

After-treatment Applications to Remove Pollutant Emissions Arising from Vehicles

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Abstract: Many countries in the world suffer from air pollution from vehicles. To prevent these pollutants is one the most important endeavors of executives. Many policies, regulations and standards have been generated to control and limit the pollutant emissions from vehicles. This situation enforces the researchers and automobile manufacturers to develop new technologies to met desired emission values from vehicles. These technologies are divided into pre-treatment emission control technologies and after-treatment emission control technologies. Although remarkable reductions in pollutants emissions were obtained with the use pre-treatment emission control technologies such as electronic injection systems, exhaust gas recirculation (EGR), engine modifications , the desired emissions values determined by standards (Euro, Tier etc) could not be met. To meet desired emissions values is possible with the use aftertreatment technologies in vehicles. This paper aims to provide an insight to widespread aftertreatment emission control systems used in vehicles. Catalytic converters, oxidation catalysts, particulate filters and selective catalytic reduction (SCR) systems are scrutinized in this study. The performance of these systems, conversion efficiencies, diversities, troubles are discussed clearly.

Keywords: *Pollutant emissions, After-treatment control, Catalytic converters, SCR, Catalyst*
