



## The Sol-Gel Handbook: Synthesis, Characterization and Applications, 3-Volume Set

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This comprehensive three-volume handbook brings together a review of the current state together with the latest developments in sol-gel technology to put forward new ideas.

The first volume, dedicated to synthesis and shaping, gives an in-depth overview of the wet-chemical processes that constitute the core of the sol-gel method and presents the various pathways for the successful synthesis of inorganic and hybrid organic-inorganic materials, bio- and bio-inspired materials, powders, particles and fibers as well as sol-gel derived thin films, coatings and surfaces. The second volume deals with the mechanical, optical, electrical and magnetic properties of sol-gel derived materials and the methods for their characterization such as diffraction methods and nuclear magnetic resonance, infrared and Raman spectroscopies.

The third volume concentrates on the various applications in the fields of membrane science, catalysis, energy research, biomaterials science, biomedicine, photonics and electronics.



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### **Editorial Review**

#### **Review**

"this is a great set of books.....within each chapter there are gems of knowledge." (Chromatographia 2016)

#### **About the Author**

David Levy is a Research Professor and head of the Sol-Gel Group at the Materials Science Institute of Madrid (ICMM) of the Consejo Superior de Investigaciones Científicas. His research interests are optical materials (bulk materials; thin-film coatings as AR optical coatings, protection transparent coatings and functional coatings; oxide nanoparticles) and liquid crystal materials, by Sol-Gel processing and their applications. During his time at The Hebrew University of Jerusalem David Levy pioneered the sol-gel process for the preparation of organically doped silica-gel glasses. He has more than 130 publications and a number of patents to his name, and has received numerous prizes in recognition of his groundbreaking work on sol-gel materials, including the "First Ulrich Prize" and the nomination to King Juan Carlos-I research award.

Marcos Zayat is currently vice-director of the Materials Science Institute of Madrid (ICMM). His scientific interests are centered on the design of new optical coatings and the characterization of their physicochemical properties. After having obtained his PhD in Materials Science from The Hebrew University of Jerusalem in 1997, Marcos Zayat joined the ICMM where he continues developing sol-gel materials for optical and electrooptical applications. He has published more than fifty original articles in prestigious scientific journals.

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