

**Directory of Groups/Centres Involved in Energy Research,
Development and Demonstration in Singapore
(Compiled by R&D Workgroup, National Climate Change Committee)**

Universities

National University of Singapore

Faculty of Engineering

Dept of Mechanical Engineering
Energy & Bio-Thermal Systems Group
Contact Person/s:

- (a) **Prof Chou Siaw Kiang** (Head), mpecsk@nus.edu.sg, Tel: 6874-2215, Fax: 6779-1459
- (b) **Prof Ng Kim Choon**, mpengkc@nus.edu.sg, Tel: 6874-2214, Fax: 6779-1459
- (c) **A/P Christopher Yap**, cyap@nus.edu.sg, Tel: 6874-2271, Fax: 6779-1459

Website: <http://serve.me.nus.edu.sg/thermo/>

Energy research areas: modelling and performance of absorption and adsorption chillers, compact heat exchangers for waste heat recovery and dehumidification, co-generation systems, ice storage for cooling and air-conditioning, and energy performance of buildings and building envelopes. In addition, solar energy research is carried out on: solar drying, solar desalination, solar air-conditioning and hot water heating. Combustion in the micro-scale, micro thermophotovoltaic power generators, solid propellant micro-thrusters, and miniaturization of electro-adsorption chillers; thermal management in electronic packaging - heat transfer analysis in electronic packaging, moisture migration and its effects on electronic packaging, electronic cooling using phase change materials

Dept of Electrical & Computer Engineering

Drives, Power & Control Systems Division; Electrical Energy Systems research group; Centre for Power Electronics

Contact Person: **Prof Lee Tong Heng**

Website: http://www.ece.nus.edu.sg/about_us/areas/DPCS.htm

Research areas: power electronics, electric drives and control, operation and control of power systems, fuzzy control, neural networks and expert systems.

Department of Industrial & Systems Engineering

Contact Person: **Prof Ang Beng Wah** (Head), iseangbw@nus.edu.sg, Tel: 6874-2203, 6874-2561, Fax: 6777-1434, Office Location: Block E1A-06-07

Research areas: analytical tools for analysing large-scale energy, transportation and environmental systems for decision-making; energy demand modelling and analysis; index decomposition analysis

School of Design & Environment

Dept of Building

Centre for Total Building Performance and Centre for Energy Sustainability

Contact Person: **A/P Lee Siew Eang** (Director), bdgleese@nus.edu.sg, Tel: 6874-3443 / 4082 / 4083, Fax: 6777-3953, Room: SDE2-03-03

Website: <http://www.ctbp.bdg.nus.edu.sg/>

Energy research areas: Energy performance of buildings, energy management

Faculty of Science

Dept of Physics

Contact person: **Dr Chen Ping**, phychenp@nus.edu.sg, Tel: 6874-2982, Fax: 6777-6126

Research areas: Hydrogen storage

Faculty of Arts & Social Sciences

Dept of Economics

Contact person: **Dr Chang Youngho**, ecscyh@nus.edu.sg, Tel: 6874 3947, Fax: 6775 2646

Research areas: Economics of Global Warming and Climate Change, Economics of Renewables, Electricity Market Deregulation: Efficiency and Equity, Energy Security

Nanyang Technological University

College of Engineering

School of Mechanical & Aerospace Engineering

Fuel Cell Strategic Research Programme

Contact Person: **A/P Chan Siew Hwa** (Director), mshchan@ntu.edu.sg, Tel: 6790-4862, Fax: 6792-4062

Website: <http://www.ntu.edu.sg/mae/Research/Programmes/Fuelcell/>

Energy research areas: PEM fuel cells, solid oxide fuel cells, fuel reforming, fuel cell systems

Energy & Environment Research Interest Group

Contact Person: **A/P Chan Siew Hwa**, **A/P Ho Hiang Kwee**

Research areas: Integrated energy systems – analysis, modeling, diagnostics; building energy; refrigeration; HVAC systems; thermal management

Centre for Green Building Technology

Contact Person: **A/P Tay Seow Ngie** (Director), msntay@ntu.edu.sg, Tel: 6790-5593, Fax: 6792-4062

Website: <http://www.ntu.edu.sg/mae/centres/energy/aboutcenter.htm>

Energy research areas: Energy Management of Chiller Plant, AHU Control Strategy

Photocatalytic Process for Cooling Tower Water Treatment, Photocatalytic Process for Indoor Air Sterilization, Cooling Storage for Central Air Conditioning Plant, fuel cell systems

School of Electrical & Electronic Engineering

Division of Power Engineering

Center for Advanced Power Electronics (CAPE)

Contact Person: **Prof Choi San Shing** (Director and Head of Division), esschoi@ntu.edu.sg, Tel: 6790-5406, S1-B1a-15

Research areas: Flexible Transmission-Distribution Systems (FTDS): to conduct research in flexible transmission system analysis and control, distributed generation, and flexible transmission system devices, etc.; Power Quality Analysis and Enhancement (PQAE): to conduct research in network-load interactions, and power quality compensation, etc.; Electromechanical Actuators and Drives Systems (EADS): to conduct research in rotary blood pump, three-axis motion control system, disk drive servo, etc.

Division of Chemical and Biomolecular Engineering

Contact Person: **Ast/P Wang Xin** (from May 2005)
Research areas: fuel cells

Institute of Environmental Science and Engineering
Advanced Clean Energy Centre

Contact Person: **Mr David Liang** (Director), dliang@ntu.edu.sg, Tel: 6794-1515, Fax: 6792-1291

Website: http://www.iese.ntu.edu.sg/rd_acec_intro.htm

Research areas: natural gas separation and production processes. The research work at IESE will be extended through collaborations to include hydrogen production and generation systems, natural gas conversion and fuel cell technologies, biomass energy systems as well as novel hydrogen utilisation technologies.

Polytechnics

Singapore Polytechnic

School of Electrical & Electronic Engineering
Energy Conservation Technology Centre

Contact Person: **Dr Jiang Fan**, jiangfan@sp.edu.sg, Tel: 6879-0629

Website: http://www.sp.edu.sg/schools/eee/r_d/ect/ect.htm

Research areas: renewable energy (esp. solar and wind), energy conservation

Ngee Ann Polytechnic

School of Engineering, Electrical Engineering Division and Renewable Energy Centre

Contact Persons:

(a) **Mr Koh Wee Hiong** (Director EE Division)

(b) **Mr Mr Tan Choo Kee, Andrew**, tck2@np.edu.sg, Tel: 6460-6130

Website: <http://eekems.np.edu.sg/rec/main.htm>

Research areas: renewable energy; energy efficiency technologies

Temasek Polytechnic

School of Engineering

Contact Person: **Mr Chan Kim Kai** (Course Manager, Intelligent Building Diploma), kimkai@tp.edu.sg,

Tel: 6780-6532

Research areas: Energy efficient buildings, energy management and automation

A*STAR

Institute for Materials Research and Engineering (IMRE)

Contact person: **Dr Gan Leong Ming**, lm-gan@imre.a-star.edu.sg, Tel: 6874-8370, Fax: 6872-0785, 3

Research Link Singapore 117602

Research areas: PEM fuel cell

Singapore Institute for Manufacturing Technology (SIMTech)

Contact Person: **Stephen Wong**

Research areas: micro fuel cells, fuel cell manufacturing automation, MEMS-based microengine

Institute of High Performance Computing

Contact Persons: **Dr Wu Ping, Dr Lum Kah Wai Rina, Dr Karl Erik Birgersson**

Research areas: fuel cell modeling, fuel cell materials modeling; micro-engines

Institute of Chemical and Engineering Sciences

Contact Persons: **Dr James George Highfield, Dr Luo Jizhong**

Research areas: Applied catalysis in the fields of conventional, clean, and renewable fuels
H₂ storage & energy systems, fuel cells