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**Strong green emission from ZnO-MgO nanocomposite and its origin** RAMACHANDRA REDDY A, SOWRI BABU K, MALLIKA AN, VENU-GOPAL REDDY K, National Institute of Technology Warangal, Warangal, AP, India — ZnO-MgO nanocomposite was prepared through a simple sol-gel method. The effect of high thermal annealing on photoluminescence of ZnO-MgO nanocomposite was studied. PL of ZnO showed only a sharp and intense UV emission positioned at 396 nm when annealed at 600 °C. ZnO-MgO nanocomposite also exhibited same emission peak with enhanced intensity at the same temperature i.e. at 600 °C. But, as the temperature increased from 600 °C to 900 °C an intense green emission positioned at 503 nm was observed with monotonous increase in its intensity. But further increase in temperature to 1000 °C decreases the intensity of green emission. XRD results demonstrated that strain increased with increase of temperature till 900 °C and decreased at 1000 °C. Moreover, intensity of the diffraction peak corresponding to MgO phase was decreased gradually with temperature. It was also found that intensity of green emission depended on concentration of MgO in the sample. By combining the XRD and PL results, it can be concluded that the huge enhancement in the green PL intensity is due to the increase in oxygen vacancies due to the formation of highly dislocated region at the interface of ZnO and MgO due to the large lattice mismatch between them.

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