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# Synthesis of Ruthenium-containing Polyoxomolybdate and Its Catalytic Features for Liquid-phase Oxidation Using Peroxo Compounds

Tomohiro Oonaka[1)], Keiji Hashimoto[1)], Hiroshi Kominami[1)], Yoshio Matsubara[1)] and Yoshiya Kera[1)]

1) Interdisciplinary Graduate School of Science and Technology, Kinki University

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Needle-like crystals of ruthenium-molybdenum polyoxometalate having a composition of $Na_4(NH_4)[RuMo_7O_{25}]\cdot 8H_2O$ (RuMo7) were synthesized with high reproducibility. With cetylpyridinium cation, RuMo7 was modified and its catalytic features were evaluated using oxidation of cyclohexanol to cyclohexanone with *t* -butyl hydroperoxide or hydrogenperoxide ($H_2O_2$). The results indicated that RuMo7 exhibits high rate for the former reaction and that RuMo7 has high potential for $H_2O_2$ decomposition.

**Keywords:** Ruthenium molybdenum polyoxometalate, Oxidation catalyst, Cyclohexanol, *t*-Butyl hydroperoxide, Hydrogen peroxide

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