

Strontium Cobalt Oxide Perovskite for Methane Dry Reforming

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We have prepared SrCoO₃ perovskite employing a sol-gel citrate method and used as a catalyst for dry reforming of methane at the stoichiometric ratio and temperature of 1023 K. The catalyst was characterized by techniques such as N₂ physisorption, X-ray diffraction (XRD) and scanning electron microscopy (SEM). The textural properties of the as-synthesized catalyst show BET specific surface area of 14.40 m² g⁻¹ with an average pore diameter of 49.21 Å. The powder XRD pattern confirms the formation of perovskite phase that can be indexed in an orthorhombic symmetry. Catalytic activity evaluation showed conversion of 20.0% for both CH₄ and CO₂ with concomitant production of syngas with H₂:CO ratio of 0.37.

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