

**MEDIA RELEASE****Republic Polytechnic's Technology Day sees record industry turnout**

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***Key highlights include the official opening of the RP-ST Kinetics Green Energy Management Solutions (GEMS) Lab***

**Singapore, 2 October 2013** – A remarkable showing of innovative staff projects, a line-up of industry-leading speakers and the opening of a Green Energy Management Solutions Lab marked Republic Polytechnic's (RP) ninth annual Technology Day.

The RP Technology Day has, over the years, attracted increasing participation from government, industry, academia and researchers. Themed *Productivity and Sustainability 360*, this year's event was the largest one ever held, with more than 500 attendees from various industries and many companies as supporting partners.

The event was officiated by Guest-of-Honour, Mr Choi Shing Kwok, Permanent Secretary, Ministry of the Environment and Water Resources, who said in his opening address, "I am heartened and excited to see that the research projects that have been undertaken at Republic Polytechnic are not only seeking implementable solutions to help Singapore move forward in becoming a productive economy with good jobs for everyone, but also furthering our ambitions to become a sustainable global city that can be a role model for others."

**Productivity & Sustainability 360**

This year's Technology Day showcased the importance of innovation in promoting sustainability and productivity in the three key areas of food and nutrition; environmental technologies and; information and communication technologies.

With separate forums for the three sectors, the event saw keynote speeches and panel discussions featuring senior business leaders and researchers from Singapore's top academic institutions, who spoke about innovation and its role in boosting productivity and sustainability within their industries in Singapore and around the region.

The main keynote address was given by Mr Valerio Nannini, Managing Director of Nestlé Singapore, and Chairman, Board of Advisors, Singapore Innovation and Productivity Institute, who touched on how Singapore can move forward to shape a culture of innovation.

"Over the years the RP Technology Day has been a good platform to bring together industry, government and academia to share industry insights, technology updates and to network. We are very encouraged by the strong participation from industry, making this year's event our biggest. We are glad that our stakeholders see much value in collaborating with Republic Polytechnic. This year's theme on 'Productivity and Sustainability' seeks to address some current issues faced by our industry partners," said Mr Seto Lok Yin, Acting Principal, Republic Polytechnic.

**Staff research and innovation projects**

Showcased this year were several highlight staff projects, currently in development and notable for their innovative approach. These included a functional soy drink which had been fortified with Omega3, for which the team at RP has worked on the formulation to incorporate DHA + EPA, omega-3 fatty acids with most potent health benefits, into traditional soy drink without any detectable fishy odour; a content

management system for digital media censorship and classification that addresses the gap in capabilities in existing internet filters and parental lock systems; and a project that aims to make Hydrogen fuel cells more practical and affordable, which is currently in prototype stage and is expected to be commercialised in 2014.

The RP Technology Day also saw the official opening of the joint research facility, the RP-ST Kinetics Green Energy Management Solutions (GEMS) Lab, which specialises in green energy technology, and the signing of a collaboration agreement between RP and A\*STAR's Institute of Chemical and Engineering Sciences (ICES).

#### **RP-ST Kinetics Green Energy Management Solutions (GEMS) Lab**

The joint research facility by RP and ST Kinetics is aimed at carrying out cutting-edge research in the area of clean energy solutions.

The lab will house key equipment such as the Integrated Fuel Cell System with Electrolyzer, which will help researchers perform benchmarking tests on the performance of next generation fuel cells and conduct detailed analysis on hydrogen generation technology for refinement and optimisation.

The lab also has a 2kW Mobile Fuel Cell Unit, which helps researchers understand the requirements for mobile fuel cell systems meant for Electric Vehicles (EV). The mobile fuel cell unit will play an instrumental role in the design and development of safe, reliable and efficient energy storage devices, one of the key focus areas of the RP-ST Kinetics GEMS lab.

"The launch of the GEMS lab will further advance our R&D efforts to develop environmentally friendly and commercially viable energy solutions. We are proud to deepen our collaboration with RP and look forward to breaking new grounds in energy management and green energy technologies," said Mr Sew Chee Jhuen, President, ST Kinetics.

#### **RP-A\*STAR ICES MOU**

RP also signed an MOU with A\*STAR's ICES Experimental Power Grid Centre on Jurong Island which will offer RP students opportunities for internships and mentorship around final year projects, while RP staff will work together with ICES on research projects. The Centre boasts a state-of-the-art facility which will facilitate research and development activities around energy and smart grid solutions.

#### **About Republic Polytechnic**

The first educational institution in Singapore to leverage Problem-Based Learning approach for all its diploma programmes, Republic Polytechnic (RP) has six schools and two academic centres offering thirty-seven diplomas in Infocomm, Engineering, Applied Science, Technology for the Arts, Sports, Health & Leisure, Events and Hospitality, Enterprise, and Communication.

Republic Polytechnic is committed to nurturing innovation and entrepreneurial learning in an environment that develops problem-solving skills and lifelong learning opportunities. Its holistic, broad-based curriculum, covering culture, enterprise development and cognitive processes, prepares students for an active and meaningful role in society.

Republic Polytechnic strives for excellence and has achieved various international and national accreditations, including ISO9001, ISO14001, OHSAS 18001, SS540, Singapore Quality Class, People Developer, Innovation Class, and Service Class.

For more information, visit [www.rp.edu.sg](http://www.rp.edu.sg)

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### **Appendix: Highlight RP projects**

- **Content Management System for Digital Media Censorship and Classification**  
Concern about the negative influence that media – especially unfiltered and unsupervised access to the internet – exerts on children and adolescents is on the rise. However, current technology such as Internet filters and parental lock systems have limited capabilities to block undesirable content.

RP has developed software that is capable of allowing content providers and home users to censor rate and classify digital media. The software permits users to select various degrees of content censorship according to their required levels. Unlike conventional internet filtering software which blocks access to websites or files, the new software will examine segments of content and filter out any malicious content before screening the consented content to the user.

- **Practical and Cost-Effective Hydrogen Fuel Cells**  
In recent years fuel cells have garnered significant attention as a potential source of “clean” energy with a wide variety of applications – from miniaturised portable power (effectively substituting the battery), to automobiles and power generation for homes and businesses. However, the challenges associated with hydrogen storage capacity and the high cost of these systems have prevented wide-scale commercialisation of fuel cells.

Researchers at Republic Polytechnic have developed a unique system, which can generate hydrogen gas on-demand with quick start-up at room temperature, to be used in fuel cells. By using chemical hydrides, results have shown a 30% improvement in hydrogen capacity over other systems.

Furthermore, the team at RP has developed a new concept – the Effective Platinum Utilisation Index – to measure how efficiently the Platinum catalyst is being used. By using new materials in a fuel cell, they have been able to improve Platinum utilisation by 21%, compared with commercial catalysts used in similar conditions.

- **Functional Soy Drink**  
A soy drink with apple and cinnamon as well as fortified Omega-3 oils has been developed to create a truly functional soy drink with many health benefits. The team at RP has worked on the formulation to incorporate DHA + EPA, omega-3 fatty acids with most potent health benefits, into traditional soy drink without any detectable fishy odour.