

OIL COKING

It 'well known that the "coking" in the oil industry is one of the processes preferred for the treatment of heavy residues. So in this way the heavier petroleum fractions are converted by thermal cracking into lighter products, middle distillates and coke residues.

Historically of little interest in the oil industry, in the time petroleum coke, driven by the strong spread of the coking process and the ability to make proper use of energy in different industrial applications, has reached a level of output such that today it can be considered to all effects a true product rather than an inevitable by-product.

Nevertheless the priority has to been for the full recovery of the other energy products that accompany the coking operation with a general view that foregrounds the environment.

For this purpose, the process lends itself well to slow pyrolysis, wet catalyzed at low temperatures, developed by our Company and already widely used in various applications of basic organic matrices.

Some experimental tests, conducted on a semi-industrial plant, have in fact highlighted the possibility of intervention in this way, with a simple and reliable process.

The recoverable energy is above 80% of the content of the raw material, divided roughly 50% among the light products obtained and the residual coke.

All this with operation in a closed cycle, and then without any emission neither water nor air in the specific phase of the process.

TECHNICAL NOTES

The residual coke of Algerian refineries was pyrolyzed in our demonstration-industrial pyrolysis plant at temperatures between 500°C and 700°C in the presence or absence of metal-based catalysts.

The resulting products, as expected from the numerical program developed by our Company, are made of

- syngas with a high calorific value (5/6 kW Nmc)
- oil (condensate) with P.C.I. approximately 12,000 kcal/kg
- ashes with characteristics equal to industrial pet-coke.

Syngas, once purified, can be sent to power internal combustion engines for the production of thermal and electric energy.

Condensed oil can in turn be sent to power diesel byfuel engines, simultaneously to syngas, for the production of thermal and electric energy, or restart the refinery fractionation and rectification towers, or directly used in low laps number marine type engines.

Ashes can finally find various applications, such as for example as pet-coke or better in the use of the carbon black industry or active charcoals or many others already in place with similar materials.