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# One-pot synthesis of Cu-SAPO-34 catalyst using waste mother liquid and its application in the selective catalytic reduction of NO with $NH_3$

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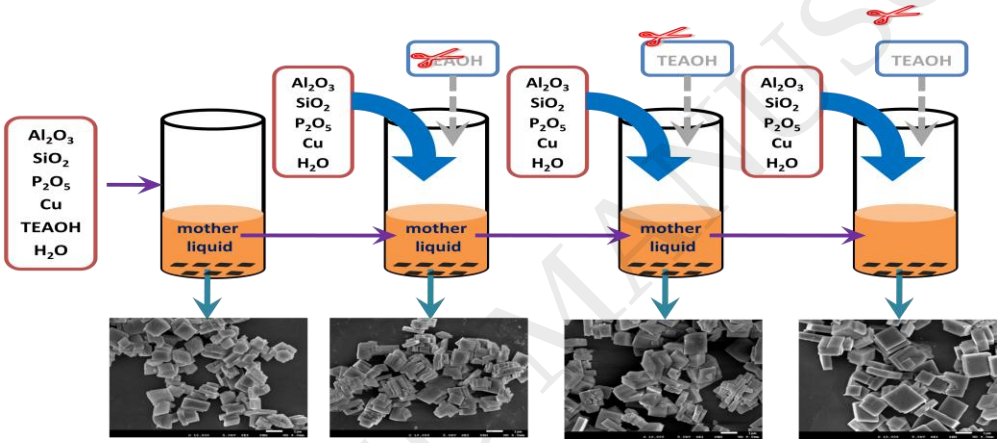
## Graphical Abstract




## Highlights

- Cu-SAPO-34 with Cu content at 1.1wt% was synthesized by one-pot method.
- Cu-SAPO-34 catalysts were synthesized by recycling of waste mother liquids.
- After three recycles, the synthesized Cu-SAPO-34 exhibited superior $NH_3$-SCR activity.

## Abstract

Cu-SAPO-34 catalysts with three different Cu contents (0.6wt%, 1.1wt% and 1.9wt%) were prepared via one-pot synthesis method. Cu-SAPO-34 with Cu content at 1.1wt% was found to be the best catalyst when considering both low temperature activity and high temperature stability. Then an economical and green way was attempted for the synthesis of Cu-SAPO-34 catalysts by