

## **Monolith metal-oxide-supported catalysts: sorbent for environmental application**

### **ABSTRACT**

The emission of untreated environmental harmful gases such as sulfur and nitrogen oxide (SO<sub>x</sub> and NO<sub>x</sub>) emissions is considered old fashioned, since industries are compelled by governments and legislations to meet the minimum threshold before emitting such substances into the atmosphere. Numerous research has been done and is ongoing to come up with both cost-effective equipment and regenerable catalysts that are adsorbent—or with enhanced sorption capacity—and with safer disposal methods. This work presents the general idea of a monolith/catalyst for environmental application and the technicality for improving the surface area for fast and efficient adsorption–desorption reactions. The chemical reactions, adsorption kinetics, and other properties, including deactivation, regeneration, and the disposal of a catalyst in view of environmental application, are extensively discussed.

**Keyword:** Pollutants; Monolith; Catalyst; Kinetics; Regeneration; Adsorption