

Abstract Submitted
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Temperature dependence of Direct Methanol type fuel cell

ALEXY VOLKOV, ANDREW WALLACE, Angelo State University Department of Physics — Conventional fuel cells consist of metal anode and cathode electrodes submerged in an electrolyte. This anode-electrolyte-cathode arrangement allows for direct hydrogen input without any storage. One major drawback of Direct Methanol Fuel cell is carbon monoxide toxicity in the cell. Sodium borohydrate has a higher current density and lower toxicity than methanol. To further increase power density, a $\text{La}_{1-x}\text{Sr}_x\text{NiCoO}_4$ type superconductive coating was applied to the nickel (Ni) electrodes. The superconductive coating was applied on a pretreated Ni electrode to create a high-conductivity fuel cell. The superconductive coating-type direct methanol fuel cell was investigated for operational temperatures, current density, and power dissipation.

Toni Sauncy
Angelo State University Department of Physics⁴

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