मालवीय राष्ट्रीय प्रौद्योगिकी संस्थान जयपुर

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

(An Institute of National Importance)

MNITJ NEWS

QUARTERLY ISSUE | JANUARY 2024

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VISION

To create a centre for imparting technical education of international standards and conduct research at the cutting edge of technology to meet the current and future challenges of technological development.

MISSION

To create technical manpower for meeting the current and future demands of the industry: To recognize education and research in close interaction with industry with emphasis on the development of leadership qualities in the young men and women entering the portals of the Institute with sensitivity to social development and eye for opportunities for growth in the international perspective.

FROM THE DIRECTOR'S DESK

Dear Readers,

I am delighted to welcome you to another edition of our quarterly newsletter, the first one for the year 2024. Our newsletter acts as a platform that serves as a bridge between the happenings within our esteemed institution and the vibrant pulse of our diverse MNIT community. As we embark on this journey together, I am filled with gratitude for the collective efforts of the newsletter team and their sheer-minded dedication, which actuated the release of the first quarterly edition in 2024.

In this ever-changing, dynamic world, MNIT stands as a beacon of excellence, fostering an environment where innovation, learning, and collaboration in the fields of technology, management, and social sciences thrive. The pages of this newsletter will unfold stories of achievements, breakthroughs, and the remarkable accomplishments of our students, faculty, and alumni. It is a testament to the unwavering commitment to academic brilliance and a passion for pushing boundaries.

I encourage you to immerse yourself in the pages of this newsletter, celebrating the achievements, innovations, and collaborations that define MNIT. Our success is a collective effort, and each member of the MNIT family plays a vital role in shaping the narrative of our institution.

Thank you for your continued support, dedication, and enthusiasm. Together, as we step into the new year, let us chart a course towards excellence and continue to inspire generations to come.

Prof. N.P. Padhy
Director, MNIT Jaipur

DEPARTMENT NEWS

Department of Architecture and Planning

- Dr. Yash Kumar Mittal is heading a project entitled “Building Urban Resilience to Fire Hazards through Planning and Design Optimization using Data Analytics”, in association with SPARC MHRD Govt. of India, which is expected to continue from 2023- 2025 and has received funding Rs. 66.97 lakhs.
- Dr. Nand Kumar is leading a research project entitled “Research Study of Udaipur Smart City Planning and Design Projects under SAAR Compendium 2.0” with the aid of Smart City Limited, Udaipur. The study is being conducted for the year 2023-24, and an amount of Rs. 6.60 lakhs has been granted for the same.

Department of Chemical Engineering

- Dr. Pooja Jangir is leading a project entitled “Inertial migration of particles in microchannels”. The project is fetching a grant of 35 lakhs by DST.

- Dr. Dipaloy Datta and Kritika Gautam presented a paper on “Use of Deep Eutectic Solvent for the Extraction of Mandelic Acid” at the 76th Indian Chemical Engineering Congress. The theme of the conference was “Energy Transition: Challenges and Opportunities”, and it was held at Heritage Institute of Technology, Kolkata from 27 to 30 December 2023.

- Dr. Dipaloy Datta presented a research paper titled “Solvent Impregnated Resin: A Potential Material for the Separation of Pollutants” at the International Conference on Technologies and Innovations for Sustainable Development (TISD-2023). The conference was held at MNNIT, Allahabad from 27 to 29 October 2023.
- Dr. Dipaloy Datta served as Session Chair at the 76th Indian Chemical Engineers Congress and International Conference (CHEMCON-2023), organized by the Indian Institute of Chemical Engineers at Heritage Institute of Technology, Kolkata from 27 to 30 December 2023.

- Dr. Dipaloy Datta served as Session Chair at the 3rd International Conference on Sports Engineering (ICSE 2023). The conference was hosted at BITS Pilani from 2 to 4 November 2023 and was organized in collaboration with the Sports Engineering Association, India.

Department of Chemistry

- Dr. Pawan Rekha is leading a project entitled “Acid-base bifunctional nanoporous hybrid catalyst for chemical fixation of CO2” and received a grant of Rs. 47.52 Lakhs from DST-SERB. The project will continue till 2026.
- Dr. Pradeep Kumar is leading a project entitled “Computational Modeling of Heterogeneous and Multiphase Chemistry in the Atmosphere,” which involves simulating and predicting the behavior of chemical reactions that occur in our atmosphere and has received a grant of Rs. 22.16 Lakhs by DST-SERB. This project will continue till 2027.
- Dr. Meena Nemiwal is working on a project entitled “Sustainable Solution for Toxic Metal Ion Pollutants in Water”, which focuses on a critical aspect of environmental protection and public health. This project received a grant of Rs. 27.81 Lakhs and is expected to continue till 2025.

Department of Civil Engineering

- Prof. SD Bharti is leading a project entitled “Earthquake Safety of Dams, Towards Implementation of the Dam Safety Act”. CWC India has granted the project an amount of 1000 lakhs.
- Prof. SD Bharti is leading a project entitled “Development of Type Designs of Aanganwaadi and Houses using Structural Steel, as part of Pradhan Mantri Awas Yojana towards Enhancing Use of Steel in Housing Sector”. The project has been granted 430 lakhs by the Ministry of Steel, Government of India.
- Dr. Amit Kumar is working on a project entitled “Assessment of bio-methanation potential for the state of Rajasthan”. The project has been granted 8.05 lakhs by the Department of local self-government (Municipal Corporation Jaipur Heritage).
- A patent entitled ”Transformation of fly ash into non-toxic, high water absorbing polymer for drought management” was filed by Dr. Abhishek Saha. The Government of India granted the patent on 28 November 2023.
- A patent entitled “Preparation of wearing course in bitumen roads employing cecabase emulsified warm mix asphalt” was filed by Dr. Sanchit Anand, Dr. Arun Gaur, and Mr. Shatrunjay Yash Singh on 11 December 2023.

Department of Computer Science Engineering

- The National Short-Term Course on “Artificial Intelligence and Machine Learning for Engineering and Social Science Research,” sponsored by IEEE CIS, was held at MNIT Jaipur from 4 to 8 September 2023.
- Dr. Mushtaq Ahmed participated as a jury member in the programme titled "Contribution of Indian Scientists and Scientific Institutions in the Indian Freedom Struggle: Prof. S.N. Bose". The event, organized by Vigyan Bharati, in collaboration with the Ministry of Culture, Govt. of India was held on 21 October 2023 at Arya College of Engineering and IT, Kukas, Jaipur.
- The Department organized the 5th International Conference on Communication and Intelligent Systems (ICCIS 2023) in a hybrid mode, from 16 to 17 December 2023.

- Dr. Neeta Nain was conferred the “Best Paper Award” at The Eighth International Conference on Computer Vision and Image Processing (CVIP 2023), held at IIT Jammu from 3 to 5 November 2023.
- Dr. Mushtaq Ahmed delivered a keynote speech on “Generative AI and Its Applications” at the First International Symposium on Data Science, held from 8 to 9 November 2023 at Manipal University, Jaipur.
- Dr. Mushtaq Ahmed delivered an expert talk on “Blockchain applications in the field of healthcare and communication” during the ATAL Faculty Development Programme (FDP) on integrating IoT and Blockchain to implement Smart Education, Healthcare, and Communication Systems, conducted from 11 to 16 December 2023 at Manipal University, Jaipur.
- The Department organized the IEEE ComSoc International Conference on Advanced Networks and Telecommunications Systems from 17 to 20 December 2023 at MNIT Jaipur.

Department of Electrical Engineering

- A patent entitled “Real-time power system transient stability assessment using a new data-driven technique" was filed by Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui, and Dr. Kusum Verma on 16 October 2023 at the Indian Patent Office, New Delhi.
- Dr. Prerna Jain was awarded an amount of US$5200 for conducting IEEE CIS Summer School under the aegis of the IEEE Computational Intelligence Society in 2023.
- Dr. Prerna Jain presented papers titled “Short-Term Electricity Price Forecasting by an Optimized LSTM Model of Deep Learning with Genetic Algorithm” and “Fair Pricing in Transactive Energy Management for Peer-to-Peer Trading: A Shapley Value Analysis Using Game Theory” during the 7th International Conference on Computer Application in Electrical Engineering-Recent Advances (CERA 23). held at IIT Roorkee from 27 to 29 October 2023.
- A patent entitled “single-phase transformer-less boosting inverters with leakage current elimination for photovoltaic application” was filed by Mr. Arun Verma, Mr. Sandeep N, Ms. Sangeeta Kumari, Ms. Manaswi, Mr. Udaykumar R Y and Mr. H R Pota. The Indian Patent Office granted the patent on 7 December 2023.
- The department, in collaboration with the Department of Electrical Engineering, SKIT Jaipur, organized an International Conference on Advanced Computing Techniques in Engineering & Technology (ACTET-2023), at SKIT, Jaipur from 18 to 19 December 2023.
- Dr. Akhilesh Mathur was awarded the Best Paper Presenter at the IEEE International Conference on New Frontiers in Communication, Automation, Management and Security (ICCAMS), conducted from 27 to 28 October 2023.
- Dr. Prerna Jain has been listed in Springer Nature as one of five Outstanding Women Researchers of MNIT Jaipur in their series, “Her Research, Our Future”.
- Dr. Vinay Pratap Singh was listed in the top 2% of Scientists in the world for research given by Stanford University and Elsevier.

Department of Electronics and Communication Engineering

- Vandana Pandya and Dr. Amit M. Joshi presented their paper titled "Novel Features Extraction From EEG Signals for Epilepsy Detection Using Machine Learning Model" at the IEEE Sensors 2023 conference, held from 29 October to 1 November 2023.
- Giriraj Sharma, Dr. Amit M. Joshi, and Saraju P. Mohanty presented their paper titled "Fortified-Grid 3.0: Security by Design for Smart Grid through Hardware Security Primitives" at the IEEE International Symposium on Smart Electronic Systems, held from 18 to 20 December 2023.
- KL Thakral Best Paper Award of the 9th International Symposium on Smart Electronic Systems (iSES-2023) was conferred to Devenderpal Singh, Priyanka Yadav, and Dr. Menka Yadav for the paper "A 2-bit Multiplication Operation using Si-SiGe-Si Channel FinFET 8T-SRAM cell" presented on 19 December 2023 at iSES-2023.
- Dr. Amit Mahesh Joshi is heading a project entitled "Onboard spectral preprocessing for multispectral image compression using FPGA." The project has received funding of Rs. 18.62 lakh from ISRO and is expected to continue till 2025.
- Dr. Amit Mahesh Joshi is leading a project entitled "iGLU Intelligent Glucose Measurement Device." The project has received funding of Rs. 10.5 lakh by DST and is expected to continue till 2025.
- Dr. Ritu Sharma is leading a project entitled "Design, Fabrication and performance Evaluation of Flexible Piezoelectric Biomechanical Energy Harvester." The project has received funding of Rs. 59.97 lakh from DRDO, Ministry of Defense, Govt. of India, and it is expected to continue till 2025.
- Dr. Kuldeep Singh is leading a project entitled "Development of techniques for data traffic based analysis of smart systems." The project has received funding of Rs. 103.49 lakh from DRDO, Ministry of Defense, Govt. of India, and it is expected to continue till 2025.

Department of Humanities and Social Sciences

- The Department of Humanities and Social Sciences, in collaboration with the Internal Complaints Committee (Women's Cell) of MNIT, organized an expert talk for all staff members of the institute on the theme, "Prevention of Sexual Harassment at Workplace: An Overview" on 8 December 2023. Dr. Vijay Laxmi Sharma, Professor of Law and Director, School of Law, Manipal University Jaipur, served as the expert speaker for the session and shared her expertise with the participants. The programme was graced by Prof. M.M. Sharma, Registrar, MNIT Jaipur. The event's primary objective was to enlighten the staff members about the provisions of the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013.

- Dr. Nidhi Bansal and her research scholar, Heena Choudhary, presented a paper titled “Women Empowerment Through Digital Inclusion: An Assessment of Digital Literacy Training Program in India”, at the All India Sociological Conference on “The Crisis of the 21st Century and the Way Forward”, held from 28 to 30 December 2023.
- Dr. Niraja Saraswat and her research scholar, Ms. Shubhangi Bhatnagar, presented a paper titled "Emotionally Mapping the Diaspora Intersectionality, Empathy, and Identity in Smriti Ravindra the Woman Who Climbed Trees", at the International Conference on Indian Diaspora Women and Patriarchy: Questions on Inclusion, Cultural Identity, and Violence, held at the University of Hyderabad, Hyderabad from 18 to 19 December 2023.
- Dr. Niraja Saraswat chaired a session on “Myth and Multiverse” at the International Conference on Mapping the Marvellous: Mythopoeia, Multiverse, and Fantasy in Literatures, Films, and Media, held at the University of Rajasthan, Jaipur on 21 December 2023.

Department of Management Studies

- The Business Analytics Club of the department organized an event titled “Business Analytics and Consulting in the Digital Age”. Nakul Sharma, Manager of Commercial Analytics, KMK Consulting, was the speaker for the session. He held an engaging lecture aimed at training students on the fundamentals of business analytics and consultancy, along with their real-world applications.
- Mr. Sanjeev Patni, a 1986 alumnus, and a distinguished Chartered Financial Analyst (CFA), graced SilverARCH Investment's event titled “Inside a Fund Manager's Mind: A Career Journey” as a guest speaker on 11 October 2023. During the lecture, he shared valuable insights drawn from extensive experience in the fields of the stock market, portfolio management, and finance.
- The Department, in collaboration with the Centre for Business and Social Research, New Delhi, conducted an Online Weekend Certificate Programme on “ESG and Sustainability Reporting from 17 November to 23 December 2023. The programme encompassed training sessions covering stakeholder mapping, engagement, and reporting frameworks, all based on the GRI Standards of 2021.

Department of Mechanical Engineering

- Dr. Manjinder Singh is currently involved in an innovative project titled “Design and Development of Loop Heat Pipe to Enhance Energy Efficiency via Waste Heat Recovery,” which has received a grant of Rs. 41 lakh from LAM Research and is expected to continue from 2023 to 2026. Additionally, he has successfully concluded a diode heat pipe project, supported by a Rs 1 lakh grant from ISRO.
- Dr. Manjinder Singh was awarded the prestigious SIRE fellowship during his visit to the Mathematical Institute at the University of Oxford, United Kingdom (UK).

- Dr. Amit Arora received a grant of Rs. 5 lakh from the District Industries and Commerce Centre, Jaipur, Government of Rajasthan, for his project titled "Thermo-mechanical characterization of lac blends and development of equipment for partial mechanization of bangle-making process". This project is expected to continue until 2024.

- Prof. Amar Patnaik has received a patent for his contribution to the advancement of a two-stage solid-gas reactor aimed at the cost-effective reduction of mill scale, along with the associated method. The patent was officially granted on 19 December 2023 by the Controller General of Patents, Designs & TradeMarks, Government of India.

- Dr. Harlal Singh Mali and Mr. Pawan Sharma filed a patent on 29 November 2023, at the Controller General of Patents, Designs & Trade Marks. The patent is centered on a carbon-aramid inter-yarn hybrid configuration for developing high-performance textile composite structural products.

- The International Conference on Sustainable Energy and Environmental Challenges (VIII SEEC) was held between 4 to 6 December 2023 at MNIT Jaipur.

- A National Short Term Course on "Numerical Discrete-Continuum-Modelling for dualistic (Karst) systems" was organized from 30 October to 3 November 2023 at MNIT Jaipur

Department of Metallurgical and Materials Engineering

- On 14 November 2023, Dr. Kunal Borse, Ishwar Sharma, Pratik Talekar, and Gaurav Kumawat filed a patent application for "Apparatus and Methods for Alternate Immersion Test" at the Patent Office, India.

Department of Physics

- Ms. Nishel Saini, Dr. Sanjay Kumar, Rohith Krishna, and Dr. Kamlendra Awasthi filed a patent on 4 November 2023 titled "Polyaniline-modified Silica Gel as Stationary Phase material in Gas Chromatography Column for the isolation of hydrogen and carbon dioxide gases" at the Controller General of Patents, Designs & TradeMarks, India.

- Dr. Manoj Kumar is leading a project as a mentor for Ph.D. students. The project is funded by DST, New Delhi. His team has been working on tuning electrical properties through magnetic doping in 3D topological insulators. The project has been granted Rs. 20 lakh and is expected to continue till 2028.

- Dr. Rahul Singhal along with Ms. Jyotsna Bhardwaj, is heading a project on "Impact of electronic and nuclear energy loss with moderate energy on metal-fullerene nanocomposite". The project, funded by the DST, New Delhi, has been granted Rs. 18.40 lakh and is expected to continue till 2026.

Materials Research Centre

- The Centre, in collaboration with Anton Paar, organized a one-day workshop on the topic "Microwave Assisted Material Synthesis" on 2 November 2023. The event included discussions on the basics and advantages of microwaves in the synthesis of different classes of materials, along with a practical demonstration of microwave reactors from Anton Paar.

- Dr. Bhagwati Sharma was invited to deliver a talk at the III International Conference on Nanomaterials in Biology (ICNB-2023) held from 19 to 22 November 2023. The invited talk was titled "Biomolecule-Coordinated Multifunctional Sumolecular Metal-Organic Gels" and focused on the use of biomolecules as ligands for the generation of supramolecular metal-organic gels. These gel materials have been used for various applications like drug delivery, antimicrobial agents, artificial enzymes, soft electronic devices, catalysis, etc.

- Dr. Bhagwati Sharma was invited as a Guest of Honor in the inaugural ceremony of the one-week ATAL Faculty Development Program on "Recent Development in Nano-electronics Devices: Challenges and Opportunities" sponsored by the AICTE Training and Learning (ATAL) Academy and organized by SKIT Jaipur on 11 December 2023.

MNIT Innovation and Incubation Centre

- Entrepreneurship Development Cell organized "Startup Stumper," an entrepreneurial quiz on 4 November 2023, during Sphinx 2023. The quiz consisted of three rounds, namely Mentiquiz, Rapid Fire, and intense buzzer battles. The event boasted a generous prize pool of Rs. 5,000 from the MNIT Innovation and Incubation Centre (MIIC).

- The Centre joined hands with Rajasthan Renewable Energy Corporation Ltd. (RRECL) for the "Energy Champ Start-Up Seed Support", a workshop designed exclusively for the business refinement of start-ups operating in the dynamic and ever-evolving field of energy efficiency on 8 November 2023. The workshop offered invaluable insights, mentorship, and networking opportunities, allowing energy innovators to refine their business proposals, connect with industry experts, and set the stage for future growth.

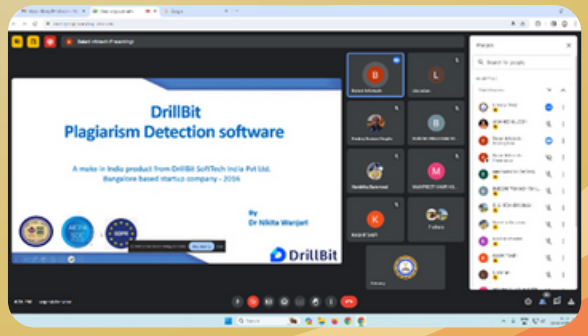
- The Center hosted students registered at JNV Hurda as knowledge partners under DST's "Vigyan Jyoti Program" on 30 November 2023. The students visited MIIC, Tribology Lab, and attended the career guidance session by TEDx speaker Mr. Vikram Sharma. Dr. Sanjay Gaur, SOM-MIIC, explained the functioning of the incubation centre to the students.

Central Library

- On the occasion of Rashtriya Ekta Divas (National Unity Day), Central Library organized a poster and book exhibition from 30 to 31 October 2023. The books, both in Hindi and English, on the life and works of Sardar Vallabhbhai Patel were exhibited in the library premises.

- The Central Library organized Book Exhibitions in all departments of MNIT for the smooth procurement of physical books by students and faculty members. Impaneled vendors were invited to display the books from 25 September to 30 November 2023. After a favourable response from the attendees, the procurement of new books has been initiated by the library.

- The central library organized an online training session on “DrillBit: plagiarism detection software” for the students and faculty members on 13 December 2023. The resource person for the session was Dr. Nikita Wanjari, Relationship Manager and Science Communicator-Academic & Corporate, Balani Infotech Pvt. Ltd.. She gave a brief introduction about the tool, its plagiarism detection potential, and features provided by DrillBit through a live demonstration of the software on the classroom management folder. The session ended with Mr. Sachin Katagi delivering the vote of thanks on behalf of the institute.



CAMPUS BUZZ

- Mr. Anurag Kumar, a distinguished alumnus of the batch of 1987, unveiled his latest book titled, “Forever Bound” at an event held in Neeti Sabhagar, on 19 October 2023. The event was graced by Prof. N.P. Padhy, Director, MNIT Jaipur. Students, Faculty members, alumni peers, and book enthusiasts were all present and immersed in a celebration of words and creativity.

- MNIT Jaipur organized Rajasthan’s largest techno-management fest **“SPHINX’23"**, from 3 to 7 November 2023, at MNIT Jaipur. Thrilling flagship events, such as the Treasure Hunt and Crisis Resolution Competition, AeroQuest RC planes competition, and Robowars, along with multiple club and department events, engaged the participants in strategic challenges, and winning exciting prizes.

Teams from various colleges and universities across the country showcased their skills, by participating enthusiastically in multiple flagship, club, and department events, leading to victorious moments for talented teams securing coveted cash prizes and awards. The inaugural ceremony of Sphinx 2023 was chaired by Prof. N. P. Padhy, Director, MNIT Jaipur. He emphasized the vital role of technology and management in shaping our world. Prof. Mahesh Kumar Jat, Dean of Student Welfare, motivated the students with his encouraging words, and Dr. Nisha Verma, Coordinator of Technical Societies, provided an overview of the exciting events that the fest will unfold. The fest also witnessed the unveiling of the 'Sphinx 2023' booklet, with a commemorative token presented to the Director.

- The evening of Day One concluded with a sensational “Pronite”, in which DJ Carnivore, the invited artist for the event, set the stage on fire with his electrifying beats and chart-topping tracks, leaving the audience awestruck. A special memento was presented to him by MNIT Jaipur as an acknowledgment of his illustrious performance.

- The Wellness Team, Dean Student Welfare Office, organized a special workshop on the topic “The Wellness of Your Mind: An Insight into Vipassana Meditation” on 1 November 2023, at Neeti Sabhagar. The students, staff, and faculty members attended the session, conducted by Shri Dinesh Malpani from Jaipur Vipassana Meditation Centre. Vipassana meditation technique is deeply rooted in the teachings of Buddha and offers a practice of non-judgmental self-observation, potentially leading to enlightenment.

- The Executive Committee of MNIT Jaipur Alumni Association (MNITJAA) hosted the Alumni Awards Ceremony at the Central Lawn, MNIT Jaipur campus on 24 December 2023. The day-long event consisted of felicitation of prestigious alumni members, along with a cultural program to celebrate the achievements and contributions of alumni to the institute. Prof. N. P. Padhy, Director, MNIT Jaipur, Prof. Rakesh Jain, Dean of International & Alumni Affairs, Mr. Devraj Solanki, and Dr. Nand Kumar, graced the occasion and extended a heart-warming welcome to the alumni and their families. The retired faculty members of the institute were also felicitated in recognition of their years of dedicated service to the institute.

- A total of 19 awards across four categories were awarded to a large number of alumni members, felicitating them for their accolades and commitment to their respective fields. Several major awards namely, MNIT Lifetime Achievement Award, Prof. V Srinivasan Memorial Award, Distinguished Alumni Award, Young Achievers Award, and Outstanding Service Award were presented to the distinguished alumni of the institute.

- Lifetime Achievement Award was awarded to Mr. Nanua Singh (1971 batch), Mr. Chandra Sekhar (1983 batch), Mr. Mahendra Kumar Banthia (1974 batch), Mr. Jagdish Mishra (1971 batch) and Mr. Heeralal Samariya(1982 batch). The Distinguished Alumni Award was awarded to Mr. Sanjay Sharma (1988 batch), Mr. Ravindra Jain (1985 batch), Mr. Yash Lala (1988 batch), Mr. Sanjeev Seth (1987 batch), Mr. Naresh Thadhani (1979 batch), Mr. Praveen Kumar (1987 batch), Mr. Om Prakash Yadav (1986 batch), Mrs.Seema Agarwal (1987), Mr. Ravinder Bhakar (1998 batch), and Mr. Natarajan Raman (2003 batch). The Prof. V Srinivasan Memorial Award was awarded to Mr. Subhash C. Gupta (1986 batch). The Young Achievers Award was awarded to Mr. Bharat Galwani (2010 batch), Mr. Anish Modi (2008 batch) and Mr. Abhishek Mishra (2009 batch).

STUDENT CORNER

In Conversation with Gaurav Mittal

as told to Subhrajit Roy (Newsletter Team)

The tremendous success of the student interview published in our previous issue has inspired us to present a new edition of this special segment.

In this edition, we approached one of our accomplished alumnus, Gaurav Mittal, who has achieved remarkable milestones in research since his undergraduate program. Gaurav, a graduate of the 2023 batch, has secured an outstanding research opportunity at the National University of Singapore. He has also recently received an offer from the prestigious Imperial College of London.

Impressed by his dedication, we are excited to share an interview with him on behalf of all aspiring students.

1. What steps did you take to prepare for the internship, both in terms of understanding the ongoing projects at the university and enhancing your research skills?

To prepare for the internship, I engaged in hands-on research with professors post-COVID lockdown, acquiring essential research tools and skills. Actively participating in diverse projects enhanced my proficiency in various software applications, strengthening my overall research capabilities.

I delved into the professor's background for interview readiness, studying their prior research works and ongoing projects.

2. Have you engaged with any specific literature, methodologies, or tools that might be relevant to the research projects you were involved in during the internship?

During my internship, I actively immersed myself in the relevant literature and adopted essential methodologies and tools crucial for research. Exploring research publications laid the foundation, while hands-on experience with tools such as COMSOL and MATLAB enhanced my proficiency. This approach ensured a comprehensive understanding of the project's requirements, enabling me to contribute effectively to its success.

3. Can you discuss any challenges or uncertainties you foresee in transitioning from undergraduate research to a more advanced research environment, and how did you address them?

While transitioning from undergraduate research, I faced challenges like increased complexity, independence expectations, and unfamiliar methodologies. For instance, while working on Photocatalysis simulations, a novel area for me, I addressed these challenges by reviewing related publications, seeking guidance from experienced lab members, and acquiring proficiency in tools like MATLAB to efficiently handle substantial data, ensuring a more effective and independent approach to my work.

4. Could you elaborate on the key findings or outcomes of your undergraduate research and how they contributed to the broader field?

Throughout my undergraduate studies, I engaged in various projects in aerospace materials and energy technology, collaborating with professors in my department, Materials Research Centre, and the Centre for Energy & Environment. These endeavours resulted in authored and co-authored research publications (3 published, six under review in journals, 5 in preparation), which will significantly contribute to advancing the research in their respective fields. Notably, the project on Superalloys, funded by GTRE Bangalore (DRDO), holds particular significance as its outcomes are poised to advance defence aircraft engines, contributing to our national security.

5. How was adapting to the research culture and environment at NUS different from MNIT?

Unfortunately, due to circumstances beyond my control, I couldn't join the internship on time. So, instead of wasting this opportunity, I discussed it with the professor and convinced him to let me research remotely on COMSOL simulations. Still, I had regular online meetings with the research team there, and it was great working with them.
The team exhibited a shared passion for research, but their strategic focus on practical applications and market integration distinguished the NUS research environment, highlighting a commitment to real-world impact.

6. How do you envision the internship contributing to your personal and professional development, and what skills did you enhance during this experience?

This internship has been pivotal in shaping my personal and professional growth. It directly facilitated my acceptance into prestigious Material Science and Engineering graduate programs, marking a significant stride in my academic journey. Engaging in advanced research honed my teamwork abilities and collaborative skills, which are crucial in the scientific community. Moreover, I increased my proficiency in essential software tools such as COMSOL and MATLAB, equipping me with valuable technical expertise. This transformative experience not only propelled my academic pursuits but also fortified my skills, laying a solid foundation for a successful career in the dynamic field of materials science.

Beyond Words: Mastering the Art of Writing SOPs

-Riya Chawla, Research Scholar, Dept. of HSS
Contact at: riyachawlaa03@gmail.com

In academic and professional contexts, a Statement of Purpose (SOP) holds paramount importance as it is an essential component of applications beyond academic transcripts and test scores. The SOP is a comprehensive document articulating an applicant's motivations, aspirations, and qualifications, providing insights into their character, and goals, and aligning with the chosen program or job. It offers an opportunity to convey an individual's narrative beyond academic achievements, providing unique perspectives, experiences, and skill sets that distinguish them from other applicants. A well-crafted SOP demonstrates a clear and purposeful connection between the personal and academic/professional journey and the opportunities individuals seek. making a compelling case for why they are the best candidate for the program or position.

The most important thing about the SOP (or personal statement) is that it ties together grades, and test scores, and expands upon it, giving admission officers a much more expansive window into who you are as a student and a person. The letter will tell them “who you are” and “what you want to be” in a much more detailed and personal way than the other components in the application package.

What is the difference between a Statement of Purpose (SOP) and a Personal Statement?

A personal statement serves as a comprehensive reflection of your identity, extending beyond a mere description to provide a more personalized and expansive account of who you are. It delves into the intricacies of your character, elucidating how and why you are well-suited to pursue a particular course and positioning yourself as the ideal candidate. This justification of your candidature not only links you intimately to the course but also explicitly outlines how your unique qualities, experiences, and acquired skills align with and can contribute to fulfilling the requirements of the program.

The SOP revolves around your aspirations and delineates your intentions in a particular field of study. It is inherently study area-oriented, providing a focused narrative that articulates your motivations for choosing a specific area or subject of study. Within this context, the SOP serves as a platform to elucidate the reasons behind your desire to delve into a particular field, offering a justification for your expertise, specialization, and skill set relevant to the chosen study area or subject. By establishing a clear link between the course and yourself, the SOP effectively communicates how your distinct credentials align with and address the specific demands and expectations set forth by the program.

What are the basic questions you should answer in your SOP?

Questions that should be answered in your SOP:

- WHO are you (as a person and a student)?
- HOW did you become interested in this topic/field of study?
- WHAT have you done so far in the field of your choice?
- WHY/HOW do you want to study this field?
- WHY do you want to study at this university/program?
- WHY are you a good fit?

In Conversation with: Ashwin Rejikumar and Swetha Kozhipurath

as told to Pratyush Bhosekar (Newsletter Team)

Sphinx was an event enjoyed by all. From the flagship events to the Pronites, the event witnessed overwhelming participation. Curious to uncover what went on backstage during the organization of this event, we decided to take a peek behind the curtains. For this edition, we interviewed the core team that made Sphinx 2023 possible.

The following is an interview with Ashwin Rejikumar, the President of the Technical Society, who is currently in his third year pursuing a B. Tech degree in Electronics and Communication Engineering. We also spoke with Swetha Kozhipurath, the technical society vice president, who is in her third year pursuing a B. Tech degree in Computer Science & Engineering.

1. How did you prepare for your role in the core team of Sphinx?

Ashwin: In order to prepare for my role, I had to sharpen a few of my skills, such as team building and communication. I took part in some of the events held by the various clubs in MNIT and then proceeded to get the position of Joint Secretary in the Data Science Club, where we organized an event of our own.

Swetha: My past experiences and positions of responsibility helped prepare me for my role in Sphinx. I organized the orientation for the 2023 batch, was involved in various inaugural and closing ceremonies as the anchor, and worked closely with the DSW office, which helped me prepare for the work I was expected to do.

The various events I volunteered in since my first year, from arranging small events in ELAC and conducting events in Blitz to being a part of the volunteering team in Sphinx in my second year, all helped me land my role as Vice President.

2. What were your expectations of the position you applied for, and did they match up to what you did?

Ashwin: My expectations of the role were to work with a brilliant team to create and curate a fantastic festival that all ages would enjoy, especially the students, while overcoming day-to-day challenges. My expectations were surpassed in all regards. The challenges we faced throughout pushed me to make decisions that some would label as “risky,” but we as a team adopted a motto, “Hard work can beat anything,” and a little addition of risk to that is what ultimately helped us achieve what we did.

Swetha: My expectations were to manage a team of 300+ students, keep track of all the office documentation and be a point of contact between the student body and the faculty. All in all, my expectations with regard to my duties were met and sometimes surpassed them, too.

3. Can you give a brief explanation of the duties/tasks you needed to perform for your role in Sphinx?

Ashwin: The tasks and duties, although set, weren’t confined to any one person or group. Most of the tasks or decisions I had to make were on the spot. The tasks included ensuring that the clubs under the society were active, then helming a team of around 40 students and making sure they were following deadlines while maintaining quality.

I had to act as the link between the student community and the faculty, so decisions being made by the team had to be presented to the faculty to get their approval. I also had to ensure that the team of 150+ volunteers were working diligently towards achieving one goal as one family.

Swetha: I had to submit a weekly update regarding the Sphinx team, ensure various documents were approved and up to date, and conduct daily meetings with the technical coordinator and various faculty members to make sure there was communication throughout the organizing parties. I also had to coordinate with the general secretaries of multiple clubs to ensure their events ran smoothly.

4. What challenges did you face as a part of the Sphinx core team?

Ashwin: One challenge that I can think of was acquiring sponsorships, as this was the first time in four years that a technical fest of such a large scale as Sphinx was happening. Convincing sponsors with no proven data was quite a task. Another challenge was to create awareness about the technical clubs to everybody that were otherwise very dormant.

Other challenges included the mid-semester break, which made it difficult for most of the volunteers to participate in the planning process, so our workforce was reduced.

Swetha: It wasn't an easy journey, and we, as a team, faced rejections and relentless challenges every day.

It took a tremendous amount of effort for the core team to create a positive environment for each other throughout the few months that we worked together. At times, it would be hard not to take the rejections personally, but we pushed through it all.

5. What, according to you, was the best part of being in the core team?

Ashwin: The best part of being in the core team was the people I met. The team and the advisors have become a part of my family. The challenges I faced and overcame, from the long nights to even lengthy days spent with my team, have genuinely been some of the best times I've experienced.

Swetha: For me, the core team itself was the best part of being in the team. There won't ever be another Sphinx '23. There can be a better or a worse version. Still, what we had as a team is irreplaceable and incomparable to anything that I have experienced in my life so far, and if I could do it over again, I would want the same people with me doing it.

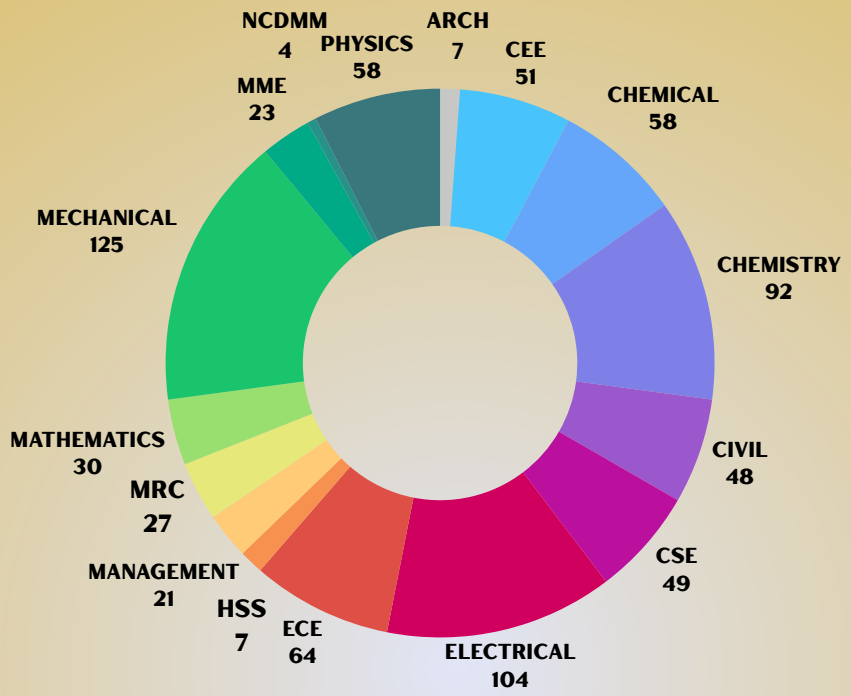
6. For those who are planning to apply for the same role next year, do you have any pieces of advice?

Ashwin: Be ever-present, and be sure to make your mark. Be yourself throughout the process, from the interview to the day the festival ends. Making sure everyone feels heard and part of the team is non-negotiable and is probably the most challenging part. So, best of luck to you, and may you make a great Sphinx that people will remember for years to come.

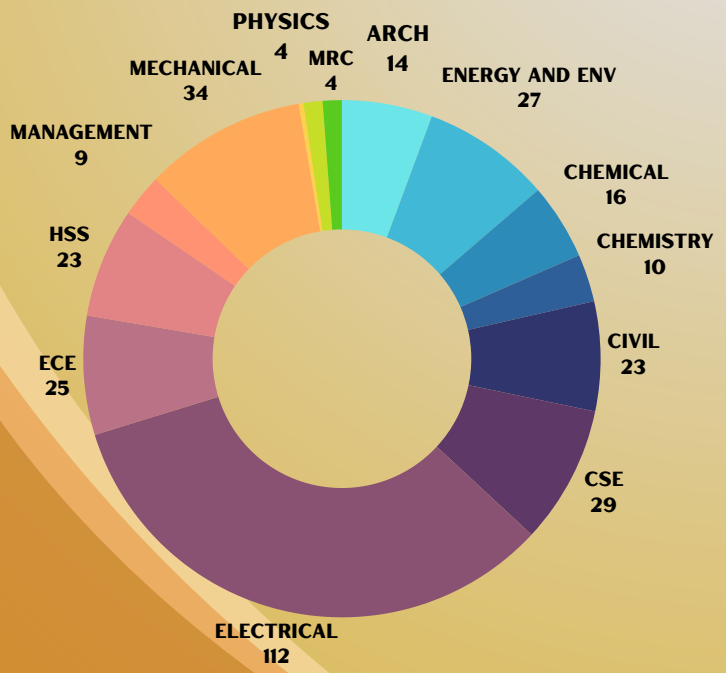
Swetha: The first thing is to be able to handle yourself as a leader. You must be ready to face rejection after rejection before finally meeting success. On your journey, you will meet many lovely people, but you will also meet rude and obnoxious people. You must be prepared to handle yourself professionally, no matter what. Although it can be challenging at times, the role of a leader develops your character a lot, so I would like as many people as possible to try and get into leadership roles because you will not regret it.

RESEARCH PUBLICATIONS (2023)

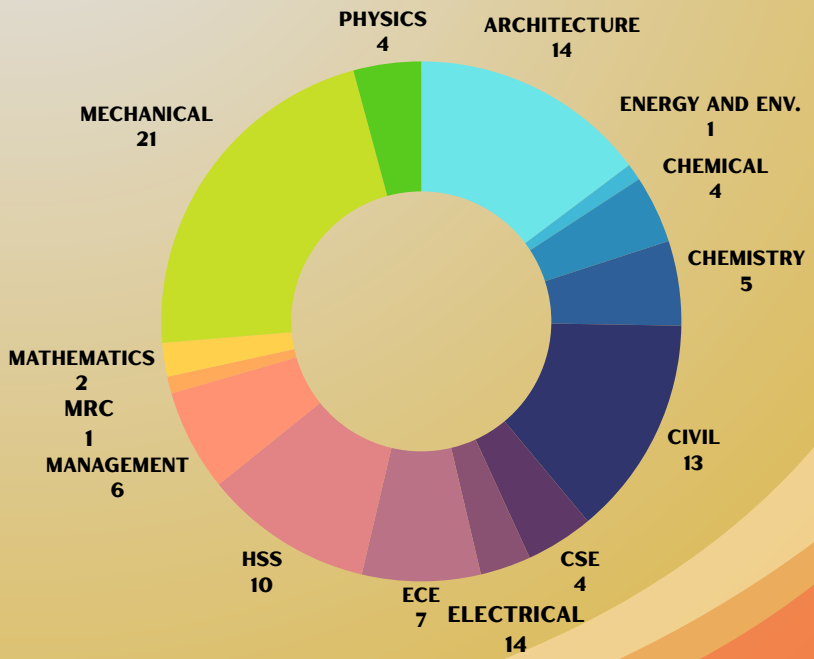
Journal Publications



Conference Publications



Book/Chapter Publications



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