Studies On Porous Monolithic Materials Prepared Via Solgel Processes

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This thesis focuses on porous monolithic materials that are not in the forms of particles, fibers, or films. In particular, the synthetic strategy of porous monolithic materials via the solgel method accompanied by phase separation, which is characterized as the non-templating method for tailoring well-defined macropores, is described from the basics to actual synthesis. Porous materials are attracting more and more attention in various fields such as electronics, energy storage, catalysis, sensing, adsorbents, biomedical science, and separation science. To date, many efforts have been made to synthesize porous materials in various chemical compositions - organics, inorganics including metals, glasses and ceramics, and organic-inorganic hybrids. Also demonstrated in this thesis are the potential applications of synthesized porous monolithic materials to separation media as well as to electrodes for electric double-layer capacitors (EDLCs) and Li-ion batteries (LIBs). This work is ideal for graduate students in materials science and is also useful to engineers or scientists seeking basic knowledge of porous monolithic materials. EAN/ISBN: 9784431541981 Publisher(s): Springer, Berlin, Springer Japan Format: ePub/PDF Author(s): Hasegawa, George

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