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ANNOUNCEMENTS

TWO-PHASE GAS–LIQUID FLOW SHORT COURSE: PRINCIPLES FOR MODELLING GAS–LIQUID FLOW

Department of Chemical Engineering, University of Houston,
Houston, TX 77204-4792, U.S.A.

12–16 February 1990

Description

The basic framework for modelling a wide variety of gas–liquid flow problems is now well-understood, much having been completed in recent years. This course will present this modern approach in sufficient detail so that those attending can apply the results to problems of design. In addition, this should prepare the participant to understand the new literature which emerges in the years to come.

This method first predicts the flow pattern. Then for each pattern, the flow behavior is modelled. Once this is done the modelling is extended to solve problems of heat and mass transport. Reliable data is important to an understanding of the mechanisms of two-phase flow. For this reason, the course reviews some modern measuring methods as well as recent data.

The extensive facilities of the two-phase flow research laboratory will be made available to participants. Demonstrations will be conducted in the two-phase flow loops and special instrumentation techniques will be shown with hands on experiments. Interaction with the research team will be possible. Problem sessions are included in which the ideas developed in the course are applied to design. Extensive course notes and references on all materials presented will be provided.

Lecturers

A. E. Dukler, Ph.D. (Delaware), Professor of Chemical Engineering, University of Houston.
Y. Taitel, Ph.D. (Delaware), Professor, Department of Fluid Mechanics and Heat Transfer, Tel-Aviv University, Tel Aviv, Israel.

Arrangements

The course fee is $800.00, including notes, coffee and a class dinner. Accommodation is available at a nearby hotel. Information sent on request.

Checks should be made payable to **University of Houston TPF Course,** and should be sent with your reservation to:

Mrs Pat Cooks
University of Houston
Department of Chemical Engineering
Houston, TX 77204-4792, U.S.A.

SHORT COURSES
on
MULTIPHASE FLOW AND HEAT TRANSFER: BASES AND APPLICATIONS IN (A) THE NUCLEAR POWER INDUSTRY AND (B) THE PROCESS INDUSTRIES

Hosted by
Swiss Federal Institute of Technology (ETH), Zurich, Switzerland

19–23 March 1990

The modular courses feature coordinated, comprehensive series of lectures by experts and are of interest to practising engineers and to researchers who wish to obtain a condensed and critical view of present basic

knowledge (Part I) or information on the state-of-the-art regarding applications in specialized industries (Parts IIA and IIB).

The courses aim at an interdisciplinary transfer of knowledge. Applications cover nuclear and chemical plant safety, steam generators, pipelines, etc.

The lecturers

Sanjoy Banerjee, Professor at the Department of Chemical and Nuclear Engineering, University of California, Santa Barbara, U.S.A. Also a Visiting Professor at the Swiss Federal Institute of Technology in Zurich (ETHZ).

Gad Hetsroni, Danciger Professor of Engineering at Technion—Israel Institute of Technology. Currently, a Visiting Professor at the University of California, Santa Barbara, U.S.A.

Geoffrey F. Hewitt, Head of the Thermal Hydraulics Division at the Harwell Laboratory and Professor of Chemical Engineering at the Imperial College of Science and Technology, London, England.

George Yadigaroglu, Professor of Nuclear Engineering at the Swiss Federal Institute of Technology in Zurich (ETHZ) and head of the Thermal-Hydraulics Laboratory at the Paul-Scherrer Institute (formerly EIR), Switzerland.

Contents of lectures

Part I. Bases

1. Introduction
2. Basic equations I
3. Flow regimes
4. Measurement and correlation of void fractions
5. Measurement and correlation of pressure gradient
6. Two-phase flow in vertical pipes
7. Two-phase flow in horizontal and inclined pipes
8. Basic equations II
9. Two-phase heat transfer I
10. Two-phase heat transfer II
11. Closure relationships
12. Numerical methods

Part IIA. Water Reactor Applications

13A. Steady-state operation
14A. Large break LOCAs
15A. Small break LOCAs
16A. Codes for transient and accident analysis
17A. Severe accidents
18A. Steam generators

Part IIB. Process and Petroleum Industry Applications

13B. Multicomponent heat and mass transfer
14B. Emergency relief system vent sizing
15B. Process boilers and condensers
16B. Relief ducting and treatment
17B. Pipelines
18B. Dense gas and mist dispersions

For further information contact:

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