

Gas-liquid flow CFD module, GLFLOW, for modeling complex gas-liquid flows

An advanced special-purpose gas-liquid flow CFD module, GLFLOW, has been developed and validated by ACFDA via customizing the general-purpose CFD software, PHOENICS. It is available for client applications in studies of complex gas-liquid flows with various flow regimes and heat and mass transfer.

The GLFLOW module capabilities include the following: the capability to deal with different gas-liquid flow regimes (from bubbly flow to separated flow) using customized variable bubble size correlations and/or population balance approach; the use of customized two-phase turbulence models; the use of distributed resistance approach for treating complex blockages inside the computational domain; modeling the effect of internal heat exchanger on two-phase heat transfer; modeling the phase inversion effect, etc.

A brief description of basic GLFLOW version, GLFLOW1, is available on http://www.acfda.org/docs/GLFLOW1_brief.pdf. Also, a real-life application of modeling approach is shown on <http://www.acfda.org/docs/ASME2006-98355.pdf>.

Please contact info@acfda.org if you are interested in applying GLFLOW module and/or ACFDA experience for your modeling needs.