

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Mössbauer evaluation of aerogel-prepared Fe₂(MoO₄)₃ H.H. HAMDEH, J.C. HO, Wichita State Univ., Wichita, KS, R.J. WILLEY, Northeastern Univ., Boston, MA — Fe-Mo-O binary oxides are among the catalysts for selective oxidation of, e.g., hydrogen sulfide and hydrocarbons. Their catalytic activities are composition- and structure-dependent. In this work Fe₂(MoO₄)₃ was prepared first as aerogel in an autoclave, from starting materials of ferric acetylacetonate and dioxomolybdenum, then oxidized and annealed. Mössbauer measurements were carried out to complement other techniques for structural and magnetic analysis. The data can be well fitted to two subspectra in the ratio of approximately 2:1. The major component remains as a singlet from 300 K down to 25 K, while a well-defined sextet representing a magnetic ordering gradually developed below 200 K for the other. Its hyperfine field, as well as the isomer shift and quadrupole splitting values for both subspectra were obtained.

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Date submitted: 01 Dec 2004

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