

## Pakistan Institute of Engineering and Applied Sciences (PIEAS)



offers

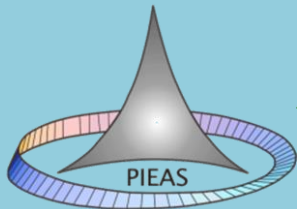
a workshop for young researchers, scientists, engineers and students on

### Advanced Simulation in Thermal Hydraulics NPP System Code RELAP5/SCDAP

Organized by Department of Nuclear Engineering, PIEAS in collaboration with Center for Mathematical Sciences (CMS), PIEAS

#### Organizing Committee:

**Dr. Naseem Irfan, Dean Engg, PIEAS**  
**Dr. Tariq Majeed, Head DNE, PIEAS**  
**Dr. Shaikh Qamar, Director CMS, PIEAS**  
**Dr. Muhammad Ilyas, PS, DNE, PIEAS**  
**Dr. Masroor Ahmed, PS, DNE, PIEAS**  
**Dr. Nadeem Shaukat, SS, CMS, PIEAS**  
**Mr. Rizwan Ali, SE, DNE, PIEAS**  
**Mr. Awais Zahur, SE, DNE, PIEAS**  
**Mr. Rab Nawaz, SE, DNE, PIEAS**



#### About PIEAS

PIEAS was founded in 1967 as Reactor School. The institute gained university status in 2000 and its name was changed to “Pakistan Institute of Engineering and Applied Sciences (PIEAS)”. The university has been ranked as top institution for engineering studies in Pakistan by the Higher Education Commission (HEC), in the years 2006, 2010 and 2013. PIEAS has also been ranked as No. 1 engineering university of Pakistan in the QS Asian Rankings 2014 and 2015.

#### Faculties and Departments:

##### Faculty of Engineering

- Department of Nuclear Engineering
- Department of Chemical Engineering
- Department of Electrical Engineering
- Department of Mechanical Engineering
- Department of Metallurgy & Material Engineering

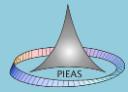
##### Faculty of Sciences

- Department of Medical Sciences
- Department of Computer & Information Sciences
- Department of Physics and Applied Mathematics
- Department of Communication & Mangt. Sciences
- Department of Chemistry
- Center for Mathematical Sciences

#### About RELAP5

RELAP5 (Reactor Excursion and Leak Analysis Program) is the most widely used Nuclear Power Plant (NPP) system code for thermal and hydraulic analysis of Light Water Reactors (LWRs). The version RELAP/SCDAP with extended part on Severe Core Damage Analysis Program (SCDAP) developed by Innovative Systems Software (ISS) is used in more than 30 countries in the world for the design and safety analysis of power and research reactors, advanced fluid systems, and experiments. The capabilities and salient features of the software include: (a) it is a state-of-the-art tool to simulate wide range of design basis and severe accidents (b) its point reactor kinetic model enables coupled behavior of the reactor coolant system and reactor core during severe accidents as well as large and small break loss-of-coolant accidents, and (c) it offers the capability of addition of new coolants for advanced reactor and fluid systems by implementing fluid properties and correlations in the code.

Pakistan Institute of Engineering and Applied Sciences

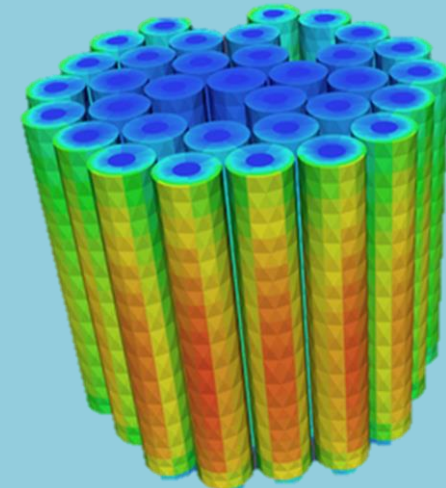


NATIONAL WORKSHOP ON

### Advanced Simulation in Thermal Hydraulics with NPP System Code RELAP5/SCDAP

02 -06 July, 2018

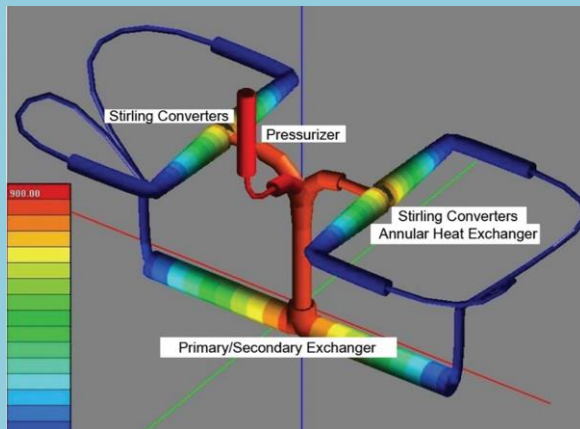
Venue: PIEAS, Nilore, Islamabad



**Registration Deadline: June 08, 2018**  
**Registration Fee: Rs. 8000/-**

## Contents to be Covered

- General and advanced users tutorials for steady-state and transient analyses of research and power reactors
- Investigation of thermal-hydraulic response of the plant systems under anticipated transients and design basis accidents
- Modeling phenomenological problems and natural circulation passive safety system and its evaluation in removing decay heat in integral type PWRs
- Thermal-hydraulic coupling of containment and primary system during accidents
- Investigation of severe core damage, and sensitivity analysis of different core degradation parameters and models to study their effect on severe core damage progression
- Modeling new coolants in RELAP5 for thermal-hydraulics analysis of advanced SMRs and Gen-IV reactors



## Resource Persons

- **Dr. Raimon Pericas**, Associate Professor, Universitat Politècnica de Catalunya (UPC), Spain. He received his PhD in the field of Nuclear Engineering from the same university 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 are 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.
- **Dr. Muhammad Ilyas**, Assistant professor at Pakistan Institute of Engineering and Applied Sciences. He did his PhD from the Department of Mechanical Engineering, Imperial College London, UK in the field of reactor thermal-hydraulics in 2011. He spent one year as a visiting faculty at the University of Idaho, USA. He also got training on RELAP5/SCDAP advanced users and model development from ISS at Idaho Falls. He has more than 15 years of experience in teaching and research. He participated in several international conferences to present his research work and published several papers on thermal-hydraulics of Nuclear Power Plant Systems in international journals.

## NATIONAL WORKSHOP ON ADVANCED SIMULATION IN THERMAL HYDRAULICS WITH NPP SYSTEM CODE RELAP5/SCDAP 02-06 JULY, 2018 VENUE: PIEAS, NILORE, ISLAMABAD

### Registration/Nomination Form:

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

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

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

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

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

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

Permanent 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)

**Please send the completed form (also available at [www.pieas.edu.pk](http://www.pieas.edu.pk)) to Dr. Muhammad Ilyas, PS, Department of Nuclear Engineering, PIEAS, ([milyas323@gmail.com](mailto:milyas323@gmail.com)), Tel: 051-9248611 Ext. 3326, Dr. Masroor Ahmad (Ext. 3317), or Mr. Awais Zahur (Ext. 3621), Fax: 051-9248600, Nilore, Islamabad, along with the demand draft in favor of Director Finance, PIEAS.**

*(Photocopy of this form is also valid)*