Welcome

Welcome to the website of the Virtual International Research Institute of Two-Phase Flow and Heat Transfer or VIR2AL. You can find a short summary of our mission and objective below. A more detailed description of our objectives can be found on the Mission and Objectives page. You can also find more information on the members of the Virtual Institute at the Members of the Virtual Institute page. If you are interested in images and movies representative of some of the two-phase research performed by our Members, you can find these on the Images and Movies page.

Mission and Objectives

The mission of VIR2AL is to improve and foster international collaboration between world class two-phase flow and heat transfer laboratories around the world. The main objectives can be summarized as:

1. Sharing and preserving of experimental and numerical data sets:
   - Experimental data sets of two-phase flow characteristics such as flow transitions, pressure drop, etc
   - Experimental data sets of two-phase heat transfer characteristics such as heat transfer coefficients, critical heat flux, etc
   - Particle Image Velocimetry (PIV) and Particle Shadow Velocimetry (PSV) flow field data sets
   - Numerical simulation data sets of two-phase flow and heat transfer characteristics
2. Development of smart flow pattern maps
3. Improving two-phase flow education
4. Organizing an annual research meeting and workshop for members
5. Student and staff exchange, including visitor programs
For a more elaborate description of the objectives please visit the Mission and Objectives page.

Members
The members of VIR2AL come from all over the world. A list of participating institutions:

- École Polytechnique Fédérale de Lausanne (EPFL)
- University of Ljubljana
- Kobe University
- Tel Aviv University
- Massachusetts Institute of Technology (MIT)
- Helmholtz-Zentrum Dresden-Rossendorf (HZDR)
- University of California, Los Angeles (UCLA)
- University of Wisconsin-Madison
- University of Pisa
- University of São Paulo
- Federal University of Santa Catarina (UFSC)
- University of Udine
- Université Claude Bernard Lyon 1
- University of Maryland
- University of Manchester
- Institut National des Sciences Appliquées de Lyon (INSA-Lyon)
- State University of Rio de Janeiro (UERJ)
- Brunel University London (TPHT)
- University of Padova
- Delft University of Technology (TU Delft)
- Georgia Institute of Technology (Georgia Tech)

Information on the executive committee of the institute can be found at the Executive Committee page. More detailed information on the institute's members can be found at the Members of the Virtual Institute page.

Becoming a Member
Members of VIR2AL enjoy exclusive access to many two phase numerical and experimental data sets, are invited to the annual research meeting and can partake in the student and staff exchange.

New member admission is frozen until further notice.

Upcoming event: 18th Multiphase Flow Conference and Short
Course -Simulation, Experiment and Application-

9-13 November 2020, Dresden, Germany

The Virtual International Research Institute of Two-Phase Flow and Heat Transfer is partner of this annual workshop on multiphase flows. The goal of the workshop was to bring together experimental and numerical practitioners, and to foster discussion and exchange of knowledge. Experts from both areas are called upon to present their research and application results to a worldwide audience. Topics of interest include:

- **Simulation technology for multiphase flows**
  - Phase interaction models
  - Turbulence models
  - Solution algorithms
  - Multi-scale modelling techniques
- **Application of simulation methods to multiphase flow problems**
- **Experimental investigations of multiphase and magnetohydrodynamic flows**
- **Measurement methods for multiphase and magneto-hydrodynamic flows**

The workshop is divided into two parts: starting with two days of Short Course, two more days of Conference follow.

Visit the official website to get further information.

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10th International Conference on Multiphase Flow (ICMF2019)

19-24 May 2019, Rio de Janeiro, Brazil

The Virtual International Research Institute of Two-Phase Flow and Heat Transfer is an official supporter of ICMF2019 to be held in Rio de Janeiro, Brazil, from 19 to 24 May, 2019 at Windsor Barra Hotel. Experts and professional researchers from all over the world will attend and make presentations of their research results and recent advancements. It will be a great opportunity to share and promote the exchange of new ideas, results and techniques, but also to extend social networking.
4th Workshop on Advances in CFD, LB and MD Modeling of Capillary Two-Phase Flows and Experimental Validation

16-19 May 2019, Rio de Janeiro, Brazil

We are happy to present this Workshop on the latest advances in the computational modelling of the interfacial dynamics of capillary two-phase flow phenomena using Computational Fluid Dynamics (CFD), Lattice Boltzmann (LB) and Molecular Dynamics (MD) methods. In addition, experimental two-phase flow visualization techniques will presented. The Workshop is now at its 4th edition, following the first two editions in 2016 and 2017 that took place at the EPFL in Lausanne, Switzerland, and the 2018 edition at Kobe University, Japan. The Workshop precedes ICMF 2019, that will be held in Rio de Janeiro on 19-24 May, see Upcoming event above.

Further information can be found at the Events page.