

Critical evaluation of the revised akdalaite model for ferrihydrite—Reply

ALAIN MANCEAU*

ISTerre-Maison des Géosciences, CNRS and Université J. Fourier, BP 53, 38041 Grenoble, France

ABSTRACT

The XRD pattern of hydromaghemite, previously interpreted as a mixture of hydroxylated maghemite, ferrihydrite, and hematite (Barrón et al. 2003; Liu 2008), has been reinterpreted as being from a new form of ferrihydrite called “ferrimagnetic ferrihydrite” (ferrifh, Michel et al. 2010; Barrón et al. 2012). Although ferrihydrite *sensu stricto* and ferrifh have distinct XRD patterns, their profiles have been fit with the same akdalaite-type model using atomic pair distribution (PDF) analysis (Michel et al. 2007, 2010). This ambivalence shows that the crystal structure problem is ill-conditioned, as often the case for the study of nanostructured materials by PDF (Billinge and Levin 2007).

Keywords: Ferrihydrite, hydromaghemite, PDF, atomic pair distribution, akdalaite model