

## Characterization of CuO thin films for gas sensing applications

Nanostructural cupric oxide (CuO) films were prepared on Si and glass substrate by pulsed laser deposition technique (PLD) using laser Nd: YAG, using different laser pulses energies from 200 to 600 mJ. The X-ray diffraction pattern (XRD) of the films showed a polycrystalline structure with a monoclinic symmetry and preferred orientation toward (111) plane with nano structure. The crystallite size was increasing with increasing of laser pulse energy. Optical properties was characterized by using UV-vis spectrometer in the wave lengthrange (200-1100) nm at room temperature. The results showed that the transmission spectrum decreases with the laser pulses energy increase. Sensitivity of NO<sub>2</sub> gas at different operating temperatures,(50 C, 100 C, 150 C and 200 C) was calculated.