

Structural and compositional modification of electrode for reverse electrodialysis and electrochemical effect therein

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Herein, we suggest a modified Ti-based electrode for reverse electrodialysis to increase the power density and retain long-term durability. Specifically, the mesh-type Ti electrode and electrochemically fabricated Pt/Ti electrode are employed in the reverse electrodialysis single cell. The electrode systems are compared in terms of power output, resistance, specific capacitance, and redox-couple reaction kinetics near the electrode surface. We attempt to electrochemically analyze how such structural and compositional modification of electrode affects the behavior of salinity-gradient power device.