

**Scientific Programme of Special Symposium on “Recent Developments and Applications of Biomedical Magnetic Resonance” and 16th Conference of National Magnetic Resonance Society, INDIA**

**Venue: Shruti Auditorium, SGPGIMS (Feb. 21-23, 2010)  
: CBMR,SGPGIMS, Campus (Feb. 24, 2010)**

**Sunday 21<sup>st</sup> February, 2010**

<b>14:00 – 15:00</b>		<b>Registration</b>
<b>15:00 – 17:00</b>	<b>Inaugural Lectures</b>	
<b>15:00 – 16:00</b>		<b>Chair: Prof. C. L. Khetrapal</b>
	Prof. P. Balaram	<b>Special Symposium Inaugural Lecture</b> NMR: An outsider’s view
<b>16:00 – 17:00</b>		<b>Chair: Prof. R. V. Hosur</b>
	Dr. Ad Bax	<b>NMRS Inaugural Lecture</b> Protein Structure from Chemical Shifts and Residual Dipolar Couplings
<b>18:00 – 19:00</b>	<b>Inauguration</b>	
<b>19:00 – 19:30</b>	<b>Tea</b>	
<b>19:30 – 21:00</b>	<b>Cultural Program</b>	
<b>21:00 – 22:00</b>		<b>Dinner</b>

## Monday, 22<sup>nd</sup> February, 2010

**09:00 – 11:00**

### Session-1

**Chair: Prof. Anil Kumar and Dr. P. S. Ahuja**

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|---------------|---------------------|--|
| 09:00 – 09:30 | Prof. D. Gadian     | Magnetic Resonance and Brain Structure - Functional relationship in Neuro development  |
| 09:30 – 09:50 | Prof. U. C. Ghoshal | Recent Developments & Applications of Magnetic Resonance in Gastrointestinal Diseases. |
| 9:50 – 10:10  | Dr. Senthil Kumaran | Plasticity in the Brain: Evidence from Neuro and ophthalmological Disorders.           |
| 10:10 – 10:30 | Dr. Neel S. Bhavesh | NMR of Protein Complexes.  |
| 10:30 – 11:00 | Dr. Ulrich Guenther | DNP - New Perspectives from Physics to Chemistry and Biology.                          |

**11:00 – 11:30**     **Tea**

**11:30 – 13:30**

### Session-2

**Chair: Prof. R. C. Tripathi and Prof. Narayanan Srinivasan**

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|---------------|-------------------------|---|
| 11:30 – 12:00 | Dr. Eberhard Humpfer    | Metabolic Phenotyping by NMR.   |
| 12:00 – 12:20 | Prof. N. Suryaprakash   | Visualisation of Enantiomers and Discerning of Degenerate Transitions from Broad and Unresolved <sup>1</sup> H NMR Spectra of Chiral Molecules: Methodological developments |
| 12:20 – 12:40 | Dr. Amarnath Chatterjee | Deciphering the Three Domain Architecture of the SARS Coronavirus-Unique Domain (SUD) by NMR.   |
| 12:40 – 13:00 | Dr. Lakshmi Bala        | NMR Studies on Bile in Patients with Hepatopancreaticobiliary Malignancy: Where do we stand?  |

13:00 – 13:30 Prof. Christoph Segebarth fMRI of the Visual System – From Straight To Inverse Retinotopic Mapping.

**13:30 – 14:30 Lunch**

**14:30 – 16:30**

**Session-3**

**Chair: Prof. A.K. Mahapatra and Dr. T. K. Chakraborty**

14:30 – 15:00 Prof. Ray Norton Structure and Interactions of a Disordered Malaria Surface Antigen.

15:00 – 15:20 Dr. B. Jagadeesh Structural Validation and Refinement of Compact Secondary Structures by using RDC-Enhanced NMR Spectroscopy in Organic Solvent Media.

15:20 – 15:40 Dr. Siddharth Sarma NMR Structural Studies of the Regulatory Domain of the AHAS Isozyme I.

15:40 – 16:00 Dr. T. Narsimha Swamy Mesogens, Molecular Topology and SLF Spectroscopy

16:00 – 16:30 Dr. Amita Dave MR Imaging and Spectroscopy in Head and Neck Cancers.

**16:30 – 17:30**

**Session-4**

**Chair: Prof. H. K. Sehgal and Dr. P. K. Seth**

16:30 – 17:00 Prof. Shantanu Sinha From Fiber Contraction to Limb movement: A Structure – Function Modeling Study

17:00 – 17:30 Dr. Vikram S. Bajaj Remotely Detected Magnetic Resonance Imaging and Velocimetry

**17:30 – 19:30**

**Poster Session / Tea**

**19:30 – 21:00**

**Cultural Program**

**21:00 – 22:00**

**Dinner**

## Tuesday, 23<sup>rd</sup> February, 2010

**09:00 – 11:00**

### Session-5

**Chair: Prof. G. Govil and Prof. K. V. Ramanathan**

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|----------------------|-------------------------|--|
| 09:00 – 09:30        | Prof. Stanley J. Opella | Development of NMR Methods for Studying Membrane Proteins.   |
| 09:30 – 09:50        | Prof. P. K. Madhu       | Heteronuclear Dipolar Decoupling in Solid--State NMR: Status and Perspectives.   |
| 09:50 – 10:10        | Dr. H. S. Atreya        | Novel NMR Methodologies for Protein Structure Determination.   |
| 10:10 – 10:30        | Dr. Neeraj Sinha        | Quantitative Metabolic Profiling by Natural Abundance <sup>1</sup> H - <sup>13</sup> C HSQC Spectra of Body Fluids: Application to Human Urine Samples |
| 10:30 – 11:00        | Prof. Navin Bansal      | Sodium-23 MR Techniques: Biomedical Applications.  |
| <b>11:00 – 11:30</b> | <b>Tea</b>              |  |

**11:30 – 13:30**

### Session-6

**Chair: Prof. R. K. Sharma and Prof. H. L. Nigam**

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|---------------|--------------------------|--|
| 11:30 – 12:00 | Prof. John Markley       | High-Throughput Approaches to NMR-Based Metabolomics Investigations.   |
| 12:00 – 12:30 | Prof. Masatsuno Kainosho | Latest Applications of SAIL Amino Acids for Studying Protein Structure and Dynamics  |
| 12:30 – 13:00 | Prof. Joel R. Tolman     | Protein Structure and Dynamics From Solution State Residual Dipolar Couplings  |
| 13:00 – 13:30 | Prof. Gianluigi Veglia   | Hybrid Solution and Solid-State NMR Approach to Determine the High-Resolution Structure and Topology of Membrane Proteins. |

**13:30 – 14:30**      **Lunch/ EC meeting**

**14:30 – 16:30**

**Session-7**

**Chair: Prof. B. Hanumaiah and Dr. A. C. Kunwar**

14:30 – 15:00	Prof. Kevin Gardner	Solution NMR Studies of Allosteric Changes in Environmental Sensory Proteins.
15:00 – 15:30	Prof. Harald Schwalbe	NMR Studies of RNAs and of the Human Prion Protein.
15:30 – 16:00	Prof. Ravinder Reddy	Multinuclear MR at Ultrahigh fields.
16:00 – 16:30	Prof. J.-P. Amoureux	New solid-state NMR methods developed recently in Lille-France

**16:30 – 17:00**      **Tea**

**17:00 – 19:30**

**Session-8**

**Chair: Prof. K. V. R. Chary and Prof. Anil Saran**

17:00 – 17:30	Prof. Mathias Ernst	Second-Order Recoupling Sequences in MAS Solid-State NMR.
17:30 - 18:00	Prof. Shimon Vega	Spin Dynamics During DNP Experiments
18:00 – 18:30	Prof. Alexej Jerschow	Optimally Controlling Osteoarthritis and Tumors with Spin 3/2.
18:30 – 19:00	Prof. Akiro Naito	Structure Elucidation of Membrane-Associated Peptides and Proteins Under Oriented, Photo-Irradiated and Pressure Induced Conditions by Site-Directed Solid-State NMR.
19:00 – 19:30	Prof. Hartmut Oschkinat	The Structure of Human $\alpha$ B-Crystallin by Solid-State NMR and Small-Angle X-ray-Scattering

**19:30**                      **Felicitatation to Prof. K. V. Ramanathan and Banquet**

## Wednesday, 24<sup>th</sup> February, 2010

**9:00 – 11:40**

### Session-9

**Chair: Dr. K. C. Gupta and Dr. Rakesh Tuli**

9:00 – 9:30 Dr. Philippe Lesot

Applications of Natural Abundance Deuterium NMR in Chiral Oriented System: From the Stereochemical Analysis to the Determination of the Natural Isotopic (D/H) Distribution in Fatty Acids.

9:30 – 10:00 Prof. Om Prakash

NMR Structural Insights into the Regulatory-Functions of Arthropod Serine Proteinases.

### Students Award Oral Presentations

10:00 – 10:10 Dinesh Kumar

Rapid Backbone Assignment in Small Folded Proteins in Less Than a Day: Implications to Structural proteomics.

10:10 – 10:20 Jitendra Kumar

NMR of human Prion Protein.

10:20 – 10:30 R. G. Sah

Early Assessment of the therapeutic Response of Locally Advanced Breast Cancer Patients Undergoing Neo-Adjuvant Chemotherapy: Sequential Monitoring by Tumor Volume and Total Choline Concentration.

10:30 – 10:40 Pratima Tripathi

<sup>1</sup>H NMR Studies of Non-Alcoholic Steatohepatitis: Assessment of Severity of Various Liver Diseases.

10:40 – 10:50 Sankeerth Hebbar

Heteronuclear z-filtered Multiple Quantum – Single Quantum Correlation: Application to Spectral Simplifications.

10:50 – 11:00 S. Jayanthi

2<sub>n</sub>-SEMA – A Robust Solid State NMR Experiment for Measuring Heteronuclear Dipolar Couplings in Static oriented Systems Using Effective Transverse Spinlock.

11:00 – 11:10 Cyril Augustine

Heteronuclear Dipolar Decoupling in Liquid- Crystal NMR Using a Shorter SWf-TPPM Sequence With Small Phase Incremental Alteration and Supercycling.

11:10 – 11:20 Shatakshi Srivastava

Taurine-a Possible Fingerprint Biomarker in Non-Invasive Bladder Cancer: A Pilot Study by <sup>1</sup>H NMR Spectroscopy.

11:20 – 11:30 Monalisa Swain Structural and Functional Studies of Insuline Like Growth Factor Binding Protein and its Fragments By NMR Spectroscopy.

11:30 – 11:40 R. Mathew Phase Transition of Poly(N-Isopropylacryl--amide) in a Non-Ionic Surfactant Hexagonal Mesophase.

**11:40 – 12:00 Tea**

**12:00 – 13:30**

**Session-10**

**Chair: Dr. V. P. Kamboj and Prof. Chooramani S. Gopal**

12:00 – 12:30 Prof. Bernhard Bluemich Big Times For Small NMR

12:30 – 13:00 Prof. Michael Deschamps Molecular motives, locally favored structures and glass formers: NMR in inorganic samples.

13:00 – 13:30 Prof. Guido Pintacuda Paramagnetic Proteins and Ultra-Fast MAS.

**13:30 – 14:30 Lunch**

**14:30 – 15:30**

**Session-11**

**Chair: Dr. B. N. Dhawan and Prof. M. K. Mishra**

14:30 - 14:40 Dr. Ashutosh Kumar Understanding the Atomic Details of fibril Topology and Oligomeric States of  $\alpha$ -Synuclein.

14:40 – 14:50 Dr. Rajendra S Thakur A Simplified Understanding of Hetronuclear Dipolar Decoupling in Solid-State NMR.

14:50 – 15:00 Dr. Anajani K. Tiwari Aminobisphosphonate Based receptor as a Fluorecent Chemosensor for Cu(II) in Aqueous Solution: A NMR Study.

15:00 – 15:10 Dr. T.S. Mahesh Adiabatic Pulses and Transverse relaxation.

15:10 – 15:20 Prof. Prasun K. Roy Energy Flow Tensor Imaging as a Novel Clinical Modality: A Conceptual Extension of Diffusion and Perfusion Tensor Imaging

15:20 – 15:30 Dr. Pravat K Mandal Detection of antioxidant marker in normal subjects and

patients with neurodegenerative disorders using *in vivo* magnetic resonance spectroscopy.

**Session-12**

**15:30 – 16:20**

**Chair: Prof. Kripa Shanker and Dr. S. Ganapathy**

15:30 – 16:00	Dr. Takashi Mizuno	Cryocoil MAS Probe : Sensitivity Enhancements of Solid State High resolution NMR
16:00 - 16:20	Dr. Philippe Corcos	Technical Presentations

**16:20 – 17:50**

**Tea, NMRS General Body Meeting and Award Announcements**

**19:30**

**Dinner**