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Preparation and characterization of Ti and V modified analcime from local kaolin

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ABSTRACT

A synthetic analcime was modified by incorporation of Ti or V. Egyptian kaolin was selected as a starting material. The modified zeolite was tested for the removal of Cu^{2+} , Ni^{2+} and Pb^{2+} . XRD (X-ray diffraction), SEM (scanning electron microscope), EDX (energy dispersive X-ray), ESR (electron spin resonance), TGA (thermal gravimetric analysis) and DSC (differential scanning calorimetry) were used to characterize the modified analcime. The modified analcime showed a good removal of ions. The preference towards various heavy metal ions under investigation was dependent on the amount of incorporated Ti or V. The size of the analcime crystal decreased as the amount of Ti or V increased.

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