

Abstract Submitted
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Optical and electrical characterization of atmospheric pressure microplasma for CH₃OH/H₂O/Ar mixtures JIN HOON CHO, Research Institute of Basic Sciences, Ajou University , YOUNG DONG PARK, MYEONG YEOL CHOI, WOONG MOO LEE, Dept. of Chemistry, Ajou University — Atmospheric pressure, non-equilibrium microplasmas have become powerful experimental tools for many applications including microfabrications in microelectronics, surface modifications, environmental processing and many other areas. We investigated that comparative study of atmospheric pressure microdischarge generated in different nonequilibrium discharge with respect to observation optical and electrical characteristics at CH₃OH/H₂O/Ar mixtures. This paper focuses on plasma chemical reactions from methanol and water vapor mixture and the effects of plasma generation methods in the perspective of hydrogen generation. The microplasmas were generated by resorting to discharge modes such as some variations of glow dielectric barrier discharge (DBD) and also a variation of corona discharge called a microdischarge inside a porous ceramic (MIPC). Plasma chemical reactions were monitored using optical emission spectroscopy to gather information on the degree of non-equilibrium, electron density, uniformity of plasma reaction and concentrations of transient species.

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