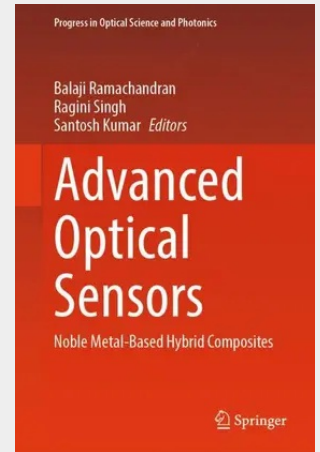


Advanced Optical Sensors

Noble Metal-Based Hybrid Composites

This book highlights the development and applications of hybrid materials that combine noble metals like gold, silver, platinum, and palladium with other components such as polymers, carbon-based materials, metal oxides, 2D materials, MOF's, or mixed metal oxides. These composites have emerged as cutting-edge materials in various fields due to their unique electrical, optical, and catalytic properties. This book further explores their intensive use in various sensor technology, including FET, upconversion, fluorescent, SPR and SERS sensors, due to their high sensitivity and selectivity. Additionally, it addresses their crucial role in self-powered TENG/PENG-based optical sensors and solar cells, where their efficiency in electron transfer and catalytic activity is boosted. With an emphasis on material synthesis, characterization techniques, and performance analysis, this book provides insights for researchers, engineers, and professionals looking to harness the potential of noble metal-based composites for advanced technological solutions.

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