



**SOCIETY FOR APPLIED MICROWAVE ELECTRONICS  
ENGINEERING & RESEARCH**  
Autonomous R&D Institute under  
**Department of Electronics & Information Technology**  
Ministry of Communications & Information Technology, Govt. of India



**IN COLLABORATION WITH**



**UNDER THE AEGIS OF  
INDIAN CHAPTER OF ISMRM**

**ORGANIZES**

**6th-8th  
January  
2015**

# **2nd International Workshop on Advances in MRI Technology**



**VENUE**

**VICTOR MENEZES CONVENTION CENTER**  
Infinite Corridor, Academic Section, IIT  
Bombay, Powai, Mumbai, Maharashtra - 400076  
INDIA

**SOCIETY FOR APPLIED MICROWAVE  
ELECTRONICS ENGINEERING AND  
RESEARCH**

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# About DeitY

Department of Electronics and Information Technology (DeitY), Ministry of Communications and Information Technology, Government of India is dedicated to e-Development of India as the engine for transition into a developed nation and an empowered society. The main motive of DeitY is empowering citizens by sustainable growth of the Electronics, IT & ITeS industries, promoting R&D and innovation, enhancing efficiency through digital services and ensuring a secure cyber space.

## Identified thrust areas of Medical Electronics & Health Informatics Division:

Medical and Imaging equipment, including MRI Electronic Health Record & Online courseware in health informatics decision support system

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Infrastructure for training, maintenance of medical electronics equipment

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Establishing Centre of excellence in medical electronics R&D

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Futuristic R&D project using new/next generation technologies, including neurotechnology

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Development of assistive technologies and independent living aids

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# About SAMEER

SAMEER is an autonomous R & D institute under the Department of Electronics and Information Technology (DeitY), Government of India with a broad mandate to undertake R & D work in the areas of Radio Frequency and Microwave Engineering Technology for various user agencies.

Mumbai Centre specializes in the area of Linear Accelerator Technology for Cancer Therapy, Opto-Electronics, Microwave and Radio Frequency Systems, Sub-Systems and Components. SAMEER has developed 6 MV Medical LINAC under National 'Jai Vigyan' Program and installed them at Adyar Cancer Hospital, Chennai and MGIMS, Wardha. SAMEER has recently commissioned LINAC at Indore Cancer Foundation which was inaugurated by Honourable Speaker of Loksabha Ms. Sumitra Mahajan and Hon'able Union Health Minister Dr. Harsh Vardhan.

DeitY has been providing excellent support to entire Scientific & Academic community to promote indigenous development of technologies in every sector and due to this SAMEER has seen many projects being successfully implemented under their exemplary encouragement.



## About C-DAC

Centre for Development of Advanced Computing (C-DAC) is the premier R&D organization of the Department of Electronics and Information Technology (DeitY), Ministry of Communications & Information Technology (MCIT) for carrying out R&D in IT, Electronics and associated areas. C-DAC has today emerged as a premier third party R&D organization in IT&E (Information Technologies and Electronics) in the country working on strengthening national technological capabilities in the context of global developments in the field and responding to change in the market need in selected foundation areas. In that process, C-DAC represents a unique facet working in close junction with DeitY to realize nation's policy and pragmatic interventions and initiatives in Information Technology.



## About IUAC

Inter-University Accelerator Centre (IUAC) was set-up by the University Grants Commission as the first Inter-University Centre (IUC) called Nuclear Science Centre after due approval of the Planning Commission and the Prime Minister in October, 1984. The first Radioactive Ion Beam Facility of the country has been established using the Heavy Ion Recoil Analyzer (HIRA). World's first High Temperature Superconductor ECR ion source (HTS-ECRIS known as PKDELIS) has been developed and made fully operational at IUAC for various experiments. The Centre has been developing High Current Injector (HCI) using HTS-ECRIS, Radio Frequency Quadrupole (RFQ), Drift Tube Linac (DTL) and Low Beta QWRs as an alternate injector of existing SC-LINAC. Presently, it has state of art experimental facilities, e.g., the Gamma Detector Array, Heavy Ion Reaction Analyzer, Hybrid Recoil Analyzer and National Array of Neutron Detectors for Nuclear Physics.

## About DSI-MIRC

Dayananda Sagar Institutions (DSI) is run under the aegis of the Mahatma Gandhi Vidya Peetha Trust, in Bangalore. Medical Imaging Research Centre (MIRC) is dedicated to advancing imaging for diagnostic using magnetic resonance. DSI-MIRC develops algorithms and methods which will help to optimize the current classical methods followed in clinical and research applications. The current research includes 'Novel compressed sensing approaches to accelerate MRI', 'Digital processing of medical images for cancer', 'Foetal MRI' and 'Parallel Transmit Pulse Design'.

# About Workshop

The 1st International workshop on "**Understanding the Nuts and Bolts of MRI**" under MRI India Consortium was organized on 29th May to 31st May 2014 in Bangalore at DSI-MIRC Campus. Based on its great success, the 2nd International Workshop on "**Advances in MRI Technology**" is being organized by SAMEER in collaboration with C-DAC, IUAC and DSI-MIRC under the aegis of Indian Chapter of ISMRM from 6th to 8th January 2015 at the Victor Menezes Convention Center, IIT Powai, Mumbai. Taking the objectives of the 1st Workshop to the next level, the aim of this workshop is to understand the nitty-gritty of the technical and clinical aspects of the MRI. This workshop will provide a platform for researchers, academicians as well as industrial professionals from all over the world to come together and unify their ideas, opinions and experiences to create a valuable knowledge base.

## The workshop will broadly cover the following areas:

1. Superconducting Magnets
2. RF Subsystem of MRI
3. Imaging in MRI
4. MRI Pulse Sequences
5. Diagnostic and Prognostic role of MRI
6. Clinical applications of MRI

## Who can participate?

The workshop will provide an excellent opportunity to understand the technical intricacies of the MRI sub systems and interact with the experienced and eminent professionals and academicians working in the field of MRI. Scientists researching in any area of MRI, physicists working in the radiological sector, Doctors and Radiologists, professionals working in allied sectors of medical imaging, entrepreneurs and MRI instrument manufacturers from India can participate in this workshop.

## Registration Fee

Category	Fee
Professionals, Scientists, Doctors	7500 INR

## Sponsorship

Opportunities are available for organizations, industries and others to join as sponsors to promote their corporate image. The sponsorship charges are:

Sponsorship	What you get?	Contribution in Rs (Lakh)
Gold Sponsorship	5 Free Registrations, Opportunity for product presentation and catalog in Workshop kit, 5 Banners at Prominent places	3.00
Silver Sponsorship	3 Free Registrations, Catalog in the Workshop kit, 3 Banners in the corridor	2.00
Workshop Kit Sponsorship	2 Free Registrations, Name on the Workshop kit	1.50
Lunch/Dinner Sponsorship	2 Free Registrations, 2 Banners in the Dining Place	1.00
Session Sponsorship	1 Free Registration, Banners during the sessions	0.50

## **Chief Patron**

**Shri R.S. Sharma**

Secretary, DeitY

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## **Patron**

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Group Co-ordinator, DeitY

**Dr. Debashish Dutta**

Group Co-ordinator, DeitY

**Shri Pradeep Chopra**

Scientist G, Head, R & D in Medical Electronics and Health Informatics Division, DeitY

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**Dr. B Ramani,**

Executive Director, CDAC-Trivandrum

**Dr. Dinakar Kanjilal**

Director, IUAC

**Col A.K. Nath**

Executive Director, CDAC-Kolkata

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## **Organization Committee**

### **Chairman**

Mr. Anil Kulkarni, Scientist F

### **Convener**

Mr. Rajesh Harsh, Scientist F

### **Treasurer**

Mr. Vinod Sharma, Registrar

### **Co-convenor**

Mr. Radhakrishnan, Sr. Administrative Officer

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## **Members**

Shri G Vijay Kumar, Scientist F, DeitY

Shri Prafulla Kumar, Scientist F, DeitY

Shri R. S. Verma, Scientist D, DeitY

Prof Sairam Geethanath, DSI-MIRC

Shri Divakara K. A., Scientist C, SAMEER

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## **Co-ordinators**

Mr. Tapas K. Bhuiya, Scientist D

Mr. Dharmesh Verma, Scientist D

# WORKSHOP SPEAKERS

**Prof. N. R. Jagannathan**

AIIMS, of MRI and NMR facility, AIIMS

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**Dr. Lawrence Leroy Wald (Video Lecture)**

Associate Professor of Radiology, MGH, Boston

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**Prof Yukikazu Iwasa**

Head & Research Professor , Magnet Technology Division, FBML, MIT

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**Prof Sachin Jambawalikar**

Assistant Professor of Clinical Radiology , Columbia University, USA

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**Mr. Karthik Lakshmanan**

Department of Radiology, New York University

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**Prof Edward Brian Welch**

Assistant Professor, Vanderbilt University, Tennessee

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**Dr Shaihan Malik (Video Lecture)**

King's College, London

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**Prof Gopikrishna Deshpande**

Assistant Professor, Auburn University, USA

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**Prof Michael Garwood (Video Lecture)**

University of Minnesota

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**Prof Sairam Geethanath**

Dayanand Sagar Institutions, Bangalore, India

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**Prof Steen Moeller (Video Lecture)**

University of Minnesota

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**Dr. Venkata V Chebrolu**

General Electricals, Bangalore

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**Dr. R. G. Sharma**

IUAC, New Delhi

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**Prof Hanudatta Atreya**

Indian Institute of Science, Bangalore

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**Dr. Ramesh Venkateshan**

General Electricals, Bangalore

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**Dr. Dattesh Shanbhag**

General Electricals, Bangalore

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# Event Calender

Day: 1

Date: 06 -01-2015

Time	Topic
9.00 AM to 11.00 AM	Inaugural function
<b>11.00 AM to 11.30 AM</b>	<b>Tea Break</b>
11.30 AM to 12.30 PM	Magnets (Hardware), Prof. Yukikazu Iwasa, FBML, MIT
12.30 PM to 1.30 PM	Cryogenics (Hardware), Dr. R G Sharma, IUAC, Delhi
<b>1.30 PM to 3.00 PM</b>	<b>Lunch Break</b>
3.00 PM to 4.00 PM	Magnetization transfer (Pulse Sequence Design), Prof. Atreya, IISc, Bangalore
4.00 PM to 5.00 PM	MR Safety - 1, Prof. Sachin Jambawalikar, Columbia University
<b>5.00 PM to 5.30 PM</b>	<b>Tea Break</b>
5.30 PM to 7:30PM	Interactive Session with Speakers

Day: 2

Date: 07-01-2015

Time	Topic
9.00 AM to 10.00 AM	Gradient coils (H), Prof. Lawrence Wald, MGH-Harvard
10.00 AM to 11.00 AM	RF coils (H), Mr. Karthik, NYU
<b>11.00 AM to 11.30 AM</b>	<b>Tea Break</b>
11.30 AM to 12.30 PM	RF pulse design & EPG (PSD), Prof. Garwood, CMRR, UMN
12.30 PM to 1.30 PM	k-space trajectory (PSD), Prof. Sairam Geethanath, MIRC, Bangalore
<b>1.30 PM to 3.00 PM</b>	<b>Lunch Break</b>
3.00 PM to 4.00 PM	Motion modeling (PSD+Recon.), Prof. Edward Brian Welch, Vanderbilt, Tennessee
4.00 PM to 5.00 PM	MR Imaging, Dr. Manoj Saranathan, Stanford University
<b>5.00 PM to 5.30 PM</b>	<b>Tea Break</b>
5.30 PM to 7:30PM	Interactive Session with Speakers

Day: 3

Date: 08-01-2015

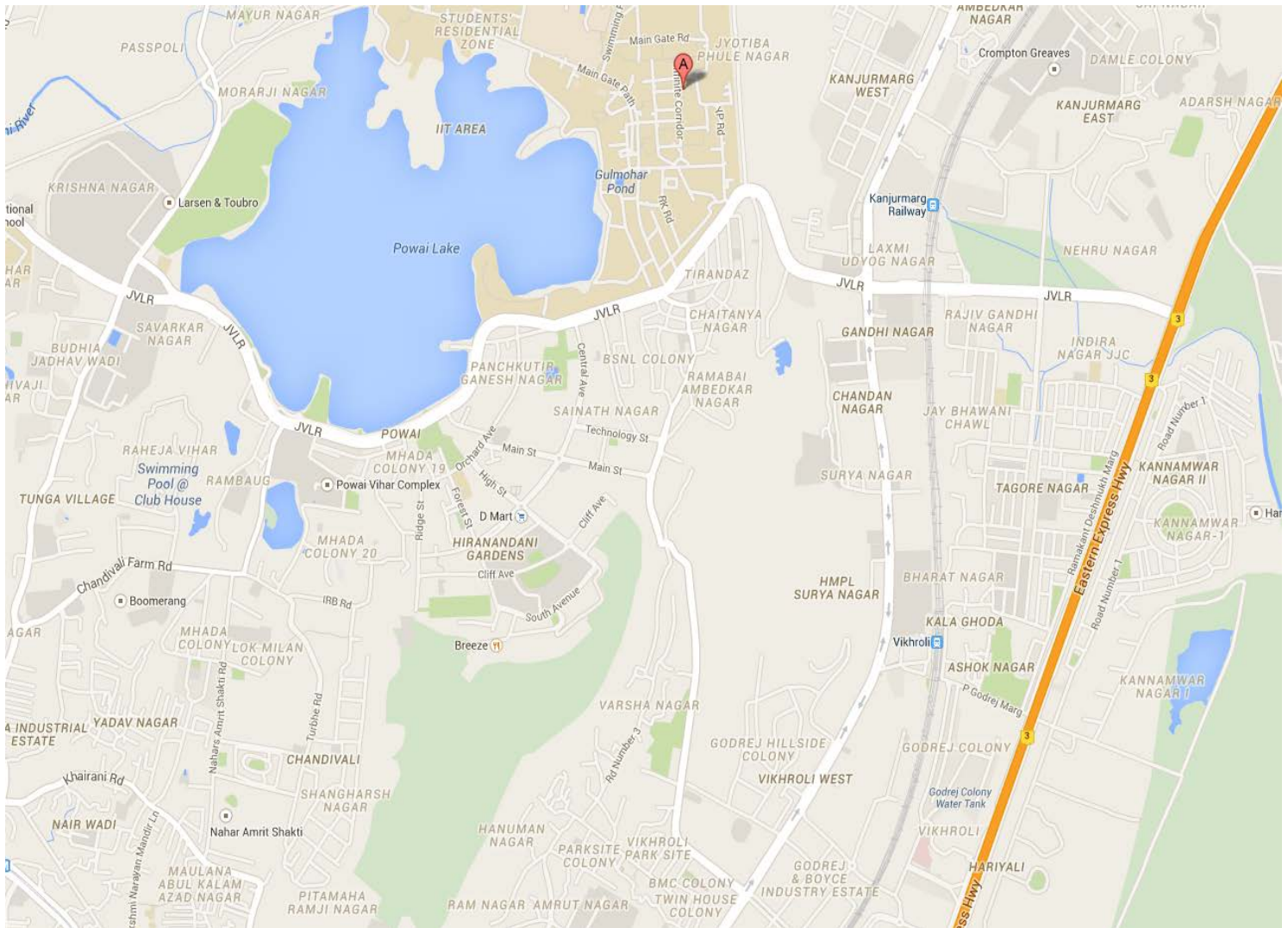
Time	Topic
9.00 AM to 10.00 AM	MR spectroscopy (App.), Prof. N R Jagannathan, AIIMS, Delhi
10.00 AM to 11.00 AM	Gradient Coil, Dr. Ramesh Venkateshan, GE India Tech. Bangaluru
<b>11.00 AM to 11.30 AM</b>	<b>Tea Break</b>
11.30 AM to 12.30 PM	Dr.Dattesh Shanbhag, GE India Tech. Bangaluru
12.30 PM to 1.30 PM	MR artifacts (Recon.), Prof. Steen Moeller, CMRR, UMN
<b>1.30 PM to 3.00 PM</b>	<b>Lunch Break</b>
3.00 PM to 4.00 PM	fMRI, Prof.Gopikrishna, Auburn University, Atlanta
4.00 PM to 5.00 PM	Arterial Spin Labeling(ASL), Dr.Venkata Chebrolu, GE India Tech. Bangaluru
5.00 PM to 7:30PM	Interactive Session with Speakers

# How to Reach?

## Nearest Railway Station:

Kanjurmarg / Vikroli on Central Railway

A number of BEST buses are available from Andheri, Goregaon, Borivali , Vikroli and Kanjurmarg up to IIT gate, Powai.



For more details please visit  
[mriworkshop.sameer.gov.in](http://mriworkshop.sameer.gov.in)

**For any queries please  
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