

## 1.151 The vehicles emissions reduce by catalytic oxidation of carbon monoxide on nano-catalyst ..

Early Career Scientist

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Abstract:

The kinetics of oxidation of carbon-monoxide on the nano-catalyst surface in different conditions has been investigated. The laboratory experiments has done in quartz reactor is installed cycle system ( $d=10$  mm,  $h=1$  m) where is controlled speed of air stream, the temperature of surface of catalyze and change of concentration of carbon monooxide and carbon dioxide in air mixture. Experiments carried out by preliminarily prepared model mixtures of CO with air. Experimental plants allow to change temperature on surface of nano-catalyzer, flow rate of mixture air-CO and concentrations of gases CO and CO<sub>2</sub> in the closed system. The investigation has been conducted in flow rate 38 l/min and temperature range of  $T=70-350^{\circ}\text{C}$ , the dependence of conversion degree of carbon monoxide to carbon dioxide on experimental parameters has been controlled. It is determined that rate of conversion process increases by 1.30-1.32 times as temperature increases on the surface of catalyzer. The conversion of carbon-monooxide to carbon dioxide increase by decreasing of flow rates. The carbon monoxide decreased up to % under optimal condition, that has a great importance to prevention of air pollution by transport sector.

The environmental impact assessment of transport sector to the air basin of Azerbaijan has been assessed and decreasing of impact by application of nano-catalyst purification technology are estimated.