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Synthesis and luminescence properties of pyrophosphate phosphors doped with rare earth

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With the advent of new technologies in the field of optics, the development of luminescent materials for phosphors used especially for lighting, display, viewing or marking, has become one of the areas that have an intense competition internationally. The judicious choice of the phosphors material as a couple entities: host lattice - active center previously requires a perfect knowledge of the structure of the material and its ability to accommodate one or more dopants. During the last decades, optical properties of rare earth in host matrices have been undertaken especially condensed phosphates matrices that optimize the optical performance of rare earth ions. Several interesting applications have been reported for condensed phosphate with $A^I M^{III} P_2 O_7$ formula (A = alkali; M = RE, transition metal). Besides laser applications, these materials can be used as optical fiber communication, ion conductors and VUV phosphors thanks to their chemical stability and structural diversity as reported by G.VITINS and N.KHAY. In our work, we report the results of synthesis and preliminary characterization of a silver diphosphate doped with La and Eu ions. The samples were prepared by conventional solid state reaction and analyzed by powder X-ray diffraction and infrared spectroscopy. The emission of rare earth in this lattice has been investigated at room temperature.

Biography

Wafa Hami started her PhD degree in 2013 in the field of Inorganic Materials Science especially in optical properties of condensed phosphates activated with rare earth. She completed her Master's in Materials Science with specialization in Industrial Inorganic Materials from Faculty of Science, Mohamed V University of Rabat- Morocco. Currently, she got a contract position and teaches part time while pursuing her research.

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