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"*This comprehensive and clearly written book on molecular dynamics simulations of nanostructured materials fills up the void between nanoionics and related fields, where theoretical arguments at a molecular or atomistic level have been still lacking. It gives a historical perspective of the field and covers fundamentals aspects as well as detailed explanations of analytical methods to treat nanoporous materials, nanocolloids, and gels, which makes it very useful for not only researchers but also graduate students.*"

Prof. Carlos Leon Yebra
Universidad Complutense de Madrid, Spain

"*This unique book has been written for both researchers and newcomers in the field of nanostructured materials and nanoionics. Enriched with Prof. Habasaki's guidance on applying molecular dynamics simulations to nanostructured systems, the monograph can be used for teaching a graduate course at universities. The contents are of great interest to condensed matter physicists, chemists, materials scientists, and engineers.*"

Prof. K. L. Ngai
CNR Istituto Processi Chimico-Fisici, Italy

Nanostructured materials with multiple components and complex structures are the current focus of research and are expected to develop further for material designs in many applications in electrochemical, colloidal, medical, pharmaceutical, and several other fields. This book discusses complex nanostructured systems exemplified by nanoporous silicates, spontaneously formed gels from silica-nanocolloidal solutions, and related systems and examines them using molecular dynamics simulations. Nanoporous materials, nanocolloidal systems, and gels are useful in many applications and can be used in electric devices and storage and for gas, ion, and drug delivery. The book gives an overview of the history, current status, and frontiers of the field. It also discusses the fundamental aspects related to the common behaviors of some of these systems and common analytical methods to treat them.

Junko Habasaki is senior scientist II at Schrödinger K.K., Japan. She graduated in chemistry from Tokyo University of Education, Japan, in 1977 and obtained her PhD in chemistry from Tokyo Metropolitan University in 1984. She was an assistant professor at Tokyo Institute of Technology and an invited professor of physics at Université de Lille 1, France (2007–2008). Dr. Habasaki retired from Tokyo Institute of Technology in March 2020. Her research focuses on the dynamics and structures of glasses, ionic liquids, and related systems using molecular dynamics simulations. She is a coauthor of the award-winning book *Dynamics of Glassy, Crystalline and Liquid Ionic Conductors* and also a technical committee member of the International Commission on Glass, TC27: Atomistic Simulation.

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