

## 고분자 연료전지용 마이크로 채널 개질기 개발

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### Microchannel Reformer For Proton Exchange Membrane Fuel Cell

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**Key words :** Microchannel(마이크로 채널), Reformer(개질기), Fuel Cell(연료전지), Hydrogen(수소)

**Abstract :** Recently, mobile electronics such as cellular phone, digital camera and laptop PC are emerging as leaders of digital life. But they need more power density of new power source than that of state-of-the-art lithium ion battery. Micro PEMFC(proton exchange membrane fuel cell) would be the promising solution for them, but the supply of pure hydrogen for its fuel is a bottleneck to be solved. Micro reformer system with methanol was designed and manufactured. Microchanneled metal foils were fabricated for evaporation, reforming reaction and catalytic combustion. Catalysts were deposited on the inner wall of microchannels and reaction was occurred there. Endothermic reaction and exothermic one exist in the reforming system simultaneously and we designed to achieve the heat balance for the steady performance. In this works, we explained the fabrication process and some results from experiments and calculations. And better design proposal was suggested as a future works.

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