Reactor design and multiphase flow modelling

ECTS
5 crédits

Hourly volume
63h

Toulouse

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain the use and the development of conservation equations describing multiphase systems. He will be initiated to the multiscale approach for process engineering in three steps:
- Knowledge integration from local entity (inclusion, pore, interface) to the multiphase process.
- Development of closure relations from isolated object to dense media with interactions.
- Sensitivity to scale up and scale down criteria in function of time and space range (heterogeneity, one way/two way or no coupling problems).

The student will be able to ;
- Choose the right scale to describe the multiphase process and the appropriate tool to design the reactor.
- Incorporate transport phenomena and couple them in consistency with the chosen scale
- Simulate the multifunctional behaviour of multiphase system (work project) and insure the value of the results by balance estimation.

Practical info

Location(s)