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Mossbauer studies of mixed Fe-Mo oxides H.H. HAMDEH, H. ALGHANEM, J.C. HO, Wichita State University, R.J. WILLEY, E. MARCHESE, W. JABLONSKI, Northeastern University — Mossbauer spectroscopy was carried out in conjunction with a catalytic study on mixed Fe-Mo oxides, among which $Fe_2(MoO_4)_3$ has been widely used in selective oxidation of certain hydrocarbons. With the specific activity being sensitive to the catalyst particle size and morphology, an aerogel process was employed to prepare the samples covering Fe/Mo ratios from 1/2 to 2/1. Each set of Mossbauer data were well fitted to reflect one Fe3+ and two or three non-equivalent Fe2+ sites. Their isomer shift, quadruple splitting and molar fraction are analyzed in terms of temperature and Fe/Mo-ratio dependence. The Fe-rich samples exhibit magnetic ordering at low temperatures.

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