Raman Spectroscopy and its Application in Nanostructures
Shu-Lin Zhang

DESCRIPTION

Raman Spectroscopy and its Application in Nanostructures is an original and timely contribution to a very active area of physics and materials science research. This book presents the theoretical and experimental phenomena of Raman spectroscopy, with specialized discussions on the physical fundamentals, new developments and main features in low-dimensional systems of Raman spectroscopy.

In recent years physicists, materials scientists and chemists have devoted increasing attention to low-dimensional systems and as Raman spectroscopy can be used to study and analyse such materials as carbon nanotubes, quantum wells, silicon nanowires, etc., it is fast becoming one of the most powerful and sensitive experimental techniques to characterize the qualities of such nanostructures.

Recent scientific and technological developments have resulted in the applications of Raman spectroscopy to expand. These developments are vital in providing information for a very broad field of applications: for example in microelectronics, biology, forensics and archaeology. Thus, this book not only introduces these important new branches of Raman spectroscopy from both a theoretical and practical view point, but the resulting effects are fully explored and relevant representative models of Raman spectra are described in-depth with the inclusion of theoretical calculations, when appropriate.

ABOUT THE AUTHOR

Professor Shu-Lin Zhang, Professor of School of Physics, Peking University.
**Academic Experience:** 1964-date: Joined the Department of Physics of Peking University, in where he has been engaged in fundamental research for 40 years. Since 1980 he has been interested in the research of Raman spectroscopy. 1986: The Visiting Associate Professor in the University of Illinois at Urbana-Champaign, USA. 2003: The Lecturer Scholar of Nobel Laureate C. N. Yang at the Chinese University of Hong Kong in 2003.

**Professional Activities and Awards:** 1995-2001: Director of the Committee on Light Scattering of Chinese Physical Society (CPS); 1995-2003: Councilor of CPS; 2000-: ex officio member the International Steering Committee (ISC) of the International Conference on Raman Spectroscopy (ICORS); 2002-2004: Chair of ISC of (ICORS); 2002-Now: International Advisor of the Committee on Light Scattering of CPS; 2004: Research work "Raman spectral research of several low-dimensional materials" was awarded the second class of the China National Award on Nature Science.

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