

Topics:

- ❖ *Fundamentals of Fluid Mechanics*
- ❖ *Steady and unsteady flow*
- ❖ *Laminar and turbulent flow*
- ❖ *Newtonian and non-Newtonian flow*
- ❖ *Pulsatile flow*
- ❖ *Overview and purpose of CFD*
- ❖ *Different Numerical Methods*
- ❖ *Grid generation*
- ❖ *Discretization by FDM and FVM*
- ❖ *Blood Rheology*
- ❖ *Turbulence in Cardiovascular Disease*
- ❖ *Compressible flow*
- ❖ *Human Physiology*
- ❖ *Different applications of Bio-fluid dynamics*
- ❖ *Thermo-fluid dynamics of respiratory flows.*
- ❖ *Simulation of Flow in Stenosed Blood Vessels*
- ❖ *Magnetically targeted drug delivery - promises and challenges*
- ❖ *Biomicrofluidics*

Advisory Board:

- Prof. S.L. Dutta (Director-CEMK)
- Mr. B.K. Basu Roy Chowdhury (Registrar-CEMK)
- Prof. S. N. Bhadra (CEMK)
- Prof. S. R. Deb, (Member-Governing body-CEMK)
- Prof. G. Biswas (Director ,CMERI)
- Prof. A. Datta (JU)
- Prof. S. Chakrabarty (BESUS)
- Prof. S. Chakrabarty (IIT-KGP)
- Dr. Himadri Chattopadhyay, (JU)
- Dr. N.N.Jana (CEMK)
- Dr. Saibal Pradhan (CEMK)
- Dr. Nira Konar (CEMK)
- Prof. A. Bhattacharya (CEMK)

Accommodation and Hospitality

Guest house and hostel accommodation for the participant will be made and food will be arranged by the organizers.

Travel:

The selected participants would be reimbursed to and fro 2nd Class railway fare.

Deadlines:

Receipt of application: 25th December 2011.

Confirmation for the selected candidates: 26th December 2011

Address for Correspondence

Patron:

Dr. S.L. Dutta Director-CEMK

Convenor:

Dr. Dipak Kumar Mandal, HOD, ME

Co-ordinators:

Sri T. K. Pal (9434629454)

Sri. Sudip Bandyopadhyay (9007122004)

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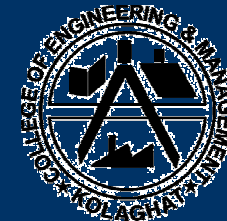
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National Workshop

on

CFD and it's application in Bio-Fluid Dynamics

(NWCbfd'12)



Sponsored by

AICTE, DST & DBT

Organized by

Department of Mechanical Engineering

(2nd - 4th January 2012)

**College of Engineering and
Management, Kolaghat ,
Purba Medinipur, West Bengal (INDIA), 721 171.**

Introduction:

Computational fluid dynamics (CFD) is one of the branches of fluid mechanics that uses numerical methods and algorithms to solve and analyze problems related to fluid flows. Bio-fluid Dynamics involves correlation among several disciplines like fluid mechanics, computational biology, human physiology, as well as molecular and developmental biology, etc. The computation and modeling of fluid-solid interactions reveal complex relationships among wall visco-elasticity, fluid viscosity and fluid velocity in many parts of the human body, including the circulatory, lymphatic, ocular and pulmonary systems.

The theme of the workshop is to highlight the CFD and its application in bio-fluid dynamics. Foundations of fluid dynamics as applied to biological systems with common arterial diseases, organ systems, targeted drug delivery, and stent-graft implants will be explored through this workshop. This will give the idea to solve basic bio-fluids-related problems, gain new physical insight, and analyze bio-fluid dynamic aspects of biomedical systems.

The workshop will provide an ideal platform and excellent opportunity for researchers from Academia, Research and Medical Institutions, and Industry, to explore the state of the art of Experimental, Computational and Clinical Bio-Fluid dynamics and to exchange their research ideas and practical experiences.

Background:

The College of Engineering and Management, Kolaghat has been developed in the integrated complex of Kolaghat Thermal Power Station of the West Bengal Power Development Corporation Limited, a premier power generation company in India and has a close institute-industry partnership with the energy sector. It is well connected with Kolkata which is only 59 Kms away by the south eastern railways, and lies at the junction of Kolkata-Mumbai and Kolaghat-Haldia National Highways.

Speakers:

- ❖ *Prof. S. R. Deb, (Member-Governing body-CEMK, Ex. Prof., JU)*
- ❖ *Prof. Gautam Biswas (Director, CMERI, Durgapur)*
- ❖ *Prof. Suman Chakraborty (IIT, KGP)*
- ❖ *Dr. Nirmal Kumar Manna (JU),*
- ❖ *Dr. Somnath Chakrabarti (BESUS)*
- ❖ *Prof. B. N. Datta (BESUS)*
- ❖ *Dr. Dipak Kr. Mandal (CEMK)*
- ❖ *Dr. Susmit Bhattacharya (AMRI Kolkatta)*
- ❖ *Dr. Biswajit Bhattacharya, (R.G. Kar Medical College & Hospital, Blood Bank)*
- ❖ *Dr. Himadri Chattopadhyay (JU)*
- ❖ *Prof. Rangan Ganguly (JU)*
- ❖ *Prof. Moley Kr. Banerjee (Future Institute of Technology)*

Eligibility:

The participant may be a teaching faculty, industry personnel, and researcher from any research organization or student from any institute.

***National Workshop on
CFD and its application in Bio-Fluid Dynamics
(NWCBFD'12)
(2nd - 4th January 2012)***

Registration Form

(To be written as per prescribed format or in plain paper clearly mentioning)

Name:

Designation:

Qualification:

Organization:

Mailing Address:

Phone No.:

Fax :

Cheque/Demand Draft No.,

Issuing Bank,

Amount in Rs.,

Food Habits (Veg/Non-veg),

Signature with Seal of Head of the
Institute/Department.

Registration Fees:

For Industry: Rs: 500,

For Academician: Rs: 300

For Students: Rs: 100

Remittances may be made by cheque/DD drawn in favour of College of Engineering and Management, Kolaghat payable at Mecheda.

(Registration fees include workshop lunch and dinner)