

2009, Volume 48

Maxim L. Kuznetsov and Armando J. L. Pombeiro*: Radical Formation in the $[\text{MeReO}_3]$ -Catalyzed Aqueous Peroxidative Oxidation of Alkanes: A Theoretical Mechanistic Study

Pages 307–318. In this paper, we presented DFT calculations of plausible mechanisms of the formation of radicals (hydroperoxyl and hydroxyl derived from H_2O_2 , alkyl derived from the alkane, and metal complex radicals) in the system $[\text{MeReO}_3](\text{MTO})/\text{H}_2\text{O}_2/\text{H}_2\text{O}-\text{CH}_3\text{CN}$ used for the catalytic oxidations of alkanes. Discussing the state of the art in this field, we overlooked a few papers by Crucianelli et al.,^{1–4} which describe experimental studies of alkane oxidations catalyzed by MTO and polymer-supported MTO in the presence of H_2O_2 . In one of them,¹ the authors observed, by EPR, the formation of a methyl radical by homolysis of the $\text{Re}-\text{CH}_3$ bond upon encapsulation of MTO into polystyrene in a heterogeneous system.

IC9000158

10.1021/ic9000158

Published on Web 01/20/2009

-
- (1) Bianchini, G.; Crucianelli, M.; Canevali, C.; Crestini, C.; Morazzoni, F.; Saladino, R. *Tetrahedron* **2006**, 62, 12326.
 - (2) Bianchini, G.; Crucianelli, M.; Crestini, C.; Saladino, R. *Top. Catal.* **2006**, 40, 221.
 - (3) Bianchini, G.; Crucianelli, M.; De Angelis, F.; Neri, V.; Saladino, R. *Tetrahedron Lett.* **2005**, 46, 2427.
 - (4) Bianchini, G.; Crucianelli, M.; De Angelis, F.; Neri, V.; Saladino, R. *Tetrahedron Lett.* **2004**, 45, 2351.