

Study on A-site deficient doped perovskite as a catalyst for Dry reforming of Methane

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Dry reforming of methane (DRM) produces a mixed synthetic gas with carbon monoxide (CO) and hydrogen (H₂), which can use in the chemical industry. DRM is environmental process and provides valuable intermediate in chemical synthesis. Recently, research groups are focusing on the use of biogases, methane (CH₄) and carbon dioxide (CO₂) gas, which are greenhouse gases. However, there are some critical deactivation problems by the CO₂ reforming in biogases. Therefore, doped perovskite materials are in interest as DRM catalysts. The typical perovskite has an ABO₃ structure, which generally has thermal stability and doping flexibility. By tuning the stoic metric to A-site deficient perovskite, it can also create oxygen vacancies and promote oxygen mobilities. The perovskite catalyst can lead to great reforming efficiency with deactivation resistances as compared to other reference catalysts.