

Synthesis, characterization, and application of Iron copper

phosphate nanoparticles Berrichi Amina^{1,2}, Bachir Redouane¹

¹Laboratory of Catalysis and Synthesis in Organic Chemistry, Faculty of Science and technology, University of Tlemcen BP 119, 13000, Algeria

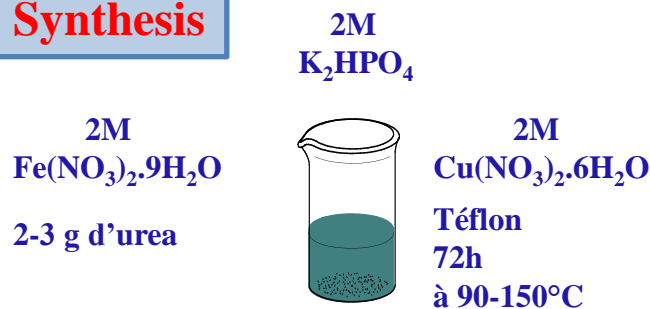
²University of Ain Temouchent, BP 284, 46000, Ain Temouchent, Algeria

Corresponding author: berrichi.amina@yahoo.fr

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 copper iron phosphate material using hydrothermal route, during preparation several conditions were used modifying the urea amount. So, different structures were achieved. The material was characterized by SEM, and IR analysis. The catalyst was used in the synthesis of pyrroles

Synthesis



washing by irradiation ultrasons

Drying

Characterization

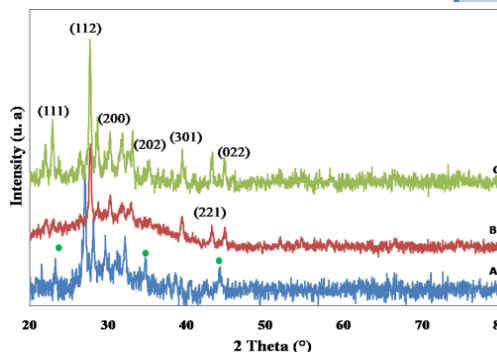


Fig.2. XRD analysis

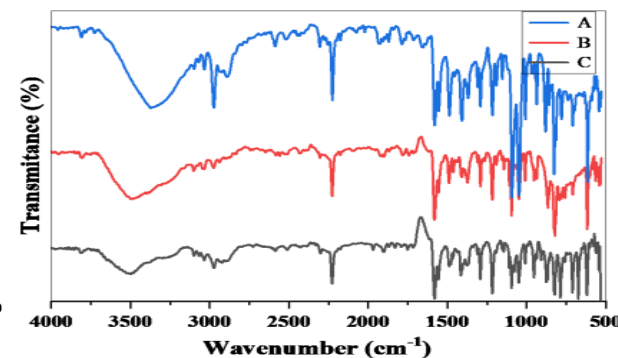
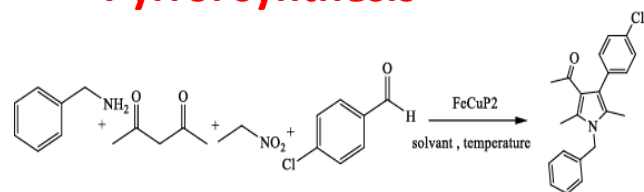


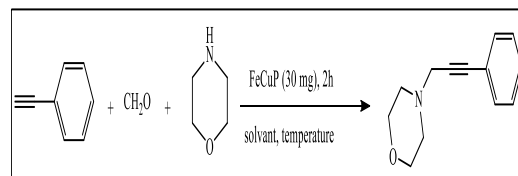
Fig.3. FTIR analysis

Pyrrol synthesis



benzylamine (1.5 mmol), nitroéthane (1 ml),
4-chlorobenzaldéhyde (1mmol) ; acetyléacetone
(1 mmol), catalyst (50 mg), 5h

propargylamine synthesis



Reaction condition: phenylacetylene
(2.2 mmol), aldehyde (2mmol), amine (2.2 mmol), CH_3CN (3 mL), FeCuP (30 mg), 80 °C, 2 h

Catalyst	Yield %
FeCuP1	48
FeCuP2	98
FeCuP3	36