

Abstract Submitted
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Conversion of CO₂ to CH₄ by a coaxial hydrogen plasma shower method SATORU IIZUKA, KEISUKE ARITA, Graduate School of Engineering, Tohoku University — Conversion of CO₂ to CH₄ was investigated by using a coaxial hydrogen plasma shower method. Hydrogen radicals produced by hydrogen plasma in an inner tube were ejected through a narrow channel between a core rod electrode and the inner tube toward downstream reaction region, where carbon dioxide was supplied from an outer tube. Conversion rate of CO₂ to CH₄ was investigated by changing the discharge parameters such as applied voltage, gas flow rate, and so on. Carbon dioxide was successively reduced by hydrogen radicals. Maximum conversion rate of about 50% was established. This system provided very efficient conversion of CO₂ to CH₄.

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