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Development of a high-performance ethanol-hydrogen peroxide fuel cell

In this work, we propose to create the cathode potential by introducing a redox couple to the cathode while to use hydrogen peroxide to chemically charge to redox ions. Experimentally, it is demonstrated that the ethanol-hydrogen peroxide fuel cell with a redox couple of V4/V5 yields a peak power density of 450 mW cm^{-2}, which is much higher than that of the conventional cell with direct reduction of hydrogen peroxide.

Biography

Liang An received PhD degree in Mechanical Engineering from The Hong Kong University of Science and Technology. He is currently an Assistant Professor in Department of Mechanical Engineering at The Hong Kong Polytechnic University. He has authored more than 80 journal papers. His research interests include advanced energy conversion and storage technologies, such as fuel cells and batteries.

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