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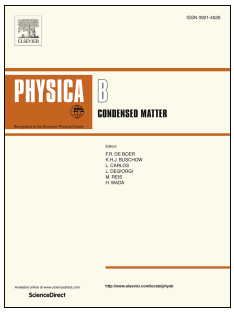

Structural and optical properties of ZnO thin films prepared by RF sputtering at different thicknesses

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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**