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Functional metal-oxide nanostructured materials, synthesis characterization and their applications in sensors and energy harvesting

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The presentation provides insight into a broad spectrum of the state-of-the-art research activities and development that focuses on the functional metal-oxide nanostructured (MOXN) systems. This includes diverse synthetic methods that lead to form these nanostructures, heterostructure formations, their plausible synthetic mechanisms and detailed characterization. A wide range of remarkable physicochemical characteristics will be discussed, covering a number of nanostructured metal-oxides, such as ZnO, In2O3, SnO2, and TiO2, etc. Current efforts on MOXN gas sensors will be discussed. MOXN based sensors, their fabrication and current status will be the primary focus of this presentation. Also at the end, some additional efforts for energy harvesting i.e., hydrogen production will be discussed.

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