

Characterization of Mo-doped NiTiO₃ materials synthesized by one-pot solvothermal method

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In this study, modifications of nickel titanate (NiTiO₃) by doping molybdenum (Mo) were successfully conducted through a facile one-pot solvothermal method. Due to inherently poor light absorption, we desire to enhance optical property of NiTiO₃ with Mo incorporation, based on the charge transfer the components. The Mo doping to NiTiO₃ materials changed not only their characteristics but also their performance under photons irradiation. The morphology of the prepared materials was deeply studied by FE-SEM and HR-TEM. Basic phase structures and their transformation were detected by XRD analysis and confirmed by Raman and FTIR spectra. DRS technique and PL spectra were applied in order to verify the optical nature and estimate band gap energy of Mo-NiTiO₃ materials.