

heterogeneous catalysis, catalysts

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LaAl_{1-x}Cr_xO₃ Perovskite-Type Solid Solutions: Structural, Electronic, Magnetic Properties and Catalytic Activity Towards CO Oxidation.

— The title compounds are prepared from concentrated aqueous solutions of metal nitrates and citric acid followed by calcination at several temperatures up to 1073 K. The samples are characterized by XRD, diffuse reflectance spectroscopy, EPR, and magnetic susceptibility measurements. At 773 K all samples are amorphous, at 923 K the perovskite structure starts to form in addition to LaCrO₄ and La₂CrO₆, whereas at 1072 K all samples are single phase perovskite-type solid solutions. All the Cr-containing perovskites show higher catalytic activity for CO oxidation than LaAlO₃. The activity trend and the variation of the activation energy with increasing Cr content suggest a change in the active site from mononuclear to polynuclear. — (CORDISCHI, DANTE; DE ROSSI, SERGIO; FATICANTI, MARCO; MINELLI, GIULIANO; PORTA, PIERO; Phys. Chem. Chem. Phys. 4 (2002) 13, 3085-3090; Dip. Chim., Univ. La Sapienza, CNR, I-00185 Roma, Italy; EN)