



Dr. C. Basu, Principal, AECS, Indore as the resource person in JSO/JMO programme held at AEJC, Mumbai from 6th June to 15th June, 2022.



Prize winners of the All India AECS Quiz Competition (Zonal Level) held on 14th August, 2022 at AECS-4, Rawatbhata.

Reported by:
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N.11: Awards and Honours

N.11.1: DAE Excellence in Science, Engineering and Technology Awards 2020

N.11.1.1: Scientific and Technical Excellence Award

Dr. Manoj Kumar Saxena, SO/G, Fibre Sensors & Optical Spectroscopy Section, Materials Science and Advanced Technology Group, RRCAT has been conferred with "Scientific and Technical Excellence Award" for the year 2020 for his contribution in "Optical fiber sensors for nuclear radiation and harsh environment of high RF & magnetic field". The award carried a cash prize of ₹ 1 Lakh, a citation and a medal.



N.11.1.2: Young Scientist Award

Dr. Shweta Verma, SO/E, Laser Materials Processing Division, Materials Science and Advanced Technology Group, RRCAT has been conferred with "Young Scientist Award" for the year 2020 for her contribution in "Nano materials and their applications for trace detection of analytes by SERS technique, photocatalytic degradation of organic molecules and colorimetric sensing of heavy metal ions". The award carried a cash prize of ₹ 50000, a citation and a medal.



N.11.1.3: Meritorious Technical Support Award

1. Shri R. K. Jain, Scientific Assistant/G, Laser Electronics Division, Laser Group, RRCAT has been conferred the "Meritorious Technical Support Award" for the year 2020 for his contributions in "Design, fabrication, assembly and testing of opto-mechanical components for high power Nd:YAG and fiber lasers and laser based tools, fixtures, manipulators and active participation in on-site implementation of laser cutting/welding technology in highly radioactive environment". The award carries a cash prize of ₹ 20000, a citation and a medal.



2. Shri Manohar K. Koli, Scientific Assistant/G, Accelerator Power Supplies Division, Electron Accelerator Group, RRCAT has been conferred the "Meritorious Technical Support Award" for the year 2020 for his contributions in "Power Electronics and Power Converters". He has contributed in indigenous development, testing, installation, commissioning and maintenance of large number of high stability power converters in Indus Accelerator Complex (IAC) and other demanding applications. He has also contributed for the development of power converters for magnets in CUTE-FEL, photocathode gun based linac and other applications. The award carries a cash prize of ₹ 20000, a citation and a medal.



N.11.1.4: Meritorious Service Award

Smt. Sapana Rege, Pvt. Sec. (N.S.), RF Systems Division, RRCAT has been conferred the "Meritorious Service Award" for the year 2020 for the "Outstanding contribution in the field of secretarial services". The award carried a cash prize of ₹ 20000, a citation and a medal.



N.11.1.5: Group Achievement Awards

1. A group comprising of 29 members was conferred the Group Achievement Award for the year 2020 for their excellent team work for successfully accomplishing the activity titled "Development and deployment of laser welding system for medical and nuclear applications". The award carried a cash prize, citation and medals. The award was received by the Group Leader, **Dr. K. S. Bindra**, OS and Director, Laser Group, RRCAT.



2. A group comprising of 22 members was conferred the Group Achievement Award for the year 2020 for their excellent team work for successfully accomplishing the activity titled "Development of refurbishment technology for imported RF-excited sealed off CO₂ lasers and its successful deployment at India Security Press, Nashik". The award carried a cash prize, citation and medals. The award was received by the Group Leader, **Dr. Manoj Kumar**, SO/H and Head, Laser Surface & Materials Treatment Lab, Laser Materials Processing Division, Materials Science and Advanced Technology Group, RRCAT.



N.11.2: Award of Doctor of Philosophy (Ph. D.) Degree

N.11.2.1: The Homi Bhabha National Institute (HBNI), a Deemed University has awarded Ph. D. Degree to following employee / students of RRCAT:

1. Dr. Mohammad Soharab was awarded Doctor of Philosophy in Physical Sciences on the dissertation, titled "Growth and investigations of rare earth doped orthovanadate laser host single crystals", which was supervised by Dr. A. K. Karnal.



2. Dr. A. N. Jinoop was awarded Doctor of Philosophy in Engineering Sciences on the dissertation, titled "Experimental studies and parametric investigation on laser directed energy deposition based additive manufacturing of Hastelloy-X thin walls and bulk Structures", which was supervised by Dr. C. P. Paul.



3. Dr. Sonal Saxena was awarded Doctor of Philosophy in Physical Sciences on the dissertation, titled "Studies on broadband terahertz radiation from ultra-short two-color laser induced plasma", which was supervised by Dr. J. A. Chakera.



4. Dr. Pravin Kumar Yadav was awarded Doctor of Philosophy in Physical Sciences on the dissertation, titled "Studies on synchrotron radiation induced contaminations and development of optics refurbishing techniques", which was supervised by Dr. Mohammed H. Modi.



5. Dr. Rahul Aggarwal was awarded Doctor of Philosophy in Physical Sciences on the dissertation, titled "Raman spectroscopy study of epitaxially integrated polar GaP on non-polar Si and Ge substrates", which was supervised by Dr. Alka A. Ingale.



6. Dr. Sabyasachi Paul was awarded Doctor of Philosophy in Physical Sciences on the dissertation, titled "Thermal conductivity and critical current density of vanadium based alloy superconductors", which was supervised by Dr. M. K. Chattopadhyay.



7. Dr. Abhishek Chatterjee was awarded Doctor of Philosophy in Physical Sciences on the dissertation, titled “Electronic transport studies on GaN epitaxial layers for the fabrication of radiation hard ultraviolet photodetectors”, which was supervised by Dr. Tarun Kumar Sharma.



8. Dr. Surendra Yadav was awarded Doctor of Philosophy in Engineering Sciences on the dissertation, titled “Intelligent approach to study transverse coupled bunch instabilities and their effects on performance of electron synchrotron”, which was supervised by Dr. Prabhakar V. Varde.



9. Dr. Sahadeb Ghosh was awarded Doctor of Philosophy in Physical Sciences on the dissertation, titled “Studies on the thin films and heterostructures of beta-Ga₂O₃ and Fe substituted beta-Ga₂O₃”, which was supervised by Dr. Tapas Ganguli and co-supervised by Dr. S. D. Singh.



N.11.2.2: Devi Ahilya Vishwavidyalaya, Indore has awarded Ph. D. Degree to Dr. Shailendra Singh Tomar in Computer Engineering on the dissertation, titled “Investigations in quality of service and security issues in IPv6 networks”, which was supervised by Prof. Sanjiv Tokekar and co-supervised by Prof. Prakash D. Vyavahare.



N.11.3: Best Thesis Award

1. Dr. Arup Ratan Jana, Ph. D. Scholar, Accelerator & Beam Physics Section, Proton Accelerator Group, RRCAT received Best Thesis Award sponsored by the Indian Society for Particle Accelerators (ISPA), during DAE-BRNS Indian Particle Accelerator Conference 2022 (InPAC-2022) held at Variable Energy Cyclotron Centre, Kolkata during March 22-25, 2022. The title of the thesis was “Electromagnetic design & beam dynamics studies in elliptic superconducting radio frequency (SRF) cavities”. The award carries a certificate and a cash prize of ₹ 8000.



2. Dr. A. N. Jinoop, Ph. D. Scholar, Laser Technology Division, Laser Group, RRCAT received Best Thesis Award sponsored by the Indian Laser Association (ILA), during 30th DAE-BRNS National Laser Symposium (NLS-30) held at BARC, Mumbai during January 19-22, 2022. The title of the thesis was “Experimental studies and parametric investigation on laser directed energy deposition based additive manufacturing of Hastelloy-X thin walls and bulk Structures”. The award carries a certificate and a cash prize of ₹ 5000.



3. Dr. Abhishek Chatterjee, SO/E, Materials Science Section, Materials Science and Advanced Technology Group, RRCAT received Best Thesis Award sponsored by the Indian Laser Association (ILA), during 30th DAE-BRNS National Laser Symposium (NLS-30) held at BARC, Mumbai during January 19-22, 2022. The title of the thesis was “Electronic transport studies on GaN epitaxial layers for the fabrication of radiation hard ultraviolet photodetectors”. The award carries a certificate and a cash prize of ₹ 5000.



4. Dr. Mohammad Soharab, SO/E, Laser & Functional Materials Division, Materials Science and Advanced Technology Group, RRCAT received Best Thesis Award in the “International Conference on Recent Advances in Materials and Radiation Measurements-2022” (RAMRAM-2022) held at Chennai during February 10-11, 2022 organized by Sri Sivasubramaniya Nadar College of Engineering, Department of Physics, in association with Indian Association for Crystal Growth. The title of the thesis was “Growth and investigations of rare earth doped orthovanadate laser host single crystals”. The award carries a certificate.



N.11.4 HBNI Award

Dr. Mohammad Soharab, SO/E, Laser & Functional Materials Division, Materials Science and Advanced Technology Group, RRCAT received the “Outstanding Doctoral Student Award-2022” of the Homi Bhabha National Institute during the Homi Bhabha National Institute Award Function-2022 held on 3rd June, 2022 at DAE Convention Centre, BARC, Mumbai. The title of the thesis was “Growth and investigations of rare earth doped orthovanadate laser host single crystals”. The award carries a certificate and a cash prize of ₹ 25000.



N.11.5: Best Poster/Paper Awards

1. Nine posters of RRCAT received the Best Poster Awards sponsored by the Indian Laser Association (ILA), during 30th DAE-BRNS National Laser Symposium (NLS-30) held in online mode at BARC, Mumbai during January 19-22, 2022. The award carries a certificate and a cash prize of ₹ 2500. The details of the posters are given below:

1.1 Title: Photosensitizers immobilized on aluminium hydroxide microparticles for photodynamic inactivation of bacteria and water disinfection

Authors: A. Dube, A. Chowdhury and Shovan Kumar Majumder



Dr. Alok Dube, SO/H, Laser Biomedical Applications Division, Materials Science and Advanced Technology Group, RRCAT, presented the poster and received the award.

1.2 Title: Fast detection of refractive index inhomogeneity in unpolished neodymium doped phosphate glass slabs using indexed matched liquid by schlieren technique

Authors: Sanjiv Kumar Tiwari, Sarvendra Singh, G. Muralidharan, Y. Pawan Kumar, G. Ragoubady, Anil Kumar, S. S. Thangavel, Rishipal, A. K. Biswas, M. P. Kamath, N. S. Benerji, K. S. Bindra.



Shri Sanjiv Kumar Tiwari, SO/F, High Energy Lasers & Optics Section, Laser Group, RRCAT, presented the poster and received the award.

1.3 Title: Atomic fountain of Rubidium atoms with moving molasses

Authors: S. Singh, B. Jain, V. B. Tiwari and S. R. Mishra



Dr. Surendra Singh, SO/F, Laser Physics Applications Division, Materials Science and Advanced Technology Group, RRCAT, presented the poster and received the award

1.4 Title: Proto radiography of microstructure and laser produced plasma flame

Authors: S. Bagchi, M. Tayyab, A. Moorti and J.A. Chakera



Dr. Suman Bagchi, SO/F, Laser Plasma Division, Laser Group, RRCAT, presented the poster and received the award.

1.5 Title: All-fiber passively Q-switched ytterbium doped laser using fiber optic ring resonator

Authors: Pradeep K. Gupta, C. P. Singh, P. K. Mukhopadhyay and K. S. Bindra



Shri Pradeep K. Gupta, SO/E, Laser Technology Division, Laser Group, RRCAT, presented the poster and received the award.

1.6 Title: Magnetic Micro-trapping of laser cooled Rb-atoms using a gold Z-wire trap on atom-chip

Authors: Vivek Singh, V. B. Tiwari, A. Chaudhary, R. Shukla, C. Mukherjee and S. R. Mishra



Shri Vivek Singh, SO/E, Laser Physics Applications Division, Materials Science and Advanced Technology Group, RRCAT, presented the poster and received the award.

1.7 Title: Design and development of an automated control system for CO₂ laser assisted tritium filled glass tube cutting and sealing for BRIT, Mumbai

Authors: Rajiv Kumar Yadav, Manoj Kumar, L. B. Rana, M. Murugan, N. Jaychandran and R. Kaul



Shri Rajiv Kumar Yadav, SO/E, Laser Materials Processing Division, Materials Science and Advanced Technology Group, RRCAT, presented the poster and received the award

1.8 Title: Fabrication and testing of TSB/PMMA composite elements for X-ray imaging at Indus-2

Authors: Chiranjit Debnath, S. Kar, Ashish K. Agrawal, Sunil Verma and Shovan Kumar Majumder



Shri Chiranjit Debnath, SO/E, Laser Biomedical Applications Division, Materials Science and Advanced Technology Group, RRCAT, presented the poster and received the award.

1.9 Title: High voltage picosecond pulse generation by an avalanche transfer stack on microstrip PCB

Authors: M. L. Sharma, S. Nigam, K. Aneesh, Y. B. S. R. Prasad and K. S. Bindra



Shri M. L. Sharma, SA/E, High Energy Laser Physics Section, Laser Technology Division, Laser Group, RRCAT, presented the poster and received the award.

2. Three posters of RRCAT received the Best Poster Awards sponsored by the Indian Society for Particle Accelerators (ISPA), during DAE-BRNS Indian Particle Accelerator Conference 2022 (InPAC-2022) held in online mode at Variable Energy Cyclotron Centre, Kolkata during March 22-25, 2022. The award carries a certificate and a cash prize of ₹ 3000. The details of the posters are given below:

2.1 Title: Development of beam delivery systems for industrial LINACS at RRCAT

Authors: Pankaj Kumar, R. K. Soni, Divya Purohit, S. G. Goswami, R. S. Choudhary, V. C. Petwal, Ritesh Mallik, Kailash Ruwali, Gautam Sinha, K. Sreeramulu, Parul Arora, P. K. Goyal, Amalendu Sharma, Vinit Kumar, B. N. Sisodia, T. Veerbhadraraiya, Sanjay Sharma, Vivek Bhatnagar, Sanjay Choukse, S. N. Singh, Jishnu Dwivedi and T. A. Puntambekar



Shri Pankaj Kumar, SO/H, Industrial Accelerators Division, Technology Development and Support Group, RRCAT, presented the poster and received the award.

2.2 Title: Implementation of high resolution DPWM scheme in FPGA using second order Σ - Δ modulator

Authors: Alok Singh, Mangesh Borage and S. R. Tiwari



Shri Alok Singh, SO/F, Switch Mode Power Converter Section, Accelerator Power Supplies Division, Electron Accelerator Group, RRCAT, presented the poster and received the award.

2.3 Title: Transverse collimator studies of ring to target beam transport line for a 1 GeV proton beam

Authors: Urmila Singh and Amlendu Sharma



Smt. Urmila Singh, SO/E, Accelerator & Beam Physics Section, Proton Accelerator Group, RRCAT, presented the poster and received the award.

N.11.6 Awards in 34th Annual Rose Exhibition

34th Annual Rose Exhibition was organized on 6th February 2022 by Malwa Rose Society under the aegis of Department of Horticulture and Food Processing (Government of M.P.) virtually due to COVID-19. RRCAT has bagged following prizes under institutional category:

- Rose garden in RRCAT Guest House Complex has been awarded as 'Best Landscaped Rose Garden'.

- 1st Prizes (4 Nos.) for best roses in the category of Hybrid Tea, Floribunda, Miniature and Ground Roses.

- 2nd Prizes (2 Nos.) for best roses in the category of Floribunda Roses.



Rose garden in RRCAT Guest House Complex.