

Porous Materials: Processing and Applications

By Peisheng Liu Ph.D., Guo-Feng Chen

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Engineers and scientists alike will find this book to be an excellent introduction to the topic of porous materials, in particular the three main groups of porous materials: porous metals, porous ceramics, and polymer foams. Beginning with a general introduction to porous materials, the next six chapters focus on the processing and applications of each of the three main materials groups. The book includes such new processes as gel-casting and freeze-drying for porous ceramics and self-propagating high temperature synthesis (SHS) for porous metals. The applications discussed are relevant to a wide number of fields and industries, including aerospace, energy, transportation, construction, electronics, biomedical and others. The book concludes with a chapter on characterization methods for some basic parameters of porous materials. Porous Materials: Processing and Applications is an excellent resource for academic and industrial researchers in porous materials, as well as for upper-level undergraduate and graduate students in materials science and engineering, physics, chemistry, mechanics, metallurgy, and related specialties.

- A comprehensive overview of processing and applications of porous materials – provides younger researchers, engineers and students with the best introduction to this class of materials
- Includes three full chapters on modern applications - one for each of the three main groups of porous materials
- Introduces readers to several characterization methods for porous materials, including methods for characterizing pore size, thermal conductivity, electrical resistivity and specific surface area

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Editorial Review

About the Author
P.S. Liu is a professor in the College of Nuclear Science and Technology at Beijing Normal University (BNU), Beijing, China. He graduated at Chinese Academy of Science in 1998, and received his doctor's degree in materials science and engineering. He has ever served as the committeeman of the academic committee of the Key Laboratory of Beam Technology and Material Modification of Ministry of Education of China, and the first director of Material Physics Division and then the vice director of Nuclear Physics Research Institute at BNU. Investigating on porous materials and high-temperature coatings for quite a number of years, he has published extensively in the area of materials science and engineering as the first author, including about 60 SCI papers, more than 40 EI articles, and 6 academic books. In addition, he holds 8 Chinese invention patents as the first originator.

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