

## Partial oxidation of methane to methanol by dielectric barrier discharge

Antonius Indarto, 이화웅, 최재욱, 송형근\*, 김승수<sup>1</sup>  
한국과학기술연구원; <sup>1</sup>한중대학교  
(hksong@kist.re.kr\*)

Partial oxidation of methane to methanol with oxygen is one of the most attractive and difficult challenges in chemical reaction engineering. Although it has been intensively studied by many research groups over the past decades, only a little progress has been made due to very low conversion of methane. Plasma-catalyst process is could be the promising way to achieve a better process. Non catalytic process in dielectric barrier discharge (DBD) shows that the yield of methanol reaches 8% at CH<sub>4</sub>:O<sub>2</sub> ratio of 3:1, supplied power of 75W, and flow rate of 30 ml/min. The amounts of supplied discharge power to the reactor have to be counted as an important factor in the reactions. Decreasing power effects on the increasing the selectivity of methanol. In order to raise the production of methanol, some metal catalysts supported by Al<sub>2</sub>O<sub>3</sub> were used.