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## Synthesis and characterization of JBW structure and its thermal transformation

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### Abstract

In this paper, JBW zeolite prepared from Egyptian kaolin was investigated by means of XRD, IR, SEM, EDX and ion exchange of some heavy metals. Adsorption isotherms were used to investigate the structure and properties of the prepared zeolite. XRD analysis showed that the JBW was a pure crystalline phase with orthorhombic crystal symmetry. Thermal treatment showed that the JBW transformed into the It-Cam phase at 1000 degrees C through an intermediate crystalline aluminosilicate phase. SEM images showed that the JBW crystallised in a cylindrical shape. However, spherical agglomerates were observed at lower magnifications. The ion exchange isotherms with Cu<sup>2+</sup>, Ni<sup>2+</sup> and Co<sup>2+</sup> were found to follow a Freundlich isotherm. In addition, it shows higher affinity towards Cu<sup>2+</sup> than other ions. (C) 2012 Elsevier Inc. All rights reserved.

### Keywords

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