Int. J. Multiphase Flow Vol. 18, No. 6, pp. I–IV, 1992
Pergamon Press Ltd. Printed in Great Britain

ANNOUNCEMENTS

SHORT COURSES

on

MULTIPHASE FLOW AND HEAT TRANSFER: BASES, MODELING AND APPLICATIONS IN (A) THE NUCLEAR POWER INDUSTRY AND (B) THE PROCESS INDUSTRIES

Hosted by

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

22–26 March 1993

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, modeling and numerical techniques (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 this year cover nuclear and chemical plant safety (with an emphasis on severe accidents), steam generators, oil–gas transport etc.

The lecturers

Sanjoy Banerjee, Professor at the Department of Chemical and Nuclear Engineering, University of California, Santa Barbara, U.S.A.

Michael L. Corradini, Professor of Nuclear Engineering and Engineering Physics at the University of Wisconsin, Madison, U.S.A.

Gad Hetsroni, Danciger Professor of Engineering at Technion—Israel Institute of Technology, Haifa, Israel.

Geoffrey F. Hewitt, Professor of Chemical Engineering at Imperial College, London, England.

Stephen M. Richardson, Reader in Chemical Engineering at Imperial College, 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, Switzerland.

Contents of lectures

Part I. Bases (3 days)

1. Introduction and basics
2. Basic equations
3. Flow regimes, pressure drop and void fraction
4. Phenomenological modeling: continuous flow
5. Phenomenological modeling: intermittent flow
6. Closure relationships
7. Two-phase heat transfer
8. Post-dryout heat transfer
9. Numerical methods
10. Multidimensional modeling
11. Computer codes
12. Instabilities in two-phase flow

Part IIA. Water Reactor Applications ($1\frac{1}{2}$ days)

13A. LOCA phenomena
14A. Severe accidents
15A. Codes for transient and accident analysis

16A. Severe accident codes
17A. Steam generators
18A. Vapor explosions

Part IIB. Process and Petroleum Industry Applications ($1\frac{1}{2}$ days)
13B. Two-phase flow in pipelines
14B. Emergency relief system vent sizing
15B. Oil/water/gas flows: characteristics and measurement
16B. Dense gas and mist dispersions
17B. Transient multiphase multicomponent releases
18B. Fires and explosions

For further information contact:

Professor G. Yadigaroglu
ETH-Zentrum, CLT
8092 Zurich, Switzerland
Tel.: (41-1) 256.4615
Fax: (41-1) 262.2158

ADVANCED STUDY INSTITUTE

on

UNSTEADY COMBUSTION

Praia da Granja, Espinho, Portugal
6–17 September 1993

Objectives

To communicate information on the relative merits of forms of unsteady combustion with emphasis on practical applications, such as industrial burning equipments, ramjets and internal combustion engines, and to provide a forum for the discussion of new ideas and their application to the design of advanced combustion systems. Attention will be placed on the requirements for the development of low-emission equipments and the use of experimental and computational techniques to achieve this objective.

Organizing committee

F. E. Culick, California Institute of Technology, 201 Karman Laboratory, Mail Stop 301-45, Pasadena, CA 91125, U.S.A.

M. V. Heitor, *Director*, Instituto Superior Técnico, Department of Mechanical Engineering, Av. Rovisco Pais, 1096 Lisboa Codex, Portugal.

J. H. Whitelaw, Imperial College of Science, Technology and Medicine, Department of Mechanical Engineering, Exhibition Road, London SW7 2BX, England.

Programme

1st week

- Fundamentals of unsteady combustion
- Modern diagnostics for combusting flows
- Current scenario and future trends in the modelling of combusting flows
- Unsteady combustion devices
- Enhanced heat and mass transfer
- Environmental applications
- Gas turbine combustion and the performance of augmentators