

## 2D Boron Nitride Supported Nickel Catalyst for Dry Reforming of Methane

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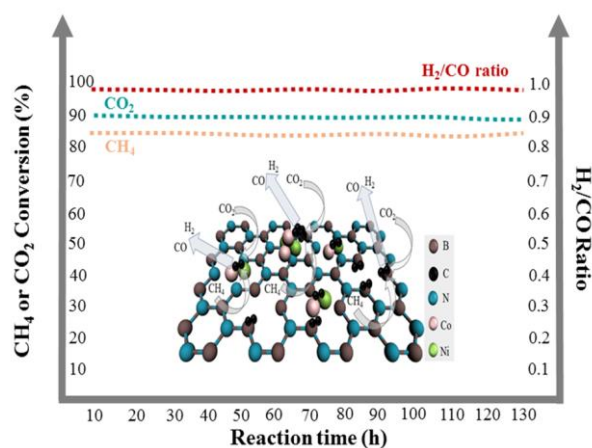
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2D materials such as boron nitride have been recently employed as promising nickel supports in dry reforming of methane owing to its high thermal tolerance and inertness. Exfoliation of boron nitride could both yield thin layered boron nitride nanosheet and generate defect sites which is beneficial for occupying metal active sites and result in enhancement of catalytic performance. Good interaction between metal and support leads to well dispersed nickel over 2D boron nitride which could not only enhance  $\text{CO}_2$  and  $\text{CH}_4$  conversion but also reduce carbon formation. Systematic catalyst characterization via physicochemical techniques and electron microscopes could provide strong evidence on this such interaction. *In situ* diffuse reflectance infrared spectroscopy as well as density-functional theory display insight information regarding dry reforming mechanism of methane over the 2D boron nitride supported nickel catalyst.

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Dry reforming of methane over nickel/boron nitride catalyst