**A study on advanced ceramics used in the catalytic converter of an IC engine in automobile emission control.**

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**ABSTRACT**

The geometrically progressing rate of vehicular traffic with a minor group, having a poor system of emission control, has adversely affected the environment driving to structuring a plethora of mechanisms and regulations to counter this environmental challenge. Catalytic converters are widely employed both metallic and ceramic in the reduction of exhaust emission. Owing to their unparalleled material properties and improved efficiency, ceramics are predominantly used as catalytic carriers and supports. Advanced Ceramic materials have made a dream come true of the yesteryears. The applications of these ceramic converters include identification, monitoring, and quantification of pollutants and their control. Most commonly used Catalytic carriers are inorganic oxide-based materials, silicate ceramics, non-oxide ceramics, etc. This paper reviews the development and successful application of ceramic catalytic converters for controlling emissions, and concludes that ceramic monolithic used as the catalysts support in a three-way catalytic converter consists of a closely packed array of small squares cells where when these cells are coated with ceramics allows high conversion efficiencies at high gaseous throughout, provides a high geometric surface area with lower pressure drop, excellent high temperature and thermal shock resistance. It includes materials with meso-sized pores due to its improved mass transfer properties and high surface areas which are prominent in certain gas-phase reactions. This paper finally concludes by justifying that the ceramics are imperial metals that meet a maximum of the properties such as strength, wear resistance, corrosion resistance, thermal stability, etc. and their successful attempts in emission control.

*Keywords: advanced ceramics, the catalytic converter, emission.*