

# 32<sup>nd</sup> DAE-BRNS National Laser Symposium

## SCIENTIFIC PROGRAM

Day 1: Monday, January 29, 2024

SESSION – 1: INAUGURAL SESSION	
9:30 – 9:45	Welcome of the Chief Guest Lamp Lighting Saraswati Vandana
9:45 – 10:00	Welcome Address by Convener, NLS-32 Opening Remarks by Director, RRCAT Address by President, ILA
10:00 – 10:30	<b>Address by the Chief Guest</b> Shri B. C. Pathak, CMD, NPCIL
10:30 – 11:15	<b>Keynote Lecture</b> Prof. Debabrata Goswami, IIT Kanpur <i>Controlling Light-Matter Interactions for Applications at Molecular scales</i>
11:15 – 12:00	Inauguration of Industrial Exhibition followed by High Tea
SESSION - 2	
<b>Invited Talk-1</b> 12:00 – 12:30	Prof. Hirendra Nath Ghosh, NISER Bhubaneswar <i>Ultrafast Charge Carrier Dynamics at the Interface of p-n Semiconductor Heterojunctions</i>
<b>Invited Talk-2</b> 12:30 – 13:00	Prof. Nirmalya Ghosh, IISER Kolkata <i>Quantum Weak measurement meets Spin Orbit Photonics</i>
<b>LUNCH</b> 13:00 – 14:00	
SESSION – 3	
14:00 – 16:30	<b>POSTER SESSION - 1</b>
<b>TEA BREAK</b> 16:30 – 16:45	
SESSION – 4	
<b>Invited Talk-3</b> 16:45 – 17:15	Prof. Nilesh J. Vasa, IIT Madras <i>Recent advances in laser-assisted trace gas sensing and their applications</i>
<b>Invited Talk-4</b> 17:15 – 17:45	Dr. R. V. L. N. Sridhar, LEOS-ISRO, Bengaluru <i>Development of Laser based Sensors and Scientific Instruments at LEOS, ISRO</i>
<b>Invited Talk-5</b> 17:45 – 18:15	Prof. Dalip Singh Mehta, IIT Delhi <i>Laser based Solid State Lighting and Visible Light Communications (VLC) in Free-space and Under Water</i>
<b>TEA BREAK</b> 18:15 – 18:30	
18:30 – 19:15	<b>ILA General Body Meeting</b>
19:30	<b>Departure for Banquet</b>

## Day 2: Tuesday, January 30, 2024

SESSION – 5	
<b>Invited Talk-6</b> <b>9:30 – 10:00</b>	Prof. Anindya Datta, IIT Mumbai <i>Single particle dynamics of water-soluble semiconductor nanocrystals</i>
<b>Invited Talk-7</b> <b>10:00 – 10:30</b>	Dr. Atasi Pal, CSIR-CGCRI, Kolkata <i>Impact of optical Components on fiber laser power scaling</i>
TEA BREAK 10:30 – 10:45	
SESSION – 6	
<b>Invited Talk-8</b> <b>10:45 – 11:15</b>	Prof. Venugopal Achanta, CSIR-NPL, Delhi <i>Metamaterials for single molecule detection to single photon emitter</i>
<b>Invited Talk-9</b> <b>11:15 – 11:45</b>	Prof. Bodhaditya Santra, IIT Delhi <i>Quantum simulation and computing using cold atoms with tunable interactions</i>
SESSION – 7 BRNS AND INDUSTRIAL SESSION	
<b>11:45 – 13:15</b>	<b>BRNS and INDUSTRY PRESENTATIONS</b>
LUNCH 13:15 – 14:15	
SESSION – 8	
<b>14:15 – 16:45</b>	<b>POSTER SESSION - 2</b>
TEA BREAK 16:45 – 17:00	
SESSION – 9	
<b>Invited Talk-10</b> <b>17:00 – 17:30</b>	Dr. G. K. Sahu, BARC, Mumbai <i>Design to delivery of laser enriched Lu-176 for production of Lu-177 in India</i>
<b>Invited Talk-11</b> <b>17:30 – 18:00</b>	Dr. Aniruddha Kumar, BARC Tarapur <i>Advances in laser material processing applications with oscillating beam</i>
TEA BREAK 18:00 – 18:15	
<b>18:15 – 19:15</b>	<b>Special Evening Talk</b> Prof. Ajoy Ghatak, IIT Delhi <b>WHAT IS LIGHT &amp; EVOLUTION OF QUANTUM THEORY</b>
<b>19:15</b>	<b>Dinner</b>

### Day 3: Wednesday, January 31, 2024

SESSION – 10	
<b>Invited Talk-12</b> <b>9:30 – 10:00</b>	Dr. Praveen Kumar Velpula, UGC-DAE CSR, Indore <i>Post-compression of pulses: An approach to the few-cycle terawatt regime</i>
<b>Invited Talk-13</b> <b>10:00 – 10:30</b>	Dr. Sulbha Sharma, SVVV, Indore <i>Photobiomodulation: Mechanism and Clinical Applications</i>
<b>TEA BREAK</b> <b>10:30 – 10:45</b>	
<b>SESSION – 11</b> <b>PhD Thesis Presentations (Parallel Sessions)</b> <b>10:45 – 13:15</b>	
<b>LUNCH</b> <b>13:15 – 14:15</b>	
<b>SESSION – 12</b>	
<b>14:15 – 16:45</b>	<b>POSTER SESSION - 3</b>
<b>TEA BREAK</b> <b>16:45 – 17:00</b>	
<b>SESSION - 13</b>	
<b>Invited Talk-14</b> <b>17:00 – 17:30</b>	Dr. Jinto Thomas, IPR, Gandhinagar <i>Overview of Thomson Scattering Diagnostics Developments for High-Temperature Plasma</i>
<b>Invited Talk-15</b> <b>17:30 – 18:00</b>	Prof. Rajeev Paramel Pattathil, STFC Rutherford Appleton Laboratory, UK <i>Extreme Photonics: Science and Applications</i>
<b>CULTURAL PROGRAM</b> <b>18:00 – 20:00</b>	
<b>20:00</b>	<b>Dinner</b>

## Day 4: Thursday, February 01, 2024

SESSION – 14	
<b>Invited Talk-16</b> <b>9:30 – 10:00</b>	Prof. Tushar Kanti Mukherjee, IIT Indore <i>Doing Reactions within Self-Assembled Molecular Crucibles: From Biocatalysis to Photocatalysis</i>
<b>Invited Talk-17</b> <b>10:00 – 10:30</b>	Prof. Sharad Gupta, IIT Indore <i>Optically Active Nanoparticles for NIR Imaging and Therapy</i>
<b>Invited Talk-18</b> <b>10:30 – 11:00</b>	Dr. Tarun Kumar Sharma, RRCAT, Indore <i>Recent Advancements in Semiconductor Lasers &amp; Detectors</i>
<b>TEA BREAK</b> <b>11:00 – 11:15</b>	
SESSION – 15	
<b>Invited Talk-19</b> <b>11:15 – 11:45</b>	Dr. Ajit Upadhyay, RRCAT, Indore <i>Electron Acceleration from Laser Produced Plasmas: Simulation Studies</i>
<b>Invited Talk-20</b> <b>11:45– 12:15</b>	Dr. Manoj Kumar Saxena, RRCAT, Indore <i>Raman optical fiber distributed temperature sensor-based Agni-Rakshak system</i>
SESSION 16: CONCLUDING SESSION	
<b>12:15 – 13:30</b>	<b>Award Presentation and Concluding Ceremony</b>
<b>LUNCH</b> <b>13:30 – 14:30</b>	