



第149回触媒化学研究センター談話会

**演 題 : Development of Ruthenium based Catalytic
Materials for Environmental Applications**

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要 旨 : Ruthenium shows excellent catalytic properties for several reactions of commercial and environmental importance. However, ruthenium is prone to the formation of its volatile oxides, which eventually restrict its catalytic applications at high temperature in oxidative atmosphere. Ruthenium can be thermally stabilized by incorporation in perovskite type structure. Perovskite type lanthanum ruthenate materials can be synthesized using various improved methods, and can be used even for high temperature applications. Such materials have been synthesized using various techniques, some of them used for the first time for lanthanum ruthenate synthesis. The improved synthesis of lanthanum ruthenates resulted in improved physical and catalytic properties and show good catalytic activity towards certain reactions of environmental importance. Some lanthanum ruthenates show high thermal stability with catalytic activity for oxidation reactions and may be used even for combustion reactions. The high thermal stability and catalytic activity of these ruthenium based catalytic materials depends to some extent on oxidation state of ruthenium and its incorporation in perovskite type structure. Ruthenium-titanium type mixed oxides also represent materials with interesting properties. They show solid solution behaviour until certain molar extent.

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