

Research, Project and Achievement

DEDE Fuel Cells and Hydrogen Projects in 2005-2006

1. D&D Project on Fuel Cells Power Generation (2005)

It was a project initiated as the 1st Project to perform engineering to retrace the fuel cells unit type of **proton exchange membrane** (i.e. a Polymer Electrolyte Membrane **(PEM)** Fuel Cells or **PEMFC**) for the 1 kW power generation and analyse the elements of fuel cells unit to develop PEM fuel cells where its parts are assembled in the country and demonstrate the fuel cells developed for power generation. Then, bring the project result to expand by enlarging the power, developing and demonstrating its utilisation in motor-tricycle (a so-called **Tuk-Tuk**) underneath the D&D Project on Using PEMFC in Tuk-Tuk. Besides, this project is a part of the Road Map for Development of Fuel Cells and Utilising of Hydrogen in Thailand for heading to a building up and development of fuel cells industry and its related components.

2. D&D Project on Using PEMFC in Motor Tricycle : "Tuk-Tuk" (2006)

This project aimed to develop the role model of motor-tricycle, *a so-called Tuk-Tuk*, fuelled by PEM fuel cells (PEMFC) at not less than 5 kW. Develop the technology connecting the Fuel Cells System and the car Drive System. Demonstrate and investigate the use of PEMFC at not less than 5 kW in Tuk-Tuk. Determine the industry development methodology for technology connecting the Fuel Cells System with the car Drive System for the country. Develop the knowledge and knowledgebase on development of fuel cells car making industry in Thailand.

3. D&D Project on Hydrogen Production and Storage (2006)

This is a project to develop the prototype of the hydrogen production system from natural gas at capacity of 50 l/day with its storage system in form of solid at capacity of 50 l/day and the hydrogen storage system in form of high pressure gas. Such this would be the role model for further development in capacity expansion of production and storage.

4. D&D Project on Producing Hydrogen by Thermo Chemical Process (2006)

The project was to develop the knowledge and technology of producing hydrogen by reaction process of thermochemical and to develop and demonstrate the hydrogen production by thermochemical process. This will cover the study on methodology and safety requirements of its production system and storage used by the aforesaid production process.

Remark: **D&D Project** denotes **Development and Demonstration Project**