A short review on bimetallic Co-based catalysts for carbon dioxide reforming of methane

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ABSTRACT

The development of catalysts that afford excellent catalytic performance along with high resistance toward coke accumulation is fundamental in carbon dioxide reforming of methane (CDRM). Apart from Ni-based catalysts, the Co-based catalysts gained significant attention in CDRM accredited to the Co's capability in improving catalytic stability and lowering the coke formation. However, the lower catalytic activities of Co-based catalysts when compared to Ni-based catalysts in reforming works are the real challenges that need to be solved. In this study, a short review of various approaches that have been implemented by researchers for improving the catalytic performance issues related to Co-based catalysts is presented. This paper also presents recent Co-bimetallic catalysts approached, covers the catalyst activity as well as issues related to catalyst deactivation when compared to Co monometallic catalysts. In addition, the outlook of the related bimetallic Co-based catalysts has been proposed to provide more critical information.

KEYWORDS

Bimetallic Co-based catalyst; Carbon dioxide reforming of methane; Monometallic Co-based catalyst; Syngas

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