Effect of cathode opening on the performance of air-breathing PEMFCs

차혜연*, 구보성, 정창렬, 장재혁
삼성전기 중앙연구소 eMD center
(hy1.cha@samsung.com*)

In air-breathing PEMFCs, cathode side is open to ambient air. Though there are very few reported literature on the effect of cathode side opening on the performance of air-breathing PEMFCs, still it lacks the systematic study on it. Usually, more exposed area of the cathode will make more oxygen available to the cell. But there is trade-off between exposed area of the cathode and mechanical factors. In this study, the effects of the cathode opening percent and structure on performance of the air-breathing PEMFCs are examined. The design of the cathode current collector depends on the design of the cathode housing. The active area of MEA is 1.68 cm2. Various parameters have been changed in the cathode housing design, such as cathode opening size, opening structure such as cylinder or rectangular parallelepiped, and cathode housing thickness.