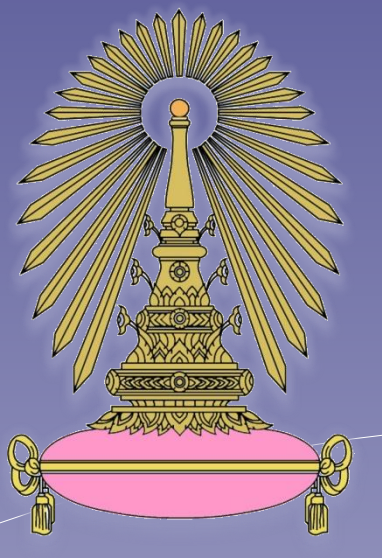


# Environment and Safety

## Chemical Technology

### Chulalongkorn University



#### Project Goal :

To solve the environmental and safety problems in chemical plants with different technologies such as electrochemical process, separation and purification processes which are distillation, extraction, filtration, membrane, and supercritical fluid so that the plants become cleaner and greener

#### Objectives :

- ❖ To increase the process effectiveness by implementing new separation technologies
- ❖ To recover valuable materials from chemical wastes
- ❖ To treat chemical wastes and reduce environmental impact from its discharge
- ❖ To improve the safety in chemical plant

#### Rationale :

In each year, industries, especially chemical industries, have emitted large amount of wastes to the environment. However, the environment carrying capacity is almost reached its limit. Thus, it is the duty of scientists and engineers to develop more effective process technology to cope with this demand. Moreover, the natural resources are depleting due to large human consumption. Thus, to alleviate the problem, materials recovery will be one of the solution. This research group is focused on improving the process technologies for waste treatment and materials recovery.

#### Research Themes :

- ❖ Modern waste treatment technology based on electrochemical, supercritical fluid, and membrane technologies
- ❖ Materials recovery by electrochemical techniques
- ❖ Gas purification by membrane pervaporation
- ❖ Runaway reaction

#### Equipments :

- ❖ Potentiostat
- ❖ High Performance Liquid Chromatography (HPLC)
- ❖ GC with Mass Spectrometry (GC-MS)
- ❖ Atomic Absorption Spectroscopy (AAS)
- ❖ Electrochemical Apparatus

#### Collaborations :

- ❖ Institut National Polytechnique de Toulouse, France
- ❖ University of Michigan, USA

#### Research Members :

- ❖ Assoc. Prof. Dr. Somkiat NGAMPRASERTSITH
- ❖ Assoc. Prof. Dr. Khantong SOONTARAPA
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