

Integrated micro fuel processors for portable PEFCs

이원교, 임성대*, 박구곤, 유상필, 윤영기,
김창수, 이원용, 설용건¹
한국에너지기술연구원; ¹연세대학교
(jimmyim@kier.re.kr*)

A small methanol fuel processor employing microchannel reactor was fabricated and the MeOH steam reforming performance was evaluated for class portable PEFCs applications. The channels were stacked and bonded to make microchannel reactors including fuel vaporizer and heat exchanger. Microchannel reactors for methanol steam reforming, catalytic combustion and CO reduction were also fabricated by coating the appropriate catalysts inside the stacked microchannels. The MeOH reformer as a hydrogen supplier was also optimized by considering thermal management between MeOH reformer and MeOH combustor. The fabricated microchannel reactors were integrated considering heat efficiency and compactness of the methanol fuel processor. For the integrated microchannel reactor, the reactor performance was evaluated to develop high efficient micro fuel processor for small PEFCs applications.