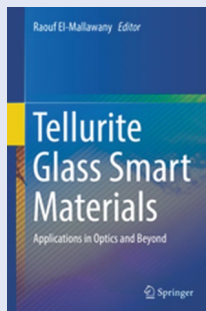


### Optical Measurement Mechanics

By Kaifu Wang

DE GRUYTER: 2018. 112PP. £62.50.

Composed of nine chapters, this text details the fundamentals of optical measurement mechanics, and describes different types of interferometry technique. For instance, the properties of holography and holographic interferometry, speckle photography and interferometry, and their digital counterparts are discussed. Other chapters included are on geometric Moiré and Moiré interferometry, phase-shifting interferometry, phase unwrapping, discrete transformation, low-pass filtering, digital image correlation and particle image velocimetry.

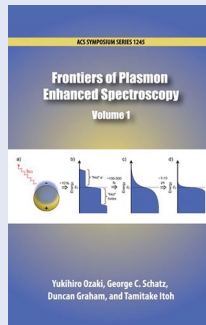


### Tellurite Glass Smart Materials

Edited By Raouf El-Mallawany

SPRINGER: 2018. 297PP. £109.99.

This title begins by introducing the physical properties of the non-crystalline solid, tellurite glass, followed by its applications for energy conversion and laser devices, and its structural and luminescence properties for laser applications. The text then goes on to describe the optothermal properties and optical properties of tellurite glass in the presence of gold nanoparticles. In particular, lanthanide-doped zinc oxyfluoro-tellurite glass as a new smart material is reviewed. Also discussed in the 12 chapters are the applications of tellurite glasses in optical sensing, the significance of near-infrared emissions, solar cells, solar-energy harvesting and luminescent displays. Last, the development of bioactive-based tellurite-lanthanide-doped hydroxyapatite composites for biomedical applications is detailed.

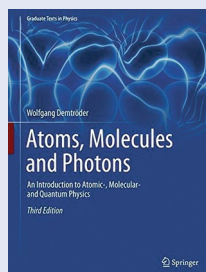


### Frontiers of Plasmon Enhanced Spectroscopy

Edited By Yukihiro Ozaki, George C. Schatz, Duncan Graham and Tamitake Itoh

OXFORD UNIVERSITY PRESS: 2018. 224PP. £97.00.

This volume reviews the latest advances in the theory of plasmonic enhancement and application of plasmon-enhanced spectroscopy to biology, chemistry, physics, materials science and medicine. It contains an introduction to plasmon-induced hot-electron dynamics and chemical effects on surface-enhanced Raman scattering (SERS), followed by eight chapters on, for example, the near-field interaction between a single molecule and an electromagnetic field at a 'hotspot' generated by a plasmon resonance, three-dimensional SERS imaging, biofunctional SERS-active nanoparticles for future clinical diagnostics and therapeutics, and surface-enhanced Raman spectroscopy for the characterization of semiconductor nanostructure surfaces.



### Atoms, Molecules and Photons

By Wolfgang Demtröder

SPRINGER: 2018. 583PP. £88.00.

This book provides a unique joint introduction to atomic, molecular and quantum physics with numerous examples of applications. It details the development of the model of atoms and molecules over the last two centuries both by the many experimental discoveries and the introduction of quantum physics to the adequate description of microparticles. The wave model of particles is explained using a number of examples and the limits of the classical description are introduced. Also included is a chapter on the interaction of electromagnetic radiation with atoms and molecules, and its potential for spectroscopy. In particular, lasers as modern spectroscopic tools are discussed extensively. This completely revised third edition comes with new sections on ultrashort lasers, free-electron sources, cooling and trapping of atoms, quantum optics and quantum information.

Published online: 29 August 2018

<https://doi.org/10.1038/s41566-018-0243-z>