



Science@ifpen

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15 minutes of reading



News

Fundamental Research

Climate, environment and circular economy

CO2 capture, utilization and storage

Sustainable mobility

IC powertrains

Responsible oil and gas

Fuels

Petrochemicals



Simulation and experimentation are two interconnected activities which are central to the

research work carried out at IFP. The development of tools for **simulation and modeling** purposes – the results of which are subsequently compared with experimental data – makes it possible to represent and gain a better understanding of complex mechanisms, to reduce development times and to predict behavior.

This approach has proved successful in many of IFP's research fields (**combustion, catalysis, CO₂ storage**, etc.), as demonstrated by the scientific results presented by our researchers in this issue. What's more, two of them are winners of the Yves Chauvin thesis prize, awarded each year to IFP's best PhD student.

Their research work, together with that of their colleagues, opens up new opportunities for innovation in the key fields of energy, transport and the environment.

Summary:

- **Combustion** is laying the table!
 - **Modelica**, towards a standard for 0D/1D simulation?
 - **Zeolites** on demand?
 - Pseudo-Bridging **Silanols** revealed
 - Improving **CO₂ storage** using molecular simulation
 - Using noble gases **to trace CO₂**
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