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| Title | Structural, Magnetic and Optical Properties of Lanthanum Ferrite Nanoparticles with Application Perspective |
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| Abstract: The lanthanum ferrite (LaFeO3) nanoparticles were prepared by auto-combustion method. The structural, optical and magnetic properties of lanthanum ferrite (LaFeO3) nanoparticles have been demonstrated with application perspectives. The growth of single phase nanocrystalline lanthanum ferrite was confirmed by X-ray diffraction (XRD) pattern. Crystallite size and strain of the sample were obtained from Williamson-Hall equation carried out by XRD analysis, surface morphology was analyzed by FESEM, the average particle size was calculated by both FESEM and TEM, optical measurements were performed by UV-Vis spectroscopy, microstructural properties were investigated by micro-Raman spectroscopy and magnetizations of different temperature were observed from M–H curves measured by SQUID magnetometer. A spontaneous exchange bias effect has been observed in the sample. We also found that the sample exhibits the low energy band gap which can be a good candidate for photocatalytic activities. |  |
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