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Nickel phosphate crystal material: Synthesis and characterization

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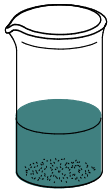
Introduction

Since the calcium phosphate nanoparticles utilization in biological, therapeutic and bio-medicinal fields such as treatment of cancers, caries inhibition, researchers decrease their researches by using other metals for the modification of phosphate materials. In this study, we prepared Nickel phosphate material and Nickel iron phosphate using hydrothermal rout, during preparation several conditions were used modifying the urea amount, acid volum. So, different structures were achieved. The material was characterized by SEM, EDX, UV-Vis and XRD

Synthesis of Ni/Fe/P crystal

2M K_2HPO_4

2M $Fe(NO_3)_2.9H_2O$



2M $Ni(NO_3)_2.3H_2O$

2-3 g d'urea

Téflon
72h
à 90-150°C

washing by irradiation ultrasons

Drying

Characterization

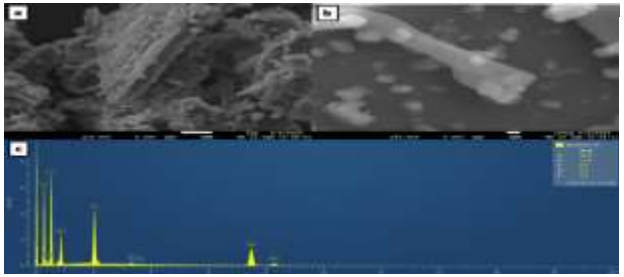


Fig. 1. SEM AND EDX analysis of NiP catalyst

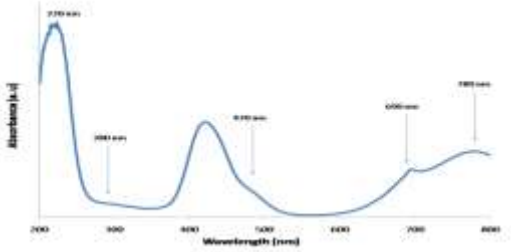


Fig. 2. UV-Vis analysis of NiP catalyst

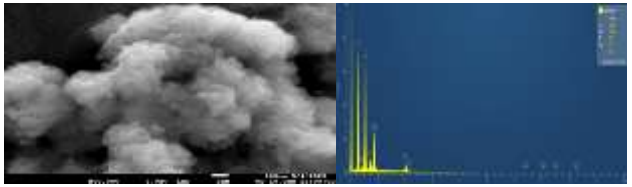


Fig. 4. SEM AND EDX analysis of modified NiP catalyst

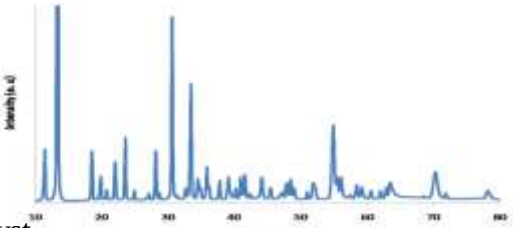


Fig. 3. XRD patterns of NiP catalyst