

LaMnO₃ AS METHANE COMBUSTION CATALYST: THE EFFECT OF PALLADIUM AND TIN ADDITION

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Work-In-Progress Abstract

Perovskite type catalysts, LaMnO₃, were synthesized by citrate and coprecipitation methods. Some of these materials were supported on γ -alumina or wet impregnated with Pd and / or Sn at the concentration of 1% by mass. The catalysts were evaluated in the total combustion reaction of methane, and their activity was measured by thermoprogrammed surface reaction (TPSR). As a standard of comparison, a reference sample of PdO / γ -Al₂O₃ was also synthesized. The samples were characterized by thermogravimetric analysis (ATG), X-ray diffraction (XRD) and had their surface area measured by BET. The palladium-containing samples were further analyzed in the programmed temperature oxidation reaction (TPO) in order to determine the stability of the PdO phases present in these materials. All the samples were active in the combustion of methane. The catalysts obtained from the citrate route being more active than the catalysts obtained from coprecipitation. The addition of palladium even at low concentration improved catalytic activity, unlike tin, which resulted in a reduction in the conversion of final methane to these materials.