

**INFLUENCE OF VOLTAGE-CURRENT
CHARACTERISTICS ON CO₂ REFORMING OF
METHANE IN A BIPOLAR PULSE DRIVEN PLASMA
REACTOR OPERATED AT ATMOSPHERIC
PRESSURE**

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Reforming of methane with carbon dioxide has been carried out using a bipolar pulse driven plasma reactor operated at atmospheric pressure and non-equilibrium regime. This plasma reactor is driven by two kinds of power supply, characterized by different voltage-current characteristics under the same operating power and frequency. Varying the CO₂/CH₄ ratio and the discharge power, conversion rate, yield, and reforming efficiency for the two power supplies are investigated in conjunction with the static and dynamic behaviors of voltage and current. It is found that not only the values of voltage and current but also their shapes give an influence on the reforming performances. Finally, a better electrical operation regime for the efficient plasma reforming is proposed based on the relationship between the voltage-current characteristics and the reforming performance.
