Abstract Submitted
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Synthesis, characterization and optical properties of magnesium hydroxide micro-/nanostructures[1] LATHA KUMARI, WENZHI LI, Florida International University, CHARLES H. VANNOY, ROGER M. LEBLANC, University of Miami, DEZHI WANG, Boston College, DEPARTMENT OF PHYSICS, FLORIDA INTERNATIONAL UNIVERSITY, MIAMI, FL 33199, USA TEAM, DEPARTMENT OF CHEMISTRY, UNIVERSITY OF MIAMI, CORAL GABLES, FL 33124, USA COLLABORATION, DEPARTMENT OF PHYSICS, BOSTON COLLEGE, CHESTNUT HILL, MA 02467, USA COLLABORATION — Magnesium hydroxide ($Mg(OH)_2$) crystals of various shapes and sizes (micron to nano) were synthesized by single step hydrothermal route at different reaction conditions. The as-prepared hexagonal ($Mg(OH)_2$) particles were converted to cubic MgO by calcination at 450^oC. The $Mg(OH)_2$ and MgO nanostructures showed optical band gaps of 5.7 and 3.43 eV, respectively. Broad band photoluminescence emission spectra were observed in the vicinity of UV and visible region. $Mg(OH)_2$ and MgO nanostructures with wide optical band gap and short-wavelength luminescence emission can be used as a luminescent material for photonic applications.

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