

## **Study the effect of various wash-coated metal oxides over synthesized carbon nanofibers coated monolith substrates**

### **ABSTRACT**

In this research work, carbon nanofibers (CNFs) were synthesized on honeycomb monolith substrates using injection chemical vapor deposition (ICVD) technique. The effect of various wash-coated materials and catalyst promoter on the growth rate of CNFs on monolith substrates were examined. The characteristics of the synthesized CNFs-coated monolith composites were examined using Raman spectroscopy, Brunauer–Emmett–Teller (BET), thermogravimetric analysis (TGA), field emission scanning electron microscopy (FE-SEM), and Transmission electron microscopy (TEM) techniques. According to the textural characterization study, the specific surface area and pore volume of CNFs-coated monolith composites were significantly improved as compared to bare monolith which might be attributed to the growth of highly pure and aligned CNFs over monolith substrate. Besides that, the synthesized CNFs-coated monolith possessed extremely well thermal stability up to the temperature of 550 °C which was corresponded to the strong attachment of highly graphitized CNFs over monolith substrates.