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Energy Institute (Hong Kong Branch)
能源學會(香港分會)

Taiwan Study Tour December 2009

8 Members of the Hong Kong Branch of the Energy Institute took part in the Study Tour to Taiwan in December 2009. The visit resulted from an invitation from the association of Taiwan Energy Service companies (TESA) and some members' recent business contact with Asia Pacific Fuel Cell Technologies Ltd.

Taiwan-Hitachi generously extended the invitation to visit their extensive manufacturing plant south of Taipei. We toured the manufacturing facility and witnessed first-hand the production of air-conditioning units, inclusive of the scroll compressors and anti-vibration vibration design that makes the Hitachi units popular for their quiet operation as much as improved efficiency.




Images: a) inside the Hitachi production plant b) the scroll compression c) near-complete air-con unit d) the visitors plus Hitachi Manager

We then travelled to Hsin Chu County Government offices where we were given a presentation of a TESA member's upgrade of the offices' lighting and air-conditioning systems. The installation had followed extensive modelling studies indicating 54% energy-saving from changeover from T8 to T5 fluorescent lamps and the replacement of the existing air-conditioning plant with Trane equipment. The economiser controls take full advantage of night purging and variable air volume circulation. Our visit to the impressive plant-room confirmed the extent of the building energy management controls and system's superbly quiet operation.




Images: a) Hsin Chu government official and TESA consultants b)EIHK chair M.Leung andTESA's Bill Chan exchange souvenirs, c) inspecting Hsin Chu county government's new plant d) the TESA + Hsin Chu County engineering team + EI HK members outside the offices.

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The Taiwan Energy Service Association hosted dinner and we met about 15 members of their 200 strong association. Our conversations with members confirmed their growing workload and tremendous business opportunities for promoting energy saving in Taiwan industries as well as office premises. Dinner was a lively occasion and strong bonds with the local association were set-up.

Images: One of the dinner tables b) and c) exchanging ideas, impressions and encouragement d) TESA members and EI HK together

Our final visit was to the Science Park offices of the Asia Pacific Fuel Cell Technologies Limited. The company has developed a polymer exchange membrane (PEM) fuel cell and metal salts hydrogen storage canister specifically for motor scooter applications. (The hydrogen canisters take only 30 seconds to reload.) Motor scooters are an extremely common method of transport throughout Taiwan. The scooter itself has also been designed by the company for the fuel cell applications and a 400 km cross-island road test was completed in mid-November 2009 confirming the scooter fuel cell system's durability. By comparison with fuel cells generally, this one is relatively low-cost and well integrated into a consumer product in high demand in Taiwan. The company is preparing for early commercial production and expanding its production facilities. APFCT has also developed a fuel cell powered 'buggy' targeted at the urban delivery market. More information can be seen on the APFCT website at www.apfct.com.tw.

Images: a) APFCT PEM Nafion membrane -Du Pont b) + c) AFPCT stacks d) the APFCT scooter & e) rear dual canister hydrogen store

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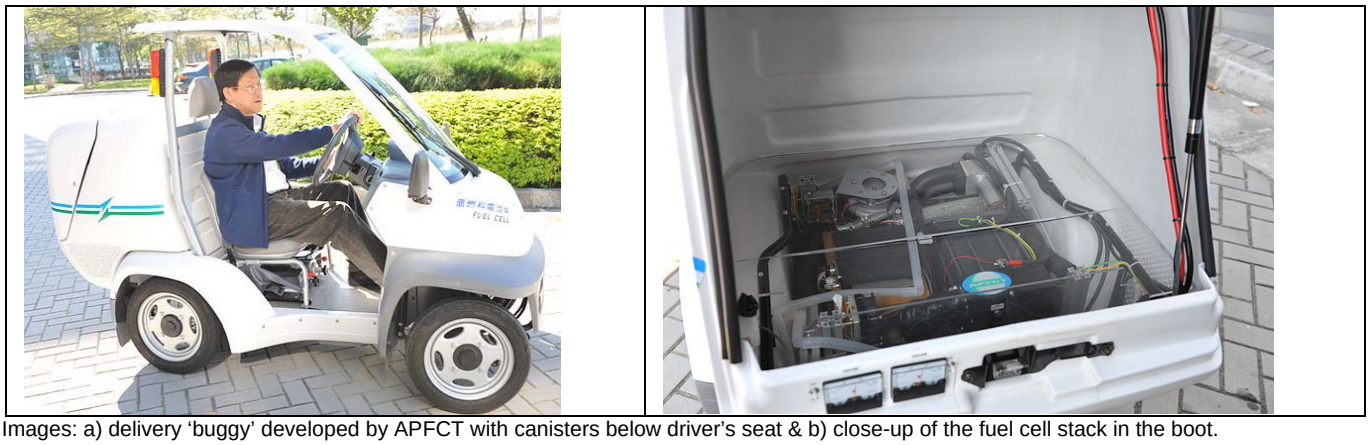
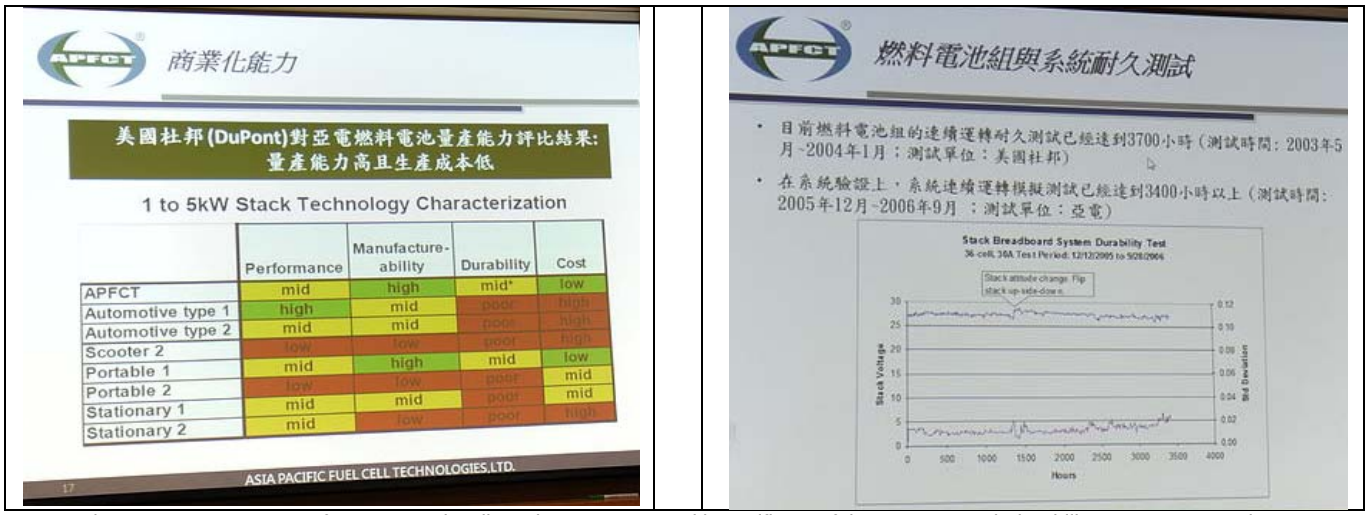


Images: a) delivery 'buggy' developed by APFCT with canisters below driver's seat & b) close-up of the fuel cell stack in the boot.



Images: a) Du Pont assessment of current Fuel Cell stack status b) Certificate of the APFCT stack durability test over 3,500 hours

Images a) +b) typical Taiwan road scenes c) factory seen from the motorway d) evening sunset over the mouth of the river.

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