



**PAKISTAN INSTITUTE OF  
ENGINEERING AND APPLIED  
SCIENCES (PIEAS)**

**DEPARTMENT OF NUCLEAR  
ENGINEERING**



**Offers a workshop for  
researchers, scientists, engineers and  
students  
on**

## **Nuclear Severe Accident Modeling and Simulation**

**Duration:** 07-11 November, 2022

**Venue:** PIEAS, Nilore, Islamabad

### **About PIEAS**

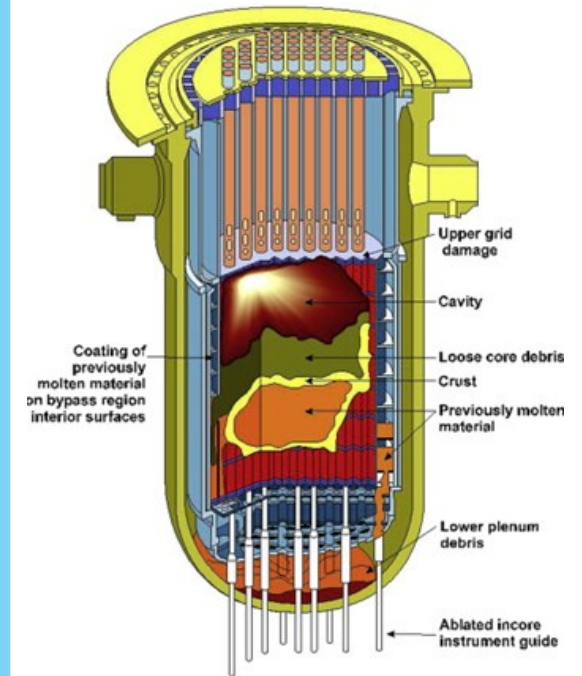
PIEAS was established as the Reactor School in 1967. In 2000, the institution changed its name to "Pakistan Institute of Engineering and Applied Sciences (PIEAS)" and became the degree awarding institution. PIEAS is now recognized both nationally and internationally as the institute of academic excellence. With the highly qualified faculty and superb facilities, PIEAS is providing top-notch education in the fields essential to Pakistan's technological advancement.

### **Significance and Aim of the Workshop**

Since the Fukushima disaster, severe accident (SA) modeling and simulation has become an essential requirement for the design, licensing, and operation of nuclear power plants. Simulations of nuclear reactor accidents are very helpful in understanding the SA stages, halt their progression, and develop severe accident management guidelines. The workshop's goal is to provide engineers, scientists, and professional working in the nuclear industry a platform to learn new skills and build their SA modeling and simulation capacities through hands on training. It would give the participants an opportunity to discuss about their specific challenges and issues related to the SA modeling and simulations.

### **WORKSHOP ON**

## **Nuclear Severe Accident Modeling and Simulation**



### **Organizing Committee**

**Dr. Naseem Irfan**, Pro-Rector, PIEAS  
**Dr. Aman Ur Rehman**, Head, DNE, PIEAS  
**Dr. Muhammad Ilyas**, PS, DNE, PIEAS  
**Dr. Masroor Ahmad**, PS, DNE, PIEAS  
**Dr. Amjad Farooq**, PE, DNE, PIEAS  
**Mr. Rab Nawaz**, SE, DNE, PIEAS

## Specific Objectives

1. Introduction to severe accident simulation codes
2. Analysis of anticipated and design basis accidents in research and power reactors
3. Fukushima severe accident analysis
4. Evaluation of in-vessel corium retention through external reactor vessel cooling mechanism
5. Best estimate and uncertainty analysis
6. Code development for new reactor designs

## Resource Persons

**Dr. Raimon Pericas,**  
Associate Professor,  
Universitat Politècnica de Catalunya, Spain.

He received his PhD in the field of Nuclear Engineering from the Universitat Politècnica de Catalunya in 2015. He has been providing consultancy to Innovative System Software (ISS), USA since 2011. He has conducted several international trainings and workshops on RELAP5/SCDAP. His research interests include coupled neutronics/thermal hydraulic analysis, reactor physics, core design, and development of nuclear simulation computer code and their validation activities. He published several papers in international journals and international conferences.

**Mr. Shaukat Ali,**  
Nuclear Safety Analyst,  
Pakistan Atomic Energy Commission

He did MS Nuclear Engineering from PIEAS before joining PAEC in 1994. Since then, he is working as the nuclear safety analyst in different PAEC projects. He has vast expertise in severe accident analysis and safety assessment of active/passive systems for mitigation of SA. Recently, he is working on advanced uncertainty and sensitivity methodologies for improvement in SA analysis in nuclear industry.

**Dr. Muhammad Ilyas**  
Associate Professor,  
Department of Nuclear Engineering, PIEAS

He did MS Nuclear Engineering from PIEAS in 2003. On the basis of his excellent academic performance, he was offered to join PIEAS as a faculty member after his MS. He did PhD from Imperial College London, UK (2007-11) and Postdoc from Centre for Advanced Energy Studies, Idaho Falls, USA (2016-17). He got RELAP5/SCDAP advanced users and model development training from ISS, Idaho Falls, USA. He is actively involved in teaching and research in the field of nuclear reactor safety. He has published a number of research papers in international journals/conferences. He has participated in several IAEA's technical/consultation meetings and international conferences.

## Registration/Nomination Form

Name of the applicant: \_\_\_\_\_

PIN/CNIC: \_\_\_\_\_

Designation: \_\_\_\_\_

Department: \_\_\_\_\_

Institution/Organization: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Phone (office): \_\_\_\_\_

Phone (Cell): \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Demand Draft/P.O. No.: \_\_\_\_\_

Drawn on (Bank): \_\_\_\_\_

Amounting to Rs.: \_\_\_\_\_

**Rs. 8000/- per person (for regular participants)**

**Rs. 4000/- per person (for students)**

(This will cover course material/folder, lunches, teas and other expenses related to the course organization)

*Note: Photocopy of this form is also valid*

**Registration Deadline: October 25, 2022**

Please send the completed form to the organizing committee on or before the due date.

**Focal Person:**

**Dr. Muhammad Ilyas, PS, DNE, PEIAS**

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