TECHNOLOGY OVERVIEW

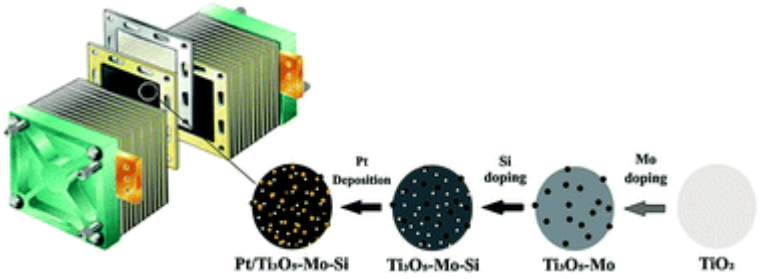
Fuel Cell Catalyst Support Based on Doped Titanium Suboxide

Background

Fuel cells are devices that convert chemical energy from fuels into electricity through electrochemical reactions. Currently, PEM fuel cells rely on platinum electrocatalysts supported by carbon materials. However, carbon's susceptibility to corrosion limits its durability and it is detrimental to the long-term performance of a fuel cell. In addition, platinum aggregates on the carbon surface and decreases the performance of the electrode. As a result, there is a necessity to replace the traditional carbon supports in PEM fuel cells with a support material that is resistant to corrosion.

Technology Overview

Introducing an extraordinary breakthrough in fuel cell technology, this carbon-free multifunctional titanium suboxide (Ti3O5Mo0.2Si0.4) fuel cell catalyst support exhibits exceptional electronic conductivity when combined with platinum, significantly improving the efficiency and durability of fuel cells. PEM fuel cells, relying on secure and renewable sources, can greatly benefit from this innovative catalyst support.



In fact, during a rigorous 5000-cycle accelerated stress test, the platinum-titanium suboxide catalyst showcased a mere 10% reduction in its active surface area, highlighting its remarkable resilience. With these outstanding properties, this catalyst emerges as an outstanding contender for PEM fuel cell technology, enabling the creation of clean and portable power sources.

By leveraging this cutting-edge technology, we offer a viable solution for non-polluting vehicles and various portable devices, revolutionizing the way we power our transportation and portable energy needs.

Business Opportunity

Ontario Tech University looks to work with companies in a way that helps develop a relationship that is tailored to their interests. Thus, are happy to explore collaborations, licenses, options, assignments, etc. It is the belief that only through enabling the company to utilize its business model will Ontario Tech University technology be able to make an impact within the marketplace.

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Canadian Patent: CA3019718A1
A fuel cell catalyst support based on doped titanium suboxides with enhanced conductivity, durability and fuel cell performance

About Ontario Tech University

Ontario Tech University conducts high-quality, rigorous research designed to meet the research and development needs of business and industry and benefit society. Whether the focus is on developing hydrogen-from-nuclear or fuel-cell technologies, improving network security, or understanding youth crime, we are committed to interdisciplinary research and development that addresses social, environmental, health, and economic challenges.