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Gas sensing properties of annealed and unannealed CoWO4 for air quality monitoring

The cobalt tungstate (CoWO4) nanostructures were prepared using the hydrothermal method. Nanostructures were annealed to compare the structural, optical and gas sensing properties of annealed and unannealed CoWO4. The UV-VIS spectroscopy, x-ray diffraction (XRD), scanning electron micro-scope (SEM) and energy dispersive x-ray spectroscopy (EDS) were used to examine the samples opti-cal, structural, morphological and composition properties respectively. The samples showed different XRD phases, where unannealed was hexagonal and annealed sample was monoclinic in structure. Dif-ferent SEM morphologies and optical band gaps of nanostructures were observed. The samples were further tested for their gas sensing properties and the unannealed CoWO4 showed the promising gas sensing performance towards NH3.

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