**Abstract:**

**A novel method for the preparation of La2O3-supported ruthenium catalyst has been reported. The precursor and calcined catalyst were characterized by XRD, TGA/DSC, BET, XRF and SEM. The XRD pattern of both precursor and calcined catalyst showed crystalline phases. The X-ray diffraction data for calcined catalyst showed the existence of La2O3 and Ru2O3 phases.**

**Differential scanning calorimetery analysis was used to determine the enthalpies of changes in physical state. The DSC pattern of this sample exhibits a peak between 90-120 °C attributed to the removal of the physically adsorbed water and two endothermic peaks around 360-410°C and 430-450°C, respectively, that are due to the various endothermic transition, i.e., the losses of chemically bound water and the decomposition of the precursor complex. Characterization of both precursor and calcined catalyst was carried out also using scanning electron microscopy (SEM). All the electron micrographs were obtained from powder specimens of these materials. SEM observations have shown differences in morphology of both precursor and calcined catalyst. The BET specific surface area measurements for both precursor and calcined catalyst were carried out and the calcined catalyst showed a higher surface area (197.55 m2 g-1) than its precursor (116.02 m2 g-1). The XRF data of both precursor and calcined catalyst showed the presence of La, and Ru which confirms that this material is comprised oxidic phases of La, and Ru oxides. This is supported by the X-ray diffraction data. This new method could also be useful to preparation other Re, Ru, and Os catalysts.**