

Ceramic foam type $(\text{Fe,Cr})_2\text{O}_3$ catalyst for sulphuric acid decomposition in I-S process of hydrogen generation

Background: $(\text{Fe,Cr})_2\text{O}_3$ was identified as an efficient catalyst material for sulphuric acid decomposition. For use of this catalyst in reactor of IS process these are to be formed in suitable shape maintaining stable pore structure.

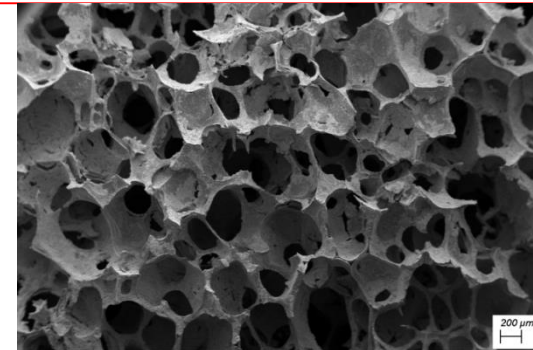
Objective: Process development for making ceramic foam type $(\text{Fe,Cr})_2\text{O}_3$ catalyst in 500 ml batch for sulphuric acid decomposition in I-S process of hydrogen generation.

Results:

- ❑ A process has been developed for making foam type $(\text{Fe,Cr})_2\text{O}_3$ catalyst based on impregnation chemistry and microstructural engineering.
- ❑ 500 ml of $(\text{Fe,Cr})_2\text{O}_3$ ceramic foam catalyst was synthesised and supplied to ChTD for use in reactor.
- ❑ The catalysts were found to have high yield and stability with long exposure times.



$(\text{Fe,Cr})_2\text{O}_3$ foam catalyst granules



SEM photomicrograph of iron oxide ceramic foam