



**Draft Abstract
for a
Young Chemists' workshop on
Solution chemical processing of advanced materials
May 10-13 2009 (preliminary dates)**

Solution chemical synthesis, like the sol-gel method, has emerged as a powerful and versatile tool to the complex materials of tomorrow's edge technologies. It offers the possibility to produce powders, fibers, thin films and coatings, as well as morphologically unique materials such as aerogels, mesoporous materials, and well-defined nanocrystals. Mild processing conditions allows for production of bio- and organic-inorganic hybrid materials. Applications are found in separation, energy generation and storage, space technology, catalysis, sensors, magnetics, optics, microelectronics, refractory materials, functional coatings, biotechnology and medicine.

In the development of new materials and reliable synthesis routes, fundamental knowledge is needed in a wide range of areas, stretching from molecular precursor design via solution reactions, chemistry of colloids and amorphous gels, to the complex set of reactions leading to the designed structures and materials. Thus, integrated knowledge is required, encompassing many different disciplines of chemistry; Organic chemistry, Inorganic chemistry, Sol-gel chemistry, Colloid chemistry, Physical chemistry, Materials chemistry, Polymer chemistry, Biomaterials chemistry, Composites chemistry, Meso- and microporous materials chemistry...

The objective of this young chemists' workshop is to bring together experimentalists and theoreticians from different areas of chemistry, as well as related industries, with shared interests in solution chemical synthesis. The workshop should be a forum for discussing topics related to synthesis and characterization of solution derived materials, and it also intends to address the challenges accounted when up-scaling from laboratory to industrial scale. Topics will include:

- Precursor design
- Bio-inorganic and Organic-inorganic hybrid materials
- Porous materials
- Thin films and Coatings
- Nanopowders and nanostructures
- Functional nanomaterials and nanocomposites

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