

IFP Energies nouvelles, a major player in the field of EOR (enhanced oil recovery)

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IFP Energies nouvelles (IFPEN) has just organized a workshop (The Chemical EOR Workshop: Key Success Factors) sur la récupération assistée des hydrocarbures (EOR) on chemical enhanced oil recovery (EOR), held from 27 to 29 May 2013 in Rueil-Malmaison and attended by more than 60 EOR managers representing around 25 oil companies. The success of the event bears testimony to the importance of this theme for oil companies wishing to optimize the production of oil and gas reserves.

Against a backdrop of growing demand and the depletion of conventional reserves, EOR is one of the major challenges for oil production. Although recovery rates vary from one field to another, the worldwide average is around 35%. Of the various possible EOR processes, the chemical method is one of the most promising, with the potential to increase recovery rates by 20%.

The workshop's participants recalled the main issues related to the development of chemical EOR:

- The need for a high level of interaction between the disciplines of geosciences, chemistry and surface engineering to ensure the success of such operations;
- Ongoing R&D to overcome the major obstacles, in particular:
 - development of chemical formulations suited to difficult reservoir conditions, such as high temperatures, high salinities, carbonates, etc.;
 - development of simulation tools on a variety of scales (laboratory, pilot, field);
 - optimization of the cycle for produced water used in the context of EOR.

Boasting over 25 years of EOR experience as well as simulation expertise, IFPEN is a key player in this field today. In 2010, IFPEN signed a strategic partnership with Beicip Franlab and Solvay (The Chemical EOR Alliance™). This alliance offers oil operators tailor-made EOR solutions, adapted to the specific characteristics of a given field.

Upstream of this industrial partnership, IFPEN aims to ensure its research is strongly positioned in this area. As part of this work, IFPEN is developing highly innovative high-throughput screening (HTS) techniques with its partner, Solvay, aimed at optimizing the EOR process in a short time.

IFPEN is also developing a complete chemical EOR module in its PumaFlow™ software on dynamic reservoir simulation. Marketed by Beicip Franlab, this software makes it possible to use the same physics from a laboratory scale to a field scale.

Finally, working in partnership with international oil industry players, IFPEN has initiated some ambitious studies designed to gain a clearer understanding of the impact of chemical EOR on surface water treatment facilities. Furthermore, this program is due to be extended from September 2013 via the launch of the DOLPHIN™ JIP (Joint Industry Project). Scheduled to last three years, this laboratory program will be open to all oil operators and will study the impact of chemical EOR on water management.

In addition to chemical recovery methods, IFPEN is also examining the development of processes combining several EOR processes, such as CO₂/chemical or thermal/chemical methods, the aim being to improve their efficiency.