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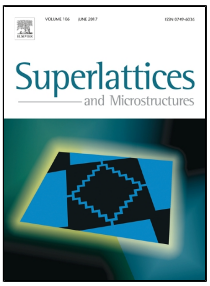

Effects of annealing temperature on the electrical characteristics of Li–N co-doped polycrystalline ZnO thin film transistors

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Highlights:

1: Li–N co-doped ZnO TFTs were fabricated by radio frequency magnetron sputtering.

2: The microstructure and morphology of the ZnO:(Li,N) films are displayed by X-ray diffraction and scanning electron microscopy.

3: The mechanism on the electrical characteristics transition induced by the annealing temperature is discussed.

4: With an optimized value of annealing temperature, a remarkable properties can be obtained: a μ_{SAT} of 33.6 cm^2/V s, a V_{TH} of -6 V and a large I_{ON}/I_{OFF} of 1.1×10^8.