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**Use of a dielectric barrier discharge reactor for hydrogen production** ANGEL MARIO FIGUEROA-HERNANDEZ, MARTIN NIETO-PEREZ, GONZALO RAMOS, Insituto Politecnico Nacional, JOEL PACHECO-SOTELO, Instituto Nacional de Investigaciones Nucleares — A dielectric barrier discharge reactor is used to produce hydrogen from a methane feed mixed with water vapor. The dielectric barrier reactor uses an anodized electrode to generate a thin oxide layer that serves as a second dielectric barrier, as well as a support for catalytic sites. Diagnostics of the system include optical spectroscopy and gas analysis using a differentially-pumped quadrupole residual gas analyzer, capable of sampling feed, exit and recirculation streams of gas to determine the conversion efficiency and the selectivity towards hydrogen of the system. Results on the initial operation of the system are presented in this work.

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