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Modified Iron Catalyst for Direct Synthesis of Light Olefin from Syngas

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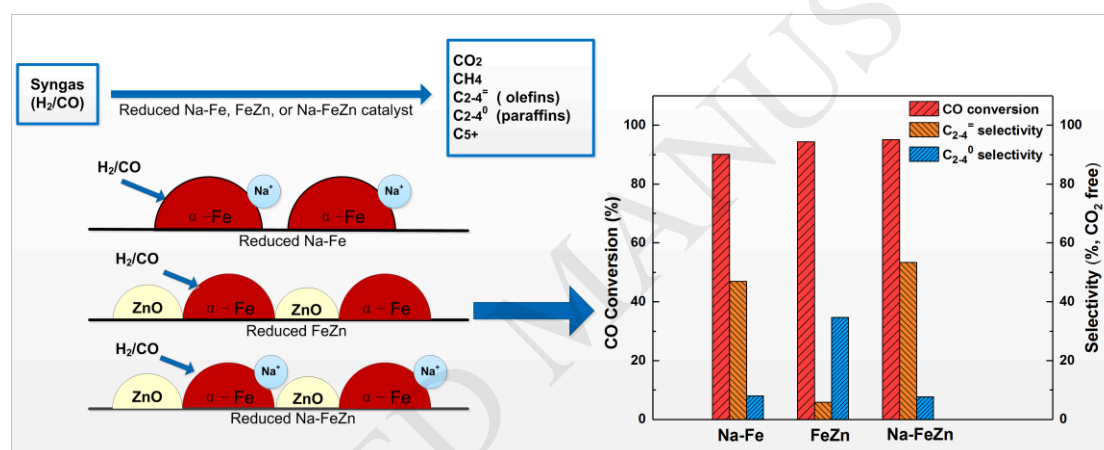
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Graphical Abstract:



Highlights:

- Catalyst for Selectively direct synthesis of light olefins from syngas
- Zinc oxide was structural promoter, and alkali metal was electronic promoter in modification of iron catalyst
- The synergistic effect of Na and Zn is a key factor to maximize the selectivity to light olefins in process from syngas to olefins
- The FeZn catalyst has a high activity and stability in the reaction of syngas to light olefins

Abstract

The modified iron catalysts for direct synthesis of light olefins from syngas were investigated. A series of catalysts were prepared by co-precipitation method and characterized by SEM, BET and X-ray diffraction methods. Catalytic performance of the catalysts was tested in a fixed-bed reactor. The experimental results showed that Zn-modified iron catalyst displayed a high selectivity for light olefins and one through CO conversion. Alkali metal modified catalytic performances as electronic promoter

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