

In the laboratory of CPERI a CD unit is been installed. The objectives of this unit is the close simulation of hydrothermal deactivation, metals deposition and cyclic nature of FCC process. The unit is being constructed by *zeton B.V.* company and the design principle is licensed from *Akzo* company.

In essence the CD unit consists of a fixed fluidized bed reactor in which the catalyst is deactivated during repeated thermal cycles of reaction, stripping and regeneration. During the reaction stage metals are deposited on the catalyst from the VGO feedstock. Volatile hydrocarbons are then stripped from the catalyst with nitrogen and/or steam and the temperature is raised to the regeneration temperature. The catalyst is regenerated with a gas mixture of steam, oxygen and nitrogen. After regeneration, the catalyst temperature is reduced to permit a new cycle of reaction, stripping and regeneration. Catalyst addition and/or withdrawal can be undertaken during the run in order to simulate the age distribution of the equilibrium catalyst and to collect catalyst samples for the determination of physical and chemical properties and catalytic performance. The metal tolerance can thus be easily determined upon progressive metals build-up and hydrothermal deactivation.