

# Co-doped LaAlO<sub>3</sub> perovskite oxide for NO<sub>x</sub>-assisted soot oxidation

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## Description

In the framework of nowadays challenges in the automotive catalysis, directed to the mitigation of pollution caused by the emissions of internal combustion engines, a series of LaAl<sub>1-x</sub>Co<sub>x</sub>O<sub>3</sub> perovskites were investigated with the purpose of enhancing the oxidation of soot in the presence of NO<sub>x</sub>. Perovskite oxides LaAl<sub>1-x</sub>Co<sub>x</sub>O<sub>3</sub> (x = 0; 0.25; 0.5; 0.75 and 1) were synthesized by a sol-gel route and characterized by different methods: X-Ray diffraction (XRD), H<sub>2</sub>-temperature programmed reduction (H<sub>2</sub>-TPR), N<sub>2</sub>-sorption, O<sub>2</sub>/NO<sub>x</sub>-temperature programmed desorption (TPD) and X-ray photoelectron spectroscopy (XPS). The perovskite oxides were tested as catalysts for NO oxidation in isothermal mode and for NO<sub>x</sub>-assisted soot oxidation in temperature programmed reaction. Structural results reveal that Co is well incorporated in the perovskite structure expanding the unit cell, and doping Co may result in the ...