

The University of Technology, Jamaica (UTech) through grant funding of €421,000 from the African, Caribbean and Pacific Group (ACP) and the European Union (EU) officially launched its innovative research project titled “*The application of Solar-Powered Polymer Electrolyte Membrane (PEM) Electrolysers for the Sustainable Production of Hydrogen Gas as fuel for domestic cooking*” at a special ceremony held on Thursday, October 18, 2012 at the Courtleigh Hotel and Suites in Kingston.

The funding will support collaborative work led by a team in the School of Engineering at UTech with persons from Brunel University, London, University of the West Indies (UWI), Mona, the Ministry of Science, Technology, Energy and Mining (STEM) and the Bureau of Standards, Jamaica.

**Professor the Hon. Errol Morrison, OJ**, President of UTech, said that he welcomed the partnership noting that UTech is serious about sustainable energy. The development of the project he said would be the launching pad for the entrepreneurial activities to be gained from this venture which include the creation of jobs and the reduction of Jamaica’s dependency on imported petroleum.

Keynote speaker, **Hon. Phillip Paulwell, MP**, Minister of Science, Technology, Energy and Mining in endorsing the project congratulated UTech for undertaking this much needed initiative, the first of its kind in Jamaica. The Minister noted that 90% of Jamaica’s energy comes from imported fossil fuels, adding that the successful development and implementation of the project should see a significant reduction in the country’s import bill for petroleum products as 84% of households in Jamaica use LPG. He also reiterated the vast opportunities to be derived from the commercialization of the project.

Minister Paulwell highlighted the central role of innovations such as the UTech Research Project to get Jamaica out of its “economic rut”. He pledged the Ministry’s commitment for the successful completion and implementation of the project and expressed the hope that outcomes will be applicable to other countries within the African Caribbean and Pacific region.

**Mr. Thomas Opperer**, Head of Section, Infrastructure and Rural Development from the EU Delegation in Jamaica, stressed the importance of research being applicable and replicable by modifying and adapting existing technologies.

#### *UTech Awarded Competitive Bid*

**Dr. Ruth Potopsingh**, Director, Sustainable Energy and Project Manager for the Solar Hydrogen Project, said that the process to obtain the grant was rigorous. She noted that UTech won the EU grant from a competitive field of universities in the Caribbean, Pacific region and Africa. “We drew on our own internal expertise and were successful”, she added. The Solar Hydrogen Project she said is a renewable and sustainable intervention project which will run for thirty-six (36) months at a cost of €495.344.36 of which the EU has funded 85%.

#### *Benefits to be derived from the development of the project*

Dr. Potopsingh explained that the research will focus on the production of hydrogen gas from water as an alternative to Liquefied Petroleum Gas (LPG) cooking gas. This she said would reduce Jamaica’s dependency on the importation of petroleum which means a reduction in Jamaica’s energy bill, reduced deforestation and an increase in our renewable energy sources for improved sustainable and economic development.

#### *Potential for commercialization*

Dr. Potopsingh noted that the outcome of the project “has strong potential for commercialization” resulting in job creation and stimulating economic growth. She announced that the School of Entrepreneurship through the Technology Innovation Centre at UTech will act as the incubator to provide support for entrepreneurs who would have an interest in this niche market for the retrofitting and building of stoves and cylinders which will utilize this new technology.

#### *Production of the Solar Hydrogen Gas*

**Dr. Earle Wilson**, Head of UTech’s Energy Unit, School of Engineering and Lead Researcher, in addressing the technical research component of the project, said that the production of the solar hydrogen cooking gas will involve the electrolysis of water by breaking up water molecules via electricity provided by photo-voltaic power into hydrogen and oxygen. The hydrogen produced would be stored as

cooking gas at medium pressure at a Hydrogen Station from which light-weight cylinders will be filled at low pressure for domestic use.

The successful development and implementation of the research project as outlined by Dr. Wilson consists of six key areas to be investigated. These are power characterization of the photo-voltaic system, colouring the flame of the burning hydrogen gas, giving a scent to the hydrogen gas in case of leakage, gas flame blow-back prevention, gas storage medium and gas stove modifications.

### **Partner Involvement**

**Professor Maria Koloktroni** of the School of Engineering and Design, Brunel University in the United Kingdom, said that Brunel was happy to be partnering with UTech. She noted that, “ the University’s involvement with UTech dates back to 1999 when she first worked with Dr. Wilson on his MSc research project on roof ponds for cooling houses and later in 2004 on his PhD research project on ‘Solar Hydrogen fuel generation with thermal management for equatorial regions’ which now forms the backdrop of the current research project”.

Representatives from the other partner institutions all expressed their eagerness in partnering with UTech and reaffirmed their commitment for its successful implementation. **Prof. Ishen-Kumba Kahwa**, Dean of the Faculty of Pure and Applied Science, UWI, said that it was important that Jamaica continues to find ways to combat the challenges of harnessing sustainable energy by the pooling of our resources to strengthen our capacity. **Mrs. Yvonne Hall**, Executive Director of the Bureau of Standards, Jamaica informed the gathering that her organization will ensure that all equipment and material meet national and international standards to ensure the safety of the consumer.