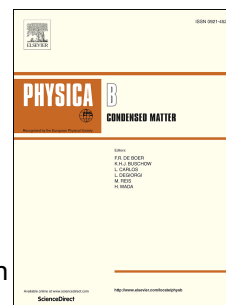


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Structural and optical properties of ZnO thin films prepared by RF sputtering at different thicknesses

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Abstract

Hexagonal nanocrystallites of ZnO in the form of thin films were prepared by radio frequency sputtering technique. X-ray diffraction analysis reveals two prominent diffraction planes (002) and (103) at diffraction angles around 34.3 and 62.8°, respectively. The crystallite size increases through (103) plane from 56.1 to 64.8 Å as film thickness changed from 31 nm up to 280 nm while crystallites growth through (002) increased from 124 to 136 Å as film thickness varies from 31 to 107 nm and dropped to 115.8 Å at thickness 280 nm. The particle shape changes from spherical to longitudinal form. The particle size is 25 nm for films of thickness below 107 nm and increases at higher thicknesses (134

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