



Emissions Reduction using Catalyst Converter

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Abstract: Toxic converter is a vehicle emissions control device that converts toxic pollutants in exhaust gas to less toxic pollutants by catalyzing a redox reaction (oxidation or reduction). Catalytic converters are used with internal combustion engines fueled by either petrol (gasoline) or diesel-including lean-burn engines. This application can also be applied to exhaust systems in automobiles. The catalyst used in the converter consists of mostly some metal such as platinum, palladium and rhodium. Platinum is used as a reduction catalyst and as an oxidation catalyst. Although platinum is a very active catalyst and widely used, it is very expensive and not suitable for all applications. Rhodium is used as a reduction catalyst, while palladium is used as an oxidation catalyst. In some cases, cerium, iron, manganese and nickel are also used. In the present work we replaced platinum with cerium just because of its high cost. Here ferric ammonium sulphate, ferrous ammonium sulfate and cerium are used as oxidizing agent and manganese dioxide and nickel oxide are used as reducing agents. By using these metallic powders the toxicity of the exhaust gases are reduced. Here we conducted tests on three vehicles of different cubic centimeters. And pollution tests are conducted at Road Transport Organization Srikakulam.

Key Words: Catalyst converter, toxic pollutants, nickel oxide, ammonium ceric nitrate, ferrous ammonium sulphate, manganese dioxide.

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