

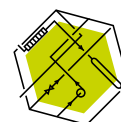
#ChemicalProcesses
#ProcessSafety

LSPC

« Laboratoire de Sécurité
des Procédés Chimiques »

lspc.insa-rouen.fr

RESEARCH
laboratory



LSPC
Laboratoire
de sécurité
des procédés
chimiques

Staff over

35

Founded in

1989

Nearly

20
PhD students

The LSPC is a host team (EA 4704) INSA Rouen Normandie and University of Rouen Normandie. It is backed by three engineering courses, two «IUT» courses, two masters from INSA Rouen Normandie and the University of Rouen Normandie. The LSPC is attached to the PSIME doctoral school.

Research fields

- ✓ Process safety
- ✓ Biomass valorization and green chemistry
- ✓ CO₂ capture and valorization
- ✓ Microwave-Assisted Processes

Application areas



Energy



Bio-refinery



Environment



Green processes

Know-how and expertise

✓ Process safety

Characterization of reaction media by reaction calorimetry, thermal runaway prevention, safety and stability of chemical reactors.

✓ Microwave-Assisted Processes

Design of microwave reactors for intensified processes, behavior of multiphase media under microwaves, characterization and modeling of wave-matter interactions, applications in green chemistry.

✓ Biomass valorization

Study of biomass as a renewable source, thermochemical methods of valorization. Epoxidation and carbonation of vegetable oils. Production of green additives for fuels...

✓ Capture and valorization of CO₂

CO₂ capture by reactive absorption, kinetics of gas-liquid transfer. Chemical valorization of CO₂; carbonation, hydrogenation of CO₂ ...

🔗 A wide range of collaborations

The LSPC collaborates with many academic and industrial partners: Veolia Environnement, IFPEN, ARKEMA, BASF, Chevron Oronite, Oril ... whether local, national or international: Italy, Finland, Ireland, Belgium, Algeria, Morocco, Dominican Republic, India, China ... The LSPC participates in multiple research projects (ANR, ERDF, INTERREG, RIN ...) and is strongly involved in regional research: EP2M and CTM clusters.

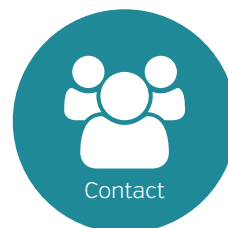
Facilities

- * Instrumented absorption-desorption pilotes with packed and spray columns
- * Microwaves-assisted reactor benches with 2.45 GHz and 915 MHz, vector network analyzer
- * Reactor benches: with thermal balance for liquid phase reaction, under pressure for hydrogenation or carbonation, catalytic gas-solid reaction ...
- * Installations for pyrolysis / gasification of biomass with online analysis of gas products
- * Instrumented Lewis cells
- * Calorimetric reactors: 2 Mettler RC1 and 1 Mettler RC1E under pressure, 3 adiabatic reactors (2 ARC and 1 ARSST)
- * Microcalorimetry (DSC), thermogravimetry TGA, Calvet calorimeter C80
- * Modeling tools: MATLAB, ASPEN, Fluidyn, COMSOL, cyclone ...

Keep in mind

INSA Rouen Normandie is the first public engineering technical university of Normandy. The 10 different engineer education tracks, the 7 masters in research and the 2 masters in applied sciences are deeply connected to its 8 research laboratories.

INSA Rouen Normandie provides five education tracks directly connected to the LSPC lab: engineer in industrial risk management, engineer in fine chemistry, engineer in performance in innovation and process safety, energy research master, specialized Master in environmental rehabilitation.



Contact

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