REGISTRATION FORM

Department of Mechanical Engineering
National Institute of Technology Karnataka, Surathkal
TEQIP-II Sponsored Two-day National Workshop on

BioFluid Dynamics and Bioheat Transfer

20 – 21 February 2017

Name (in Block letters):
Designation:
Highest Qualification:
Department:
Mailing Address:

Mobile: Email:
Experience-Teaching/Industry/Research:
Accommodation required? YES / NO

DECLARATION BY THE PARTICIPANT

The information furnished above is true to the best of my knowledge. If selected, I shall attend the programme for the entire duration. I also undertake the responsibility to inform the Coordinator sufficiently in advance, in case I am unable to attend the programme.

Date: Signature of Applicant

SPONSORSHIP CERTIFICATE

Certified that Dr./Mr./Ms ....is an employee/student of our institute and is hereby permitted to attend the Two-day National Workshop on "*BioFluid Dynamics and Bioheat Transfer*", if selected.

Place: Signature (with seal)
Date: Head of the Institution

Two-day National Workshop on

BioFluid Dynamics and Bioheat Transfer

20 – 21 February 2017

Sponsored by TEQIP–II

Coordinators

Dr. ANISH S
Dr. AJAY K YADAV
Dr. RANJITH M
Dr. ARUN M

Organized by

Department of Mechanical Engineering
National Institute of Technology Karnataka
Surathkal, Srinivasnagar P.O., Mangalore-575 025
www.nitk.ac.in

HOW TO REACH NITK

Being situated right on the NH-66, the Institute is very well connected by bus routes to the North and South of India. Mangalore is also connected by NH-48 to Bangalore and there are a number of luxury buses plying daily between Mangalore and Bangalore all through the day. Surathkal, on the Konkan Railway line (linking Mumbai to Kanyakumari), is the nearest railway station and is a stopover for most trains passing through Konkan Railway. While Surathkal and Kankanady (Mangalore Jn.) are the closest alighting points for visitors coming by train from north. Mangalore Central is the terminus for many trains from South India. The Mangalore (Bajpe) airport is just 20 km from the campus.

IMPORTANT DATES:

Last date for receipt of application: **15th Feb, 2017**
Intimation about selection: 17th **Feb, 2017**
(Only through e-mail)
Last date for confirmation by participant: **17th Feb, 2017**

CONTACT INFORMATION:

Please address all communications to the Coordinator

Dr. Anish S,
Assistant Professor,
Department of Mechanical Engineering,
NITK Surathkal,
Srinivasnagar Post, Mangalore-575 025,
Mobile: 9036317552.
Email: bfdworkshop@gmail.com

NITK SURATHKAL

Since its inception in 1960, National Institute of Technology Karnataka (NITK), Surathkal has established itself as a premier Institution, engaged in imparting high quality technical education and supporting and development activities. NITK has conferred the status of an Institution of National Importance vide NIT Act No.29 of 2007 by Govt. of India and is consistently ranked as one of the top ten technical institutions in India. Presently, NITK offers 9 Bachelors, 28 Master's and Doctoral Degree programmes.

NITK is committed to enhance capabilities and potential of our human resources with the objective of transforming them into leaders in their chosen areas of interest. The vision of NITK is to strive for excellence, be globally competitive in technical education and focus on knowledge assimilation, generation and dissemination. The year-long activities during the occasion show-cased the glorious contributions of NITK in various fields of its activities and projected new initiatives for the coming years. The institute is located 22 kilometres north of Mangalore city along the Kanyakumari-Mumbai National Highway-66, amid 300 acres of sylvan surrounding with the picturesque Western Ghats on the east and sun-kissed sands of the Arabian Sea to the west.

DEPARTMENT OF MECHANICAL ENGINEERING

Department of Mechanical Engineering established in 1960, the oldest and largest department of NITK, has earned a good reputation as a center for academic, research and industrial consulting activities. Academic Programmes leading to B. Tech. degree in Mechanical Engineering, M. Tech. degree in Manufacturing, Mechatronics, Thermal & Design and Precision Engineering, and PhD degree in the broad areas of Design, Manufacturing, Mechatronics, and Thermal Engineering are currently offered by the department. Laboratories with state of the art equipments, highly qualified faculty and dedicated supporting staff provide an ideal environment for academic and research pursuits.

ABOUT THE WORKSHOP

BioFluid Dynamics and Bioheat Transfer deals with the study of interrelationships between fluid dynamics, heat transfer and physicochemical phenomena and the associated biological behavior of physiological systems. The study mainly includes fluid-structure interaction and heat and mass transfer at low Reynolds numbers with micro-to-nano scales. The main thrust of this research involves developing improved therapies for human body related diseases and disorders and also to develop optimized microfluidic devices for various biomedical applications like drug delivery, sperm sorting and separation, DNA synthesis, cancer treatment etc. These integrated studies bring together basic and applied scientists (including computational scientists), device developers and physicians to study problems of high clinical importance.

Analytical, numerical and experimental methods are essential to study fluid dynamics and heat transfer problems in biological systems. The challenge is to link fundamental bio-transport processes and application based medical technology to biomedical engineering tools integrated in clinical practice. Hence, both experimental and computational expertise are essential to solve steady or transient physiologic and patho-physiologic flow, mass and heat transfer problems coupled with pharmacokinetics. The proper matching of experimental and computational techniques with actual patient diagnosis, *in vitro* and *in vivo* experimental study including device performance to predict and treat patho-physiologic conditions, defect and diseases is of prime interest in BioFluid Dynamics and Bioheat Transfer study.

With this perspective, the main focus of this workshop is to encourage young researchers to explore various experimental and computational techniques in the field of BioFluid Dynamics and Bioheat Transfer for its effective use in developing microfluidic devices for biomedical applications.

PROGRAMME CONTENTS:

- Experimental methods in microfluidic applications
- FSI applications for the human circulatory systems
- Computational techniques in BioFluid Dynamics applications
- Targetted drug delivery
- Thermal therapy on cancerous tissues
- Bacterial flagellar propulsion

RESOURCE PERSONS

Prof. Suman Chakraborty (IIT Kharagpur)
Prof. Prof. B. S. V Prasad Patnaik (IIT Madras)
Prof. Arul Prakash (IIT Madras)
Dr. B. S .Sathish Rao (Manipal University)

ELIGIBILITY AND SELECTION CRITERIA

Programme is open to faculties, Research Scholars and PG students of Engineering Colleges in the Department of Mechanical/Civil/Production/Manufacturing and related disciplines. Filled-in registration form, sponsorship certificate and declaration should reach the coordinator on or before **15th Feb, 2017** by email. The selected participants will be informed of their selection by email by 17th **Feb, 2017.** The number of participants is limited.

REGISTRATION

- **For external participants 500 INR**
- **No fee for internal participants**

ACCOMMODATION

Limited accommodation may be provided to outstation participants on shared basis in the institute guest houses/ hostel on prior request. Participants have to bear the boarding and lodging expenses.