

# Ionic Signaling and Human Disease

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## Overview

The Department of Biochemistry, University of Hyderabad, Hyderabad, India is offering a course on “Ionic Signalling and Human Disease”. The course is funded by the MHRD under Global Initiative on Academic Network (GIAN) Programme.

Ion channels represent an important class of membrane proteins responsible for a wide range of physiological roles, including nerve excitability, muscle contraction, hormone and neurotransmitter secretion. As such dysfunction of ion channels is associated with a range of disorders affecting the brain, heart, muscle, kidney and pancreas. It is therefore not surprising that a number of drugs used in the treatment of most common diseases, including, for example, diabetes and hypertension, are targeted to ion channels. Recent breakthroughs in molecular genetics and structural biology have opened up further exciting opportunities to explore ion channels for discovery of novel drugs. Despite the undisputed importance, ion channels are underrepresented in India both at the taught level and research level. The course will aim to fill the gap in teaching curricula by introducing the basic ion channel biology and more recent advances in biochemical, biophysical, molecular and structural aspects of ion channels. A major focus will be on the growing importance of ion channels in health and disease and drug discovery.

The course will be delivered through a series of lectures, tutorials and assignments. At the end of the programme, it is anticipated that the participants will gain an in-depth understanding of ion channels and experience in a range of transferrable skills that include scientific data analysis and interpretation, critical appraisal of scientific papers and communication skills (poster presentation and press release). Both course-work and end of module examination will be assessed and graded.

<b>Modules</b>	<b>Ion Channels in Human Health and Diseases: July 18- August 8, 2016</b> <b>Number of participants for the course will be limited to fifty.</b>
<b>Who should Attend</b>	<b>Students and researchers pursuing their studies in the areas of Life Sciences in the Universities or working at research institutions or industries are eligible to apply.</b>
<b>Fees</b>	<b>The participation fees for taking the course is as follows:</b> <b>Participants from abroad : US \$500</b> <b>Students from the Government Academic and Research Institutes: Rs.1000/-</b> <b>Students from Private institutes: Rs. 2500/-</b> <b>Researchers (scientists/ research scholars from Academic or research institutions) Rs. 5000/-</b> <b>Industry/ Research Organizations: `Rs. 10,000/-</b> <b>The fee covers the costs of all instructional materials, tutorials and assignments. The participants will be offered accommodation on payment basis.</b>

## The Faculty



**Asipu Sivaprasadarao, Professor of Membrane Biology, University of Leeds, UK.**

Professor Asipu Sivaprasadarao is interested in understanding the structural basis of ion channel function and cell biology. His more recent interests include: the role of ion channels in late-age onset diseases, including diabetes and cardiovascular diseases, and knowledge-based drug discovery.



**Kolluru V A Ramaiah, Professor, University of Hyderabad,**

Professor Ramaiah is interested in understanding stress induced translational regulation of eukaryotic mRNAs mediated by phosphorylation of the alpha-subunit of heterotrimeric eukaryotic initiation factor 2 (eIF2 $\alpha$ ), its ability to modify the intersubunit and interprotein interactions, and its importance in viral infections, unfolded protein response, ageing, and in stress-induced cellular homeostasis.



**Sepuri Naresh Babu, Associate Professor, University of Hyderabad.**

Dr Naresh Babu Sepuri is interested in studying mitochondrial biogenesis in health and disease. Main focus is on mitochondrial redox homeostasis mediated by mitochondrial protein import receptors, export of iron sulfur clusters from mitochondria and RNA import into mitochondria

## Course Co-ordinator

**Prof. Kolluru V A Ramaiah, Ph.D**

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