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Photoluminescence of arsenic-doped zinc oxide thin films[1] J. RYAN PETERSON, MICAH SHELLEY, JOHN S. COLTON, GARY M. RENLUND, Brigham Young Univ - Provo — Zinc oxide is a very promising material for ultraviolet optoelectronics due to its high band gap of 3.4 eV. However, producing stable p-type zinc oxide has proven elusive for many years. We have successfully grown p-type arsenic-doped zinc oxide thin films using RF magnetron sputtering. We report photoluminescence spectra of arsenic-doped zinc oxide thin films in comparison with undoped zinc oxide crystals, measured with a 266nm femtosecond laser. The presence of arsenic doping is confirmed by shifts in the characteristic emission energies.

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