TR-5-13 **Upgrading Processes of Heavy Oil**
May 7 – May 24, 2013 **Lecturer: Takaaki Yuasa**

Content: Outline of Upgrading of Heavy Oil;
Hydrotreating and Hydrocracking Catalyst;
Thermal Cracking Process; IGCC Technology and
Selection of Heavy Oil Upgrading Process;
FCC & Resid-FCC Process Technology;
Hydrotreating and Hydrodesulfurization Process
Technology; FCC Catalyst Reaction Theory;
Thermal Cracking (Delayed Coker, Flexi Coker)
Unit and FCC Unit; Operation and Troubleshooting
and Decreasing Effect in Heavy Oil Production;
Developed HDS & FCC Catalyst and its Theory;
Process and Characteristics of RFCC and VRHDS
Unit; Evaluation Technology and its Results for HDS Catalyst & FCC Catalyst;
Process Simulator Practice of FCC Startup;
Linear Programming and Production Planning for Refinery

<10 countries / 15 participants>

Site visits: JGC Catalysts & Chemicals Ltd. (Kitakyushu Operation Center);
JX Nippon Oil & Energy Corporation (Marifu Refinery);
Idemitsu Kosan Co. Ltd. (Aichi Refinery); Toa Oil Co. Ltd. (Keihin Refinery)

Countries: Indonesia, Iraq, Kuwait, Myanmar, Qatar, Sudan, Thailand, Timor-Leste, Uzbekistan, Vietnam