

Methane conversion using gliding arc discharge

Antonius Indarto, 송형근*, 최재욱, 이화웅
한국과학기술연구원
(hksong@kist.re.kr*)

A study of methane conversion using gliding arc discharge was performed. The main products of reaction were Carbon (C-solid), H₂, and, C₂H₂. The effects of input frequency, power, total flow rate, and CH₄/additive gas ratio on conversion and product selectivity were investigated. Methane conversion was enhanced with increasing input power, frequency and decreasing the total gas flow rate. Addictive gas, such as argon and helium, has a great effect on methane conversion and product selectivity. Decreasing ratio of methane gas has increased the methane conversion 47.83% to 61.2% and H₂ selectivity 43.67% to 67.5% but decreasing the acetylene (C₂H₂) selectivity from 27.32% to 11.44%.