PORTABLE HYDROGEN GENERATOR AND LOW COST HYDROGEN FUEL CELL SYSTEM DEVELOPMENT

TECHNOLOGY OVERVIEW

This system combines a hydrogen generator with an efficient light-weight fuel cell.

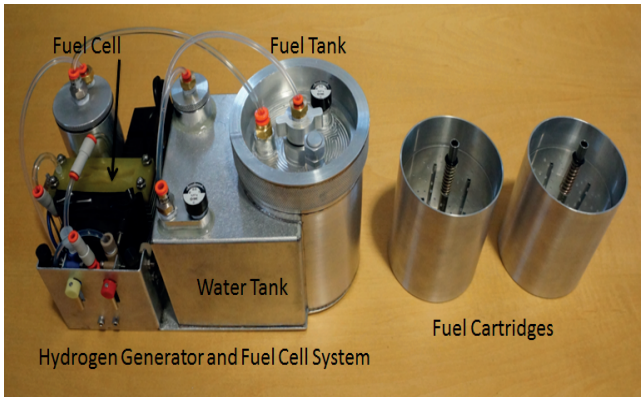
The hydrogen generator is simple to operate and maintain. It uses a high-energy solid source of hydrogen which is released by reaction with water. Hydrogen is produced at room temperature with a safe, controllable, self-sustaining exothermic reaction.

The fuel cell uses a Platinum-alloy and vertically-aligned carbon nanotubes as catalyst support to maximise its efficiency and reduce the amount of platinum required. The design increases durability and reduces cost.

POTENTIAL APPLICATIONS

The combined hydrogen generator and high efficiency light-weight fuel cell is ideal for applications where a both a long-lasting power source and a high power-to-weight ratio are required. It is expected to out-perform similar battery-driven applications of equivalent weight.

The system can be scaled up or down. Further power-to-weight improvements can be made by employing alternative materials such as advanced composites for the hydrogen generator housing.



Hydrogen Generator and Fuel Cell System

MARKET OPPORTUNITIES

The technology can be adapted for mobile backup power systems, small-scale distributed generation, transportation, specialty vehicles, and autonomous robots.

COMMERCIALISATION

The technology is available for licensing and technology transfer.

CONTACT DETAILS

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Whether you are looking for new ideas to improve your current business flow, need access to research and technology expertise, or require facilities to bring your innovative ideas to life, we may be the partner for you.

At Republic Polytechnic (RP), we bridge the gap between knowledge and application by facilitating information and technology transfer to industry partners. Taking a holistic approach, our team of experts can assess your business needs, provide consultancy, conduct feasibility studies, and render support to help increase your company's competitiveness.

Facilities and Equipment
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Research and Development
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Current Opportunities for Collaboration and Commercialisation

- Augmented Reality in Mainstream Sports Medicine – Diagnosis and Treatment of Lower Limb Injuries
- Brain Controlled Communicating Device for the Physically Handicapped
- Innovative Single-tube Multiplex Diagnostic Platform for Dengue and Chikungunya Viruses
- Low Cost Wireless Patient Weight Measurement System for the Physically Impaired and Bedridden
- New Catalysts for Sustainable Liquid Biofuels
- New Chemical Entities with Potential Applications in Photodynamic Therapy
- Regenerative Energy Wireless Sensor Network for Data Centre
- Thermoelectric Micro-coolers for Electronic and Optoelectronic Applications
- Visual Sentiment Analytics for Social Media Analysis
- Wireless Proximity Sensing for Safety and Security Applications

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