

SEMINARIO

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Semiconductor nanomaterials and nanocomposites:

Synthesis and studies for gas sensing applications

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Nowadays, sensing devices have become a necessary part of our daily lives with a wide range of applications including healthcare and environmental safety. However, sensing technologies are still developing and have yet to reach their full potential in capabilities and usage. Hence, there is a drastically growing demand for nanomaterials with advanced functionalities for their application in modern sensing systems. Moreover, the integration of organic and inorganic semiconductors in hybrid structures considering the synergetic effect may ensure the enhanced characteristics of sensing devices. In this regard, the development of synthesis methods with a particular understanding and control of the composition, morphology, and structure of nanomaterials is important for the fabrication of high-performance sensing devices. Herein, different strategies for the preparation of nanostructures and nanocomposites including their compositional, morphological, and structural features will be presented. Furthermore, the studies of their gas sensing properties will be reported considering the achievements and challenges.