

### Study of coke behavior of HZSM-5 catalyst during methanol to propylene (MTP) process

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Coke deposition during methanol conversion to propylene over HZSM-5 has been studied in a fixed bed reactor at different reaction temperatures. The HZSM-5 catalysts with varying  $\text{SiO}_2/\text{Al}_2\text{O}_3$  ratio were synthesized and characterized by XRD, SEM,  $\text{N}_2$ -sorption and  $\text{NH}_3$ -TPD. The HZSM-5 catalyst for methanol conversion showed catalytic activity loss mainly due to coke deposition. The nature of coke was investigated by XRD,  $\text{N}_2$ -sorption, EA and UV-VIS, confirming that the degree of deactivation by coke increased with acidity and reaction temperature.