



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 inmodeling 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

## 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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