Postgradual study and practical course for engineers (first of all for chemical engineers) arriving from Qatar

Host institution: Centre for Energy Research Hungarian Academy of Sciences

1121 Hungary, Budapest, Konkoly Thege Miklós út 29-33

**The program**

Optional lectures:

Catalysis, heterogeneous and homogeneous

Hydrocarbon technology, petrochemistry

Electrochemistry

Environmental technologies, green chemistry

Wastewater treatment, chemical and biological

Nuclear analytical methods

Analytical techniques (ICP-MS, HPLC-MS, GC-MS)

Dosimetry

Radiation chemistry, usage in wastewater treatment

Unit operation, process control, Membrane operations (BME, Budapest University of Technology and Economics)

Possible **visits** during the course:

KFKI Campus, Centre for Energy Research,

Budapest sightseeing,

Centre for Energy Research Nuclear reactor,

Thermohydraulics and reactor simulation laboratory

Universities:

BME, Faculty of Chemical and Bioengineering, Faculty of Natural Sciences, Faculty of Machine Engineering

ELTE, Faculty of Natural Sciences

PE-Veszprém, Faculty of Engineering, Department of Chemical Engineering

SZTE-Szeged, Faculty of Natural Sciences, Chemistry Department

Companies:

MOL, Danube Refinery Százhalombatta

EGIS Pharmaceutical Company,

TVK, Olefin and polymer plant Tiszaújváros

FCSM, Budapest Sewage Works, North Pest Wastewater Treatment Plant

**Laboratory practices** with 1 or 2 hours introductory lectures, after that measurements in 3-5 persons groups

Catalysis, Catalytic gas phase reaction, Adsorption measurements, Water oxidation, Electrochemistry, Chloride measurement in ppb range

HPLC-MS GC-MS measurements; Water characterisation, COD, TOC, Wet oxidation of wastewater

ICP-MS, Dosimetry, Sample collection and preparation

XRF, gamma spektrometry, Radiography

Distillation, Fluidisation, BOD measurement, Activated sludge pilot plant (at BME, Budapest University of Technology and Economics)

**Individual laboratory practices** in 2 persons groups,

**Preparation of report and presentation, Consultation** **Presentations,**

**Mutual evaluation** of the course, handover of certificates

Similar program with appropriate level can be organized for undergraduate students also.