



Showcasing research from Professor Niket S. Kaisare's Laboratory, Department of Chemical Engineering & Professor Parasuraman Selvam's Laboratory, Department of Chemistry, Indian Institute of Technology Madras, Chennai, India.

Maximizing methanol selectivity over the microporous FeS-1 catalyst via aqueous-phase partial oxidation of methane with  $\text{H}_2\text{O}_2$

This study explores the partial oxidation of methane with  $\text{H}_2\text{O}_2$  using an iron silicalite catalyst, highlighting its superior methanol selectivity over comparable iron-based zeolites. Furthermore, in a progressive industrial hub, small-scale industries tap into stranded natural gas from remote locations for direct methane partial oxidation, enabling eco-friendly methanol production. A fleet of methanol-powered trucks emerges, promoting sustainable transportation. Driven by innovation, this refinery transforms emissions into a cleaner future, seamlessly integrating scientific advancements with industrial practices.

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