

## Synthesis of Pd-containing catalysts promoted by NiO for reduction of NO with CO

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Promotion of catalysts, containing noble metals with oxides of Ni, Cu, Zn, Mn and other metals leads to obtaining a new type of highly active and stable catalysts for purification of waste gases.

The aim of present investigation is synthesis of catalysts with minimal content of Pd in the presence of promoter NiO using modified alumina supports. This way high activity in reduction of NO and good mechanical strength and thermo stability of the contact is reached, which is necessary for application of the catalyst in neutralizers in automotive transport [1-3].

The synthesized supports have following content in wt. %: corundum 98÷20; aluminium hydroxide up to 62; bentonite – 15, MgO – 2. The supported active phases are Pd – 0.3-2 % and NiO – 12% in all samples. The final temperature of calcination of the contacts is 400°C for 3 h. The main physicochemical parameters of the catalysts after formation are in the range: specific surface area –  $S = 56 \div 2 \text{ m}^2/\text{g}$ , porosity  $\Theta \sim 40\%$  and mechanical strength  $\sigma$  up to 500 kg/cm<sup>2</sup>. Highest catalytic activity toward reduction of NO with CO shows catalyst with active phase containing 0.3% Pd and 12% NiO on support containing 62% aluminium hydroxide as precursor (Fig. 1).

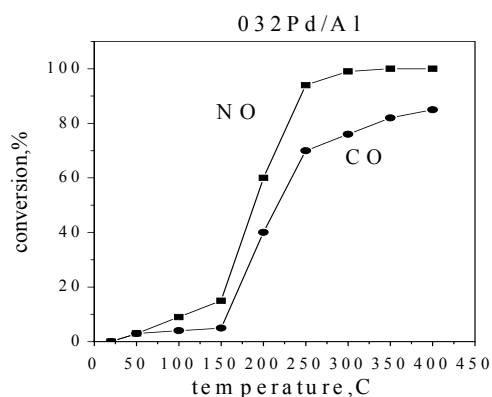


Fig 1. Catalytic activity tests performed at  $RO = 1 \pm 0.05$  and space velocity,  $W = 26\ 000 \text{ h}^{-1}$

### Referencees

1. J.C. Chen, F.Y. Chang, M.Y. Wey, *Catal. Commun.* 9 (2008) 1106.
2. Y. Wang, A. Zhu, Ch. Shi, *Appl. Catalysis B* 81 (2008) 141.
3. D. Mantri, P. Aghalayam, *Catal. Today* 119 (2007) 88.