Microwaves in Nanoparticle Synthesis:
Fundamentals and Applications
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DESCRIPTION
For the first time, this comprehensive handbook presents the emerging field of microwave technology for the synthesis of nanoparticles. Divided into three parts—fundamentals, methods, and applications—it covers topics including microwave theory, scale-up, microwave plasma synthesis, characterization, and more. This offers both an important volume for academic researchers, and a resource for those in industry exploring the applications of nanoparticles in semiconductors, electronics, catalysis, sensors, and more.

ABOUT THE AUTHOR
Satoshi Horikoshi received his PhD degree in 1999 from Meisei University, and subsequently was a postdoctoral researcher at the Frontier Research Center for the Global Environment Science until 2006. He joined Sophia University as Assistant Professor in 2006, and then moved to Tokyo University of Science as an associate professor in 2008. He is currently the Vice-President of the Japan Society of Electromagnetic Wave Energy Applications, a Member of the Board of the International Microwave Power Institute, and the Editorial Advisory Board of Mini-Reviews in Organic Chemistry. His research interests include the application of microwave radiation to catalytic chemistry, to the effects of microwaves on photocatalysts for environmental protection, to the microwave-assisted organic syntheses, and to microwave effects on nanoparticles. He has authored over 110 scientific publications.
Nick Serpone received his Ph.D. from Cornell University (Physical-Inorganic Chemistry, 1968), after which he joined Concordia University in Montreal as Assistant Professor (1968-73), Associate Professor (1973-1980), and Professor (1980-1998). He was a consultant to 3M’s Imaging Sector for over 10 years. He took early retirement from Concordia University (1998) and was made a University Research Professor (1998-2004) and Professor Emeritus (2000 to present). He was Program Director at NSF (1998-2001) and has been a Visiting Professor at the University of Pavia, Italy, since 2002. His research interests are currently in the photophysics and photochemistry of semiconductor metal oxides, heterogeneous photocatalysis, environmental photochemistry, photochemistry of sunscreen active agents, and application of microwaves to nanomaterials and to environmental remediation. He has co-authored over 400 articles and has co-edited four monographs (for Wiley, Elsevier and the American Chemical Society).

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