

Reaction for syngas in atmospheric pressure plasma system

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Methane and carbon dioxide are two major greenhouse gases, and carbon dioxide is present in many natural gas resources. Direct reduction of greenhouse gases has been received worldwide attention as one of potential methods to overcome the global warming phenomena. As an effective approach, dielectric barrier discharge (DBD) plasma technology has been applied to the conversion of methane and carbon dioxide. In this study, conversion treatment of methane and carbon dioxide were carried out in a DBD reactor at atmospheric pressure with various process parameters. The electrical and physical properties of DBD composed of multilayered structure were analyzed for seeking the best process condition in the reaction between CO₂ and CH₄ under DBD conditions.