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Synthesis and application of $\text{SrCO}_3\text{-Co}_3\text{O}_4$ nanoparticles-incorporated CNFs for DUFCS

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In this manuscript, low-onset potential has been reported for DUFCS. The NF (nickel free) electrocatalyst: $\text{SrCO}_3\text{-Co}_3\text{O}_4$ nanoparticles-incorporated carbon nanofibers were produced by electrospinning method, followed by calcination of electrospun mat composed of metallic salts and PVA polymer sol-gel in nitrogen environment at 75°C . Physical characterizations proofed the formation of $\text{SrCO}_3\text{-Co}_3\text{O}_4$ nanoparticles-incorporated carbon nanofibers. The electrochemical characterizations of $\text{SrCO}_3\text{-Co}_3\text{O}_4$ nanoparticles-incorporated carbon nanofibers-based electrode towards the electrooxidation of urea in alkaline medium is assessed by CV measurements. $\text{SrCO}_3\text{-Co}_3\text{O}_4$ nanoparticles-incorporated carbon nanofibers reveal reasonable current density of $21.33\text{mA}/\text{cm}^2$ at low fuel concentration. Remarkably, the low onset potential has been observed, showing a worthy applications prospect of $\text{SrCO}_3\text{-Co}_3\text{O}_4$ nanoparticles-incorporated carbon nanofibers in DUFCS.

Biography

Saeed Al-Meer has been working as the Director in the Central Laboratories Unit, Qatar University. He has received his PhD from University of Wales, UK. Presently, he is working on the utilization of urea-containing wastewaters for energy generation using modified fuel cells based non-precious metals-doped CNFs and metals-decorated graphene. He has authored 20+ peer reviewed papers along with one book chapter and participated in several research projects.

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