



Functional oxide nanostructures: Growth, engineering and applications

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Nanostructures science and technology | Transparent conducting oxides (TCO's) have drawn great attention owing to their high electrical conductivity (10,000 S/cm) and high transparency (80-90%) in the visible region. This combination of properties makes them suitable for a number of applications such as solar cells, LCD display, OPV devices and even transparent electronics. The TCO nanostructures even showed better transparent contact than TCO thin film. High surface-to-volume ratio of nanostructures have demonstrated high sensitivity towards various target gases like NH₃, CO, H₂ and H₂S and for NO₂, which is one of the most dangerous air pollutants that causes acid rain and holes in ozone layer. To realize these applications, a basic understanding of the growth mechanism of nanostructures is a key requirement. Here, the main focus is given for tunable growth of indium oxide nanostructures and their applications. The indium metal filled indium oxide nanotube based nanorocket and indium mass transport in indium oxide nanotubes is demonstrated with the help of high-resolution transmission electron microscopy. | Format: Paperback | Language/Sprache: english | 236 pp.



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