Au-CuO + Pt Catalyst for Low Temperature CO Oxidation

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Technology Summary
As engines become more efficient and exhaust temperature decrease the typical Pt or Pd catalyst found in catalytic converters become more inefficient. Silica supported Au@CuO core@shell nanoparticles, which were formed through the oxidation of AuCu alloy nanoparticles, have shown to be highly active for the oxidation of CO into CO2 at low temperatures. Unfortunately, introducing hydrocarbons or NO into the gas stream severally inhibits the low temperature catalytic oxidation of CO over the Au@CuO catalyst. Creating a physical mixture of a Au@CuO catalyst with a Pt catalyst improves the CO oxidation activity in the presence of hydrocarbons and NO. More importantly, the conversion of NO to NO2 was nearly doubled.

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