



Structural Characterization of Pure and Doped Tricalcium Phosphates prepared by Solid State Method

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Abstract:

Tri-calcium $\text{Ca}_3(\text{PO}_4)_2$ phosphate materials (TCP) show interesting biological and optical properties¹⁻² for its use in applications related with luminescence and biomaterials field³. The purpose of this study is to synthesize tricalcium phosphate powders with dual dopants of trivalent lanthanides ($\text{Ln} = \text{La}, \text{Pr}, \text{Nd}, \text{Eu}, \text{Gd}, \text{Dy}, \text{Tm}, \text{Yb}$) and divalents transition metals ($\text{M} = \text{Mn}, \text{Ni}$) by a conventional solid state reaction at high temperature with CaCO_3 , CaHPO_4 , Ln_2O_3 and metal oxides as precursors. structural modifications of doped elements into TCP structure were investigated. The so-obtained (Ln-TCP) and (M-TCP) powders were characterized using X-ray diffraction (XRD), Fourier Transform InfraRed (FTIR) and Raman spectroscopy. these compounds crystallized with whitlockite-like structure (space group $R\bar{3}c$) of $\text{Ca}_3(\text{PO}_4)_2$.

Biography:

Asmaa.El khouri has completed her PhD at the age of 27 years from Cadi Ayyad University of Morocco she is specialized in inorganic chemistry and materials science. She has published more than 5 papers in reputed journals.



Publication of speakers:

- W. Habraken, P. Habibovic, M. Epple, M. Bohner, Calcium phosphates in biomedical applications: materials for the future?, *Mater. Today* 19 (2016) 69-87.
- K. Madhukumar, H.K. Varma, M. Komath, T.S. Elias, V. Padmanabhan, M.K. Nair, Photoluminescence and thermoluminescence properties of tricalcium phosphate phosphors doped with dysprosium and europium, *Bull. Mater. Sci.* 30 (2007) 527-534.
- M. Barathi, A. Santhana Krishna Kumar, N. Rajesh, *Environmental Chemical Engineering*, 1325-1335, 1(2013).

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