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Spectroscopic Properties of Zinc Oxide Nanostructures Grown by Chemical Vapor Deposition[1] DAVID WILBERT, The University of Alabama, GANG SHEN, BABATUNDE AJILORE, MATTHEW YORK, WILLIAM BAUGHMAN, MICHAEL MURPHY, PATRICK KUNG, SEONGSIN M. KIM — Zinc oxide (ZnO), with its large bandgap energy of 3.37 eV and exciton binding energy, is a promising semiconductor material for a number of optoelectronic devices and applications ranging from solid-state lighting to photovoltaics, and can potentially serve as a solid matrix for nanoscale sensors. Nanostructures of ZnO have recently attracted a lot of interest because of their good crystalline quality and unique optical characteristics. Here, we focus on the study physical properties of ZnO nanowires grown by chemical vapor deposition, including absorption, photoluminescence, Raman, and terahertz time-domain spectroscopy.

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