, marked by the following key discoveries: (i) generalization of synthesis strategies involving van der Waals, electrostatic and covalent interactions between the amphiphile and the inorganic species, (ii) framework and surface modified silicas via direct synthesis and post-synthesis modification, (iii) non-silica mesostructured materials via supramolecular templating pathways (e.g., metals, transition metal oxides and chalcogenides), and via silica or carbon mesophase casting (e.g., mesoporous carbons, oxides, metals, alloys and polymers), (iv) mesoporous organosilicates, and (v) assembly of zeolite nanocrystals into mesoporous structures. Furthermore, a wide variety of potential applications in catalysis, adsorption, separations, environmental cleanup, controlled drug delivery, sensing and optoelectronics are reported on a regular basis.

Though dominated by silica-based mesoporous materials, this series of international symposia "*Nanoporous Materials*" deals with a variety of other mesoporous materials, including clays, carbon molecular sieves, porous polymers, sol-gel, and imprinted materials, as well as self-assembled organic and organometallic zeolite-like materials. Now in its fifth round, *Nanoporous Materials V* will provide an international platform for leading scientists and newcomers alike to discuss recent advances in the areas of synthesis, characterization and applications of organic, inorganic and hybrid porous materials.

Nanoporous Materials V will feature three plenary lectures and seven keynote lectures covering a wide range of porous materials, including porous silicas, organosilicas, carbons and semiconductors, as well as metal oxides, zeolites and metal-organic frameworks. In addition, more than 200 oral and poster presentations will be given both by world-class experts and young scientists. Based on the wide range of these contributions and their high quality, the Organizing Committee is confident that the *Nanoporous Materials V*

Symposium to be held in Vancouver, Canada on May 25-28, 2008, will be as successful as its predecessors.

The current volume represents a sampling of the oral and poster peer-reviewed presentations to be made at the **Nanoporous Materials V Symposium**. It includes 73 contributions divided into 13 chapters dealing with specific topics within the three broad themes of interest: (i) synthesis of mesoporous silicas and related materials, (ii) synthesis of non-silica based nanoporous and nanostructured materials, and (iii) characterization and applications of nanoporous materials.

Certainly the current volume of proceedings does not cover all topics in the area of nanoporous materials; however, it reflects the recent trends and advances in this rapidly growing field, which continues to attract the attention of materials scientists, chemists, chemical engineers and physicists around the globe. We hope that this proceedings volume will benefit both newcomers as well as researchers from academia, national laboratories and industry working in the synthesis, characterization and applications of nanoporous materials.

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