Université de Toulouse
Institute of Fluid Mechanics

C. Colin

12 permanent members
20 Post-Docs and PhD's

Main research activities

Two phase flows

Transfers (heat and mass)

Wetting

Analytical equipments and tools

Hele shaw cell for bubble dynamics and mass transfers, high speed camera and image analysis

AFM, Image processing, CFD (computational fluid dynamics)

Air lift (bubble injection through capillaries), generation of horizontal two phase flows

Challenges

Bubble growth and detachment on surfaces with variable wettability

Numerical simulation of boiling bubbles on walls

Nano dynamics of fluids, nano wetting

Experiments on bubble growth and detachment (funded by ESA and Univ. of Toulouse)

Experiments on ground and in micro-g conditions

ESA project - CBC and MAMBO

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

Analytical modelling and CFD simulations of growing bubbles at walls (funded CNES/CNRS)

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

Numerical code : DIVA (IMFT)

Bubble growth on a heated wall

Simulation of two phase flows

with phase change

Bubble growth in an overheated liquid

Nanofluid characterization (funded by ministry of research)

Measurement of the dielectric permittivity of nanofluids

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

Measurement of the Hamaker constant at nanoscales