



# Science@ifpen



Written on 01 May 2014



15 minutes of reading



News

Fundamental Research

Renewable energies

Biofuels and e-fuels

Sustainable mobility

Electrified Mobility

Responsible oil and gas

Enhanced oil recovery (EOR)

Analysis and characterization

Microfluidics



Identifying **interactions within complex systems** in order to describe

phenomena and understand reaction mechanisms so that they can be more selective: these are the objectives of IFPEN's Applied Chemistry and Physical Chemistry Division. The understanding and tools thus developed are essential in order to help forward the R&D projects in many fields, ranging from **transport and traditional refining to bioprocesses and upstream production and exploration**. The key to success is found in a **multiscale approach** that is applied both in modeling and experimentation.

Our researcher's expertise in the fields of **thermodynamics, physical chemistry of complex fluids, biotechnology, electrochemistry and materials** is widely recognized both nationally and internationally. They make a significant contribution to firmly establish IFPEN's scientific position, with around 45 publications per year in high-impact journals. The number of publications and citations is among the best in each of their fields: **molecular modeling, oil emulsions, electrochemistry of CO<sub>2</sub> and fungal cellulases**. The examples that follow illustrate the scientific quality of the research.

We hope that you enjoy this issue,

**Véronique Ruffier-Meray**, Director of the Applied Chemistry and Physical Chemistry Division

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## Summary:

- **Oxygen** in equations
  - More **sugar** thanks to enzymes
  - No low-salt diet for **refractory steels**
  - Better management of **batteries aging**
  - **Microfluidics**, macroadvantages!
  - **EOR and the water cycle**: towards better treatments
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