



BITS Pilani
Pilani Campus

Semester-II notes 2022-23

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Pilani Campus



Editorial

This edition brings to you some great stories! Our Chancellor, Mr. Kumar Manglam Birla was conferred the Padma Bhushan award, India's third-highest civilian award, by the President of India Droupadi Murmu at a ceremony in the Rashtrapati Bhavan. Prof. Chandra Shekhar was honored with the Lifetime Achievement Award by the Vacuum Electronic Devices and Applications Society of India. We had the honor of having Dr. Soumya Swaminathan, Chairperson, The MS Swaminathan Research Foundation, and the former chief scientist at WHO, as the chief guest, at the convocation ceremony. In the students' arena, the CRISS Robotics team secured 1st position earning them a \$1,000 cash prize at the International Rover Design Challenge (IRDC) 2023. Another team "Inspired Karters Gravity" participated in Human Exploration Rover Challenge at NASA Marshall Space Flight Center, U.S.A. They bagged #1 Project Review Award and secured an impressive 12th position among 61 international teams from 8 countries.

It is equally heartening to share that the Department of Science and Technology (DST), the Government of India, under its "Technology Enabling Center (TEC) in University System" initiative, has selected BITS Pilani to establish the first regional BITS-TEC in Rajasthan. This initiative comes with a funding support of 4.7 Crore for a period of five years. BITS Pilani and FARE Labs Private Limited, India have signed an MOU to collaborate in scientific areas of mutual interest and capabilities, education, and exchange of students, faculty, and staff. "Ajay Upadhyaya Centre for Financial Markets Education" has also been inaugurated, a platform to offer deep-seated knowledge of financial markets.

Several significant conferences, workshops, lecture series and distinguished talks were organized by different departments in this semester. We also had a huge number of research projects sponsored by agencies like Ministry of Electronics & Information Technology, ToHealth GmbH Berlin, Germany, DRDO, SERB, DSCI (Data Security Council of India) and many more.

Hope you enjoy reading some of the remarkable achievements of this edition!

74th Republic Day Celebrated

The 74th Republic Day was celebrated in BITS Pilani. Pilani campus on January 26, 2023. The program began with the National song. Prof. Souvik Bhattacharjya, the former Vice Chancellor, BITS Pilani, hoisted the flag. Prof. Sudhirkumar Barai, Director, Pilani campus, Col. Soumabrata Chakraborty (Retd.), Registrar, and Prof. S.K. Verma, Dean, Administration also graced the event. Many faculties and students attended the program. The Guard of Honor was given by Mr. Kishore Singh, Chief Security Officer, and his team. The fervor of patriotism, unified diversity, and rich cultural heritage of India was beautifully brought forth through the poems recited by Prof. Shilpi Gara and songs sung by students under the guidance of Dr. Anil Rai. The National Pledge, an oath of allegiance to the Republic of India, was administered by Ms. Ananya. The program ended with the National anthem sung with enthusiasm by all.

Glimpses of Republic Day Celebrations



Mr. Kumar Mangalam Birla receiving the Padma Bhushan from the President of India

The Padma Bhushan Award conferred on Mr. Kumar Mangalam Birla, Chancellor, BITS Pilani

Mr. Kumar Mangalam Birla, Chancellor, BITS Pilani, was honoured with the prestigious Padma Bhushan award by the Honourable President of India, Smt. Droupadi Murmu, in a grand ceremony held at the Rashtrapati Bhavan in New Delhi on March 22, 2023. The award is a testimony to his remarkable journey as an industrialist, businessman, and philanthropist.



Seven-day workshop on Advanced Characterization Techniques in Condensed Matter

The Department of Physics, in collaboration with Amity University Noida, hosted a 7-day workshop “Advanced Characterization Techniques in Condensed Matter” on January 17, 2023. This event was held under the auspices of the Department of Science and Technology (DST), Government of India, as part of the Synergistic Training Program - Utilizing the Scientific and Technological Infrastructure (STUTI). Distinguished scientists, faculty, BITS Pilani, and a representative from Amity University graced the inauguration. About thirty participants from across India joined the event. Prof. Raj Kumar Gupta,

convener of the event, delivered the welcome address. Prof. Sudhirkumar Barai, Director, Pilani Campus, emphasized the significance of analyzing experimental findings. The Chief Guest, Prof. K.A. Suresh, Former Director, Centre for Nano and Soft Matter Science, Bangalore, and Emeritus Professor at RRI, Bangalore, shed light on the various facilities offered by DST under the STUTI Scheme. Prof. Santanu Kumar Pal, FRSC, IISER Mohali emphasized the importance of various characterization techniques. Prof. Rakesh Choubisa, Head, Department of Physics, provided an overview of the research activities of the department and a vote of thanks was delivered by Prof. Manjuladevi V., Co-convener of the event.

Participants at workshop



Founder's Day Celebrated

With great passion and enthusiasm, BITS Pilani celebrated its 72nd Founders Day on January 26, 2023 (Basant Panchami) in the institute premises. The day commemorates the inauguration of Vidya Vihar Campus in 1951 by Dr. Rajendra Prasad, the First President of India. Prof. Souvik Bhattacharyya, the former Vice Chancellor, BITS Pilani along with other esteemed faculty members, paid floral tributes to the Founder Chairman, Late Shri Ghanshyam das Ji Birla. Following this, a Thyagaraja Aradhana, organized by Ragamalika, featured students reciting classical "Kritis" by Saint Thyagaraja. A grand cultural event in the evening showcased diverse regional dance and musical performances, reflecting India's rich cultural tapestry.

A felicitation program honoring the distinguished services of teaching and non-teaching staff, who completed 25 years or more of dedicated services, was also organized. 7 Best Performance awards and 15 Certificates of Appreciation were also given to selected non-teaching staff for their outstanding contributions in the functional administration of the Institute. 10 non-teaching staff who will be retiring this year were also felicitated as a token of appreciation for their committed service to the Institute.

Saraswati Vandana



Founder's Day activities



Symposium-cum-workshop on Drug Delivery and Translational Research

The Department of Pharmacy organized a symposium-cum-workshop themed "Advances in Drug Delivery and Translational Research" during February 25-26, 2023. The event blended physical and virtual participation, engaging a robust cohort of 165 students from 28 distinct academic institutions. Prof. Sudhirkumar Barai, Director, Pilani Campus emphasized the pivotal role of pharmaceuticals and institute's efforts in fortifying the healthcare ecosystem for the broader societal good.

Experts from Industry-Academia



The gathering witnessed the experts from both industry and academia and provided a vision to meet the Sustainable Development Goals outlined by the World Health Organization. Distinguished speakers from industry included Dr. Rashmi Ranjan Panda, Mankind Research Centre, Ms. Ruchi Singh Neekhara, Cerelia Nutritech Pvt Ltd., and Mr. Ashutosh Trivedi, Pharmazz India Pvt. Ltd. Prof. Gaurav Jain, Delhi Pharmaceutical Sciences and Research University, Prof. Kaisar Raza, Central University of Rajasthan, and Dr. Kamlesh Tiwari from BITS Pilani were the speakers from academia.

The event also offered an enriching hands-on training session on "Quality-by-Design" using innovative JMP software. It was conducted by Dr. Muralidhara A. and Dr. Chandramauli R. A life science hackathon session, spearheaded by Dr. Karthik Ramesh from EMIDS, provided participants with a unique and interactive learning experience. The symposium was supported by EMIDS, and the Chromatography Supplier, Delhi. The event received an overwhelming response and resounding success under the convenorship of Dr. Gautam Singhvi and Dr. Murali Manohar Pandey.

A talk by Mr. Arvind J. Singh (Pilani, 1983-1987) hosted by Alumni Relations Division

BITS Pilani Alumni Relations Division hosted a talk of Mr. Arvind J. Singh (Pilani, 83-87), an entrepreneur, investor, and philanthropist on April 12, 2023. Mr. Singh shared

valuable insights from his entrepreneurial journey, focusing on funding a venture across different phases.

Mr. Singh emphasized that entrepreneurship transcends mere profit-making; it's about creating meaningful impact and enriching lives. He stressed the importance of aligning with passionate, like-minded founding teams sharing common vision and values.

The session was enlightening, offering students a wealth of practical knowledge. Prof. Arya Kumar, Dean, Alumni Relations, warmly welcomed Mr. Singh for his visit to the alma mater. The talk encompassed themes of entrepreneurship, investment, philanthropy, and a strong sense of BITSian pride, all of which were covered during the interaction.

Talk by Mr. Arvind J. Singh



Lecture Series on Insights from Pharmaceutical Industry Experts: Advancements in Formulation and Analysis

The Department of Pharmacy hosted a one-day Industry Expert Lecture Series titled "Insights from Pharmaceutical Industry Experts: Advancements in Formulation and Analysis" on April 28, 2023. Prof. Anil Gaikwad, Head, Department of Pharmacy, shared his views on the theme.

The event offered a comprehensive overview of recent developments in pharmaceuticals, nutraceuticals, and film coating technology. Seven distinguished industry experts Mr. Shantanu Damle, Technical Director, South Asia, Colorcon, Goa, Mr. Prem Prakash Singh, Director, Formulation Development, Slayback Pharma, Hyderabad, Mr. Abhijeet Upadhye, Manager FnD, Torrent Pharmaceutical Ltd. Ahmedabad, Mr. Gurmeet Singh, Senior. Manager, Micro Labs Ltd. Bangalore, Mr. Saswata Banerjee, Senior Formulation Scientist, Complex Injectable, IPDO, Bachupally campus, Dr. Reddys Laboratories Ltd., Hyderabad, Mr. Amit Kumar Jha, Manager, Kenpack Pharma, Mumbai, and Mr. Mukesh K Gahlot, Senior. Manager R&D, Sarvotham Care Ltd., Hyderabad presented their views and insights on a broad range of topics such as impurity profiling, complex injectables, and nutraceutical product development.

Participants at Industry Expert Lecture Series



The event provided a valuable opportunity for attendees to interact with industry leaders and network with fellow professionals. The lectures not only offered unique perspectives on various industry aspects but also served as a platform for knowledge exchange on the latest advancements. The Industry Expert Lecture Series was an outstanding educational event, enriching attendees with contemporary knowledge and a better understanding of the pharmaceutical and nutraceutical industries. Prof. Anil Jindal extended his gratitude to the speakers and participants for their contributions to the event's success.

Lifetime Achievement Award for Prof Chandra Shekhar

Prof. Chandra Shekhar was honored with the "Lifetime Achievement Award for 2021" by the Vacuum Electronic Devices and Applications Society of India during CEERI's One Week One Lab event on May 16, 2023. Prof. Chandra Shekhar obtained his M.Sc. and Ph.D. degrees in Physics from BITS Pilani. He served as the Director of CEERI, and is currently a senior professor Emeritus at BITS Pilani.

Prof. Shekhar played a pivotal role in shaping and implementing national initiatives in Microelectronics research and education in India under the Department of Electronics, Govt. of India. He pioneered the application of VHDL and synthesis-based VLSI design methodology across academia, industry, and strategic sector R&D in the country.

The Lifetime Achievement Award for Prof. Chandra Shekhar



His contributions have been recognized with numerous awards, including the UNESCO/ROSTSCA Young Scientist Award in 1986, the CEERI Foundation Day Merit Award in 1988, the ISHEER Science Councilor Award in 2005, the Prof. L. K. Maheshwari Foundation Distinguished Alumnus Award in 2010, the Doctor of Science (honoris causa) by NIT Kurukshetra in 2012, and the IETE Diamond Jubilee Gold Medal award in 2013.

An MoU between BITS Pilani and FARE Labs (P) Ltd.

BITS Pilani and FARE Labs Private Limited, India have signed an MOU to collaborate in scientific areas of mutual interest and capabilities, education, and exchange of students, faculty, and staff. The two organizations will jointly work in fields of Testing, Calibration, and Proficiency Testing. The MoU was signed on May 20, 2023, at the Pilani Campus, with the Director of FARE Labs, Mr. C. S. Joshi, and Col. Soumyabrata Chakraborty (Retd.), Registrar, BITS Pilani. Prof. V. Ramgopal Rao, Vice-Chancellor, BITS Pilani, and Mr. D. Mathur, Director, FARE Labs Private Ltd. led the initiative with other senior members of both organizations present. Senior faculty members of Dubai, Goa, and Hyderabad Campuses of BITS Pilani joined the program through a telepresence facility.

Signing Ceremony



The collaboration involves participation in Certified Reference Materials (CRM), Pharma, Ayush, Food Science and Engineering, Bioscience and biotechnology, Chemical Sciences and Chemical Engineering, Environmental Science and Engineering, Civil and Mechanical Engineering, and other disciplines of mutual interest. Both organizations also plan to launch certificate programs of six months and diploma programs of one year around quality, standards, food safety, and carbon neutrality. BITS Pilani and FARE Labs will also initiate joint research programs to address global challenges on water, environment, pollution, climate, etc.

Convocation 2023

BITS Pilani, Pilani Campus held its Convocation ceremony on July 30, 2023, for graduating students of First Degree, Higher Degree, and Ph.D. Programs. 1461 students received their degrees out of which, 1000 (205 girls) completed their undergraduate degree, 380 (105 girls) completed their postgraduate degrees, and 81 (34 girls) completed their doctorate degrees. Mr. Pratheek Ranjan Mitra, Mr. Kushagra Pipraiya, and Ms. Jasleen Kaur Bheora, received the Gold Medal, Silver Medal, and Bronze Medal, respectively, for their academic performance throughout four years at BITS Pilani.

Dr. Soumya Swaminathan, Chairperson, The MS Swaminathan Research Foundation and Former Chief Scientist at WHO, was the Chief Guest of the ceremony. She urged the students to use technology, including digital technology rationally and ethically in healthcare. New technologies come with their own social, cultural, legal and ethical challenges and need a societal debate to arrive at a consensus on how best to use them, maximizing benefits and minimizing harm.

Mr. Kumar Mangalam Birla, Chancellor, BITS Pilani, in his message to the outgoing students, shared four principles of pioneering leadership. He encouraged them to be curious, take the long view, lead with their inner conviction, and build their own band of co-travelers. He reminded them that

India is in a unique moment in its evolutionary curve as a nation, and there has never been a better time to be young and well-qualified in a country bursting with entrepreneurial energy.

Prof. V. Ramgopal Rao, Vice Chancellor, BITS Pilani, and Prof. Sudhirkumar Barai, Director, Pilani campus presented their reports. Prof. V. Ramgopal Rao inspired the graduating students to remain life-long learners, keep their childlike curiosity and inquisitiveness to learn, and be creative in their thinking. He reminded them to get out of their comfort zones and interact with people. Prof. Barai highlighted and commended the achievements of both the students and faculty.

Students during convocation 2023



The alumni awards presented during the convocation included the BITS Ratna Award 2023 which were conferred on Mr. Rakesh Kapoor, a Chemical Engineering graduate from BITS Pilani in 1980 and the Global CEO of Reckitt and Benckiser, and Mr. Rakesh Verma, a Mechanical

Engineering graduate from BITS Pilani in 1995 and the founder and Chairman of MapmyIndia.

In the category of Academia and Research, Prof. M. Balakrishnan, Department of CSE, IIT, Delhi; Prof. Kannan Rangaramanujam, Co-Director, Center for Nanomedicine

and Professor of Ophthalmology, Johns Hopkins School of Medicine; Prof. Rahul Telang, a Trustees Professor of Information Systems at the Heinz College at Carnegie Mellon University and the Tepper School of Business; and Prof. Suvrajeet Sen, a Professor of Industrial and Systems Engineering and Electrical and Computer Engineering at USC Viterbi School of Engineering.

In the category of Corporate Leadership, Padma Shri Pratap Pawar, the Chairman of Sakaal Media Group; Mr. Amur S Lakshminarayanan, the CEO of Tata Communications; Mr. Rajiv Srivastava, the Managing Director of Redington Ltd.; and Ms. Sarbani Bhatia, the Sr. Vice President of IT at Dainik Jagran were awarded.

In the category of Entrepreneurship/Public Life/Philanthropy, Mr. Cuckoo Kochar, the Founder, and president of DCR Phoenix Group, Ottawa, Canada, and Mr. Anil Singhal, the Co-founder & CEO at NETSCOUT

Distinguished Alumnus Award



Recent Trends and Challenges in Drug Discovery Conference

The Department of Pharmacy, hosted a conference on "Recent Trends and Challenges in Drug Discovery" during March 3-4, 2023. The event blended both physical and virtual participation, drawing a cohort of 1006 registered attendees.

The conference was inaugurated by Prof. SudhirKumar Barai, Director, Pilani Campus, who shed light on the paramount importance of drug innovation and the challenges associated with it as well as drug free world. Prof. Barai also talked about the healthcare ecosystem of BITS Pilani and its benefits for the society at large.

The conference featured eight lectures delivered by the national and international scientists, academicians, and technocrats from the pharmaceutical industry. They shared invaluable insights from their own scientific endeavors,

Systems were recognized. Other individuals who were recognized include Mr. Chaitanya Kalipatnapu, the Co-founder at Eruditus/Emeritus; Mr. Alagu Periyannan, the Co-founder and chief Technology Officer of Bluejeans by Verizon; and Mr. Preetish Nijhawan, the Managing Partner at Cervin Ventures and Co-founder of Akamai Technologies.

The Distinguished Services Award 2023 was conferred on Honorable Governor of West Bengal Dr. C. V. Ananda Bose, Mr. Anil Agrawal (IPS), Ms. Anupama T.V. (IAS), Air Vice Marshal Niraj Nainwal, and Mr. Abhinav Khushraj, the Co-founder and CEO of Petasense. The BITS Young Alumnus Achievement Award 2023 (under the age of 40) was awarded to Lt. Col. Shailesh Tiwary, Mayur Patnala, Sai Prameela Konduru, Dr. Sriram Krishnamoorthy, Awais Ahmed, and Kshitij Khandelwal.

emphasizing the pressing needs of this multidisciplinary domain and charting new pathways for a promising future in Drug Discovery across a spectrum of maladies.

Prominent speakers and participants at conference



Distinguished speakers included Prof. S.S. Vasan, Director of Research, Department of Health, Western Australia, Perth, Dr. Binu kumar BK, Principal Scientist, CSIR-Institute of Genomics and Integrative Biology, New Delhi, Dr. M. Vijaya kumar, Principal Scientist, R&D Centre,

Himalaya Wellness Company, Bangalore, Prof. Mymoona Akhter, Department of Pharmaceutical Chemistry, School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi, Prof. K. Ilango, Professor & Head, Department of Pharmaceutical Quality Assurance, SRM College of Pharmacy (SRMCP), SRMIST, Chennai, Prof. Inder Pal Singh and Prof. Sanjay Jachak, Department of Natural Products, National Institute of Pharmaceutical Education and Research, SAS Nagar, and Dr. Shashank K. Singh, Senior Principal Scientist, Pharmacology Division, CSIR-Indian Institute of Integrative Medicine, Jammu-Tawi.

The conference also provided a platform to Ph.D. scholars and M. Pharmacy students of the Department of Pharmacy to present their research through poster presentations.

J. C. Chaudhry Auditorium Inauguration

BITS Pilani celebrated the inauguration of the J. C. Chaudhry NAB Auditorium, named after its distinguished alumnus from the 1970 batch, Mr. J. C. Chaudhry, founder of Aakash Educational Services Limited, on March 25, 2023. The auditorium has a seating capacity of over 200. During the event, Mr. J. C. Chaudhry shared his gratitude toward BITS Pilani and its pivotal role in shaping his journey, emphasizing the irreplaceable value of consistent hard work. He encouraged students to believe in their own abilities, rather than measuring themselves against their peers.

Felicitation of Mr. J. C. Chaudhry



Prof. V. Ramgopal Rao, Vice-Chancellor, BITS Pilani along with Prof. Sudhirkumar Barai, Director, Pilani Campus, and Prof. Arya Kumar, Dean, Alumni Relations, extended their warm felicitations to Mr. J. C. Chaudhry and his son Aakash Chaudhry. The ceremony was followed by an engaging cultural program presented by students of Ragamalika and the Poetry club.

Addressing the gathering, Prof. V. Ramgopal Rao urged BITS Pilani alumni to contribute to the institution, enabling

deserving students to access scholarships and educational support. He expressed gratitude towards Mr. J. C. Chaudhry for his significant contributions in educating countless students in the fields of medicine and engineering.

5th Workshop on Analytical Instruments for Chemical and Environmental Engineers (WAICEE-2023)

The Department of Chemical Engineering, in collaboration with the Indian Institute of Chemical Engineers (IICChE) Pilani Regional Centre, organized the 5th Workshop on Analytical Instruments for Chemical and Environmental Engineers (WAICEE-2023) during March 28-29, 2023.

Prof. Sreedevi Upadhyayula, Class of 66 Chair Professor, Department of Chemical Engineering, IIT Delhi, inaugurated the workshop along with Prof. V. Ramgopal Rao, Vice-Chancellor, BITS Pilani and Prof. Sudhirkumar Barai, Director, Pilani Campus. She delivered a keynote address on "Surface Science in Heterogeneous Reactions and Catalysis," emphasizing the predictive power of catalyst characterization through analytical instruments.

The workshop encompassed theoretical sessions and hands-on demonstrations of various instruments, including Gas Chromatography (GC), High-Pressure Liquid Chromatography (HPLC), UV-VIS Spectrophotometer, Atomic Absorption Spectrophotometer (AAS), Fourier Transform Infrared Spectrophotometer (FTIR), Thermal Gravimetric Analyzer (TGA), X-Ray Diffraction (XRD), Gas Chromatography-Mass Spectrometry (GC-MS), Differential Scanning Calorimetry (DSC), Field Emission Scanning Electron Microscopy (FESEM), and X-ray Photoelectron Spectroscopy (XPS).

Inauguration of WAICEE-2023



Eminent researchers presented their research on the application of these instruments, featuring nine keynote lectures and seven practical demonstrations. Invited speakers included Dr. Snehalkumar Parmar, Reliance Industries Limited, Prof. Joysurya Basu, IIT (BHU), Prof.

Subhashis Gangopadhyay, Pilani Campus and Sh. Vikram Singh Parihar, Chief Scientific Officer at Rajasthan State Pollution Control Board. Prof. Suresh Gupta, Dr. Somak Chatterjee, Dr. Srinivas Appari, Prof. Smita Raghuvanshi, and Dr. Krishna Chaitanya Etika, Department of Chemical Engineering, Pilani campus covered various technical aspects. The workshop was attended by the delegates from across India.

Sessions and hands-on demonstrations during workshop



Ajay Upadhyaya Centre for Financial Markets Education Inauguration

The "Ajay Upadhyaya Centre for Financial Markets Education" was inaugurated on March 29, 2023. Distinguished guests, including Mr. Ajay Upadhyaya, alumnus 1972-1977, and Mr. Vivek Bajaj, a renowned financial market expert and co-founder of Elearnmarkets and StockEdge, as the guest of honor.

Ajay Upadhyaya Centre for Financial Markets Education



Prof. V. Ramgopal Rao, Vice Chancellor, BITS Pilani, and Prof. Sudhirkumar Barai, Director, Pilani campus, shared

their insights on this occasion. Mr. Vivek Bajaj offered profound insights into navigating the intricacies of financial markets. This rare opportunity to glean wisdom from the finest in the industry provided attendees with a profound understanding of the critical role of financial education. The Ajay Upadhyaya Centre for Financial Markets Education stands as a bastion for students and faculty alike, offering a platform to acquire deep-seated knowledge of financial markets.

BITS Pilani to establish the 1st DST-Sponsored Technology Enabling Centre in Rajasthan

The Technology Development and Transfer (TDT), division of the Department of Science and Technology (DST), the Government of India, under its "Technology Enabling Center (TEC) in University System" initiative, has chosen BITS Pilani to establish the first regional BITS-TEC in the state of Rajasthan. This initiative comes with a funding support of 4.7 Crore for a period of five years.

The primary focus of BITS-TEC will revolve around pivotal domains such as Biotechnology, Healthcare and Nutrition, Drug Design and Development, Medical Devices, and related areas at the crossroads of Bioscience and Pharmacy. Operating on a Hub and Satellite model, BITS-TEC will extend the knowledge support of its Goa and Hyderabad campuses for the regional stakeholders in Rajasthan. Professor V. Ramgopal Rao, Vice Chancellor, BITS Pilani, underscored the need for an ecosystem that unites regional academic institutes, R&D institutions, industry players, MSMEs, startups, and incubators for enabling research innovation, technology development, improvement, and commercialization while leveraging its core strength of strong industry engagement.

Professor Sudhirkumar Barai, Director, BITS Pilani, Pilani Campus, highlighted that BITS-TEC hub will act as a catalyst and sensitize the regional stakeholders to the best practices of Research and intellectual management through structured support in Policy implementation, IP Creation and Protection, Technology improvement, Product Development and Validation and Tech-Transfer. The activities envisaged through BITS TEC are mining and mapping of academic technologies, Market Study/ Assessment of the Technologies, skilling, training in innovation management and creating a common platform for networking and partnership for academia, SMEs, startups, business associations.

Academia: a confluence of ideas

Seminars/Conferences

Workshops/Training Programs

Enriching the Learning Experience:

Visits by Faculty

Prof. Yashvardhan Sharma, Department of Computer

Science and Information Systems,

attended and presented two papers titled "Visual Question Answering Analysis: Datasets, Methods, and Image Featurization Techniques" and "Impact of Transformer-Based Models and User Clustering in Early Fake News Detection in Social Media" at the 12th ICPRAM

(International Conference on Pattern Recognition Applications and Methods) held at Lisbon, Portugal during February 22-24, 2023.



Prof. Kamallesh Kumar, Department of Civil Engineering,

attended and presented a paper titled "SPT N value estimation of Pilani soil using ultrasonics" online at the 3rd International Conference on Recent Developments in Sustainable Infrastructure: ICRDSI organized by the School of Civil Engineering, KIIT, Bhubaneswar, during March 3-5, 2023.

Prof. Arya Kumar, Department of Economics and Finance, organized a one day workshop on "Building an Ecosystem for Startups" at TIT, Bhiwani on April 8, 2023.

Prof. Sangeeta Sharma, Department of Humanities and Social Sciences, visited the University of South Florida under University Immersion Program from July 4 - August 3, 2023.



Prof. Paul Atish Tulshiram, Department of Pharmacy attended the "Global Food Regulators Summit 2023" under India's G20 presidency as an invited member at New Delhi during July 20-21, 2023.

Accolades and Achievements: Academic attainments of Faculty

Prof. Shamsher Bahadur Singh, Department of Civil Engineering, has been an elected Fellow of the Structural Engineering Institute (SEI) of ASCE since January 2023. He has been appointed as an expert member of the Bureau of Indian Standards (BIS) to represent India at the ISO TC71/SC 6/WG6 Committee on FRP bars and grids. Prof. Singh has also been appointed as the principal member of the CED 54 Concrete Reinforcements Sectional Committee of BIS, Government of India as a representative of BITS Pilani. Furthermore, he has been appointed as an associate member of the main committee on Standards Committee for ASCE/SEI 7-Minimum Design Loads and Associated Criteria for Buildings and Other Structures for the 2028 cycles since March 30, 2023.

Prof. Srinivasan Periaswamy, Department of Mechanical Engineering, received the prestigious Prof. V S Rao Foundation Dr. C.R. Mitra Best Faculty Award 2022 on January 25, 2023.

Prof. Rajeev Taliyan, Department of Pharmacy, is appointed as a Guest Editor for a special issue titled "Epigenetic modifications and regulation" for an International journal BMC Biology indexed in Science Citation Index, Scopus, PubMed etc. with IF =7.61.

Prof. Shilpi Garg, Department of Biological Sciences, was selected as an "Outstanding Woman Researcher in Molecular Biology" at the 8th Venus International Women Awards - VIWA on March 4, 2023.



Prof. Manoj Kumar Soni, Department of Mechanical Engineering, was invited as a panelist in the CEO round table discussions on knowledge sharing and strategy development for "Sustainability as a Practice for Organizations" jointly organized by Verband Deutscher Maschinen und Anlagenbau (VDMA) India, which is the India office of The German Engineering Federation and LAPP held at Taj Lands' End, Mumbai on February 3, 2023.



Invited Lectures/Talks by Faculty

Dr. Trilok Mathur, Department of Mathematics, delivered a talk on "Crime and Memory: A Fractional Order Modeling" at the 9th International Conference on Mathematics & Computing (ICMC 2023) held at BITS Pilani, K. K. Birla Goa Campus, Goa during January 6-8, 2023.



Dr. Shivi Agarwal, Department of Mathematics, delivered a talk on "Inverse Data Envelopment Analysis Models and Applications" at the 9th International Conference on Mathematics & Computing (ICMC 2023) held at BITS Pilani, K. K. Birla Goa Campus, Goa during January 6-8, 2023.

Prof. Shilpi Garg, Department of Biological Sciences, delivered a talk "Characterization of Iron-Sulfur [Fe-S] cluster assembly protein Dre2 from Plasmodium vivax" at Goa University at the 15th Conference on Vectors and Vector-Borne Diseases held in Goa during February 15-17, 2023.

Prof. Arya Kumar, Department of Economics and Finance, delivered an address as the chief guest at the 18th International Conference on "Transforming Management Practices and Processes for Economic Development and Societal Welfare," hosted by Prestige Institute of Management & Research, Indore on February 25-26, 2023. He delivered a keynote address on the implementation of the New Education Policy with a focus on start-ups at VGU, Jaipur on May 27, 2023. Prof. Arya Kumar also conducted invited sessions on "Excellence in Higher Education: Challenges" and "Quality Improvement - Initiatives by UGC" during the GURU-DAKSHATA: 6th Faculty Induction Program (online) and the Refresher Course in Educational Policies & Reforms: New Perspectives (online), both organized by UGC-Human Resource Development Centre (HRDC), University of Rajasthan in January 2023.

Prof. Manoj Kumar Soni, Department of Mechanical Engineering, was invited as a speaker in seminar/workshop (online) on "Exploring the Pros and Cons of AI Platforms and its Impact on Student Assessment" organized by Dr. Abhijit Date, RMIT University, Australia, on May 17, 2023.

Prof. Srinivasan Periaswamy, Department of Mechanical Engineering, was a special invitee to attend the prestigious G20 Summit event on "Accelerating Energy Efficiency Progress and Promoting LiFE (Lifestyle for Environment)" conducted at JIO World Convention Center, Mumbai on May 17, 2023.

Prof. G. Venkiteswaran, Department of Mathematics, delivered a talk on "Linear and Non-linear Optimization in Data Science" at the Department of Mathematics, BMS College of Engineering, Bangalore as part of the Faculty Development Programme for Mathematical Foundation for Data Science on May 18th, 2023.

Prof. Sangeeta Sharma, Department of Humanities and Social Sciences, delivered a talk on Gender Sensitization: Judicial Officers and Public Prosecutors at Sikkim Judicial Academy, Sokeythang on May 20, 2023.



Prof. Manisankar Dasgupta, Department of Mechanical Engineering, delivered a talk on "Using Science and Technology to Win Games" at the workshop PHYSPO - Physics of sports organized by Birla Public School (BPS) Pilani in collaboration with BITS Pilani during July 17-19, 2023.

Dr. Kamlesh Tiwari, Department of CSIS, delivered a talk on "AI in sports: Friend or Foe" at the workshop PHYSPO Physics of sports organized by Birla Public School (BPS) Pilani in collaboration with BITS Pilani during July 17-19, 2023.

Dr. Venkatesh K.P. Rao, Department of Mechanical Engineering, delivered a talk on "Biomechanics and Sports Sensors" at the workshop PHYSPO - Physics of sports organized by Birla Public School (BPS) Pilani in collaboration with BITS Pilani during July 17-19, 2023.

Dr. Pintu Modak, Department of Physical Education, delivered a talk on "Relating Sports and Science" at the workshop PHYSPO - Physics of sports organized by Birla Public School (BPS) Pilani in collaboration with BITS Pilani during July 17-19, 2023.

Distinguished Lectures

Prof. Dipshikha Chakravorty, Professor, FNA, FNASc, FASc, TATA Innovation Fellowship recipient, ASTRA Chair Professor, DAE SRC Fellow, and Humboldt Fellow at the Indian Institute of Science, Bangalore, India delivered a talk on "Microbes Choose where they want to live: Inside or Outside-strategic Location" at the Department of Biological Sciences on January 27, 2023.

Prof. Rajnikant Dixit, Scientist E, ICMR-National Institute of Malaria Research, Delhi, India, delivered a talk on "Indian Philosophy to Scientific Innovation: Encasing the molecular secrets of mosquito's lifestyle to fight against vector borne diseases" at the Department of Biological Sciences on February 27, 2023.

Mr. Aman Sood, Managing Director, TMotions Global Limited, delivered a talk on "Data-Driven Decision Making" at the Department of Management on February 24, 2023.

Prof. Jeremy Rinker, Associate Professor, Associate Professor & Director of Undergraduate Studies Department of Peace and Conflict Studies, University of North Carolina Greensboro Carolina Greensboro (UNCG), Greensboro, NC., delivered a talk on "Management is Dirty word in my Discipline: A Radical Reframing of Conflict Intervention Practice to Address today's wicked problems" at the Department of Management on February 24, 2023.

Mr. Rohit Sachdeva, Vice President, Kyndryl India, delivered a talk on "Evidence-based Critical Thinking to the Management aspects" at the Department of Management on February 25, 2023.

Mr. Samir Katiyar, DC Specialist Master, Deloitte, delivered a talk on "From Data to Decisions: Leveraging IT for Evidence-Based Management" at the Department of Management on February 25, 2023.

Mr. Siddharth Sharma, Head of Product, DigiYatra Delhi Airport, delivered a talk on "DigiYatra Roll out – Case Study" at the Department of Management on February 25, 2023.

Mr. Nikhil Goswami, Director, NGPS Solutions, delivered a talk on "Supply Chain Analytics Beyond Curriculum." at the Department of Management on March 4, 2023.

Mr. V. Ramaswamy, Group CEO, Metamorphosis Engg & Skill Development Services Pvt. Ltd. Group of companies., delivered a talk on "Supply Chain Management and its implication in the business world." at the Department of Management on March 7, 2023.

Ms. Snehil Jain, Datascience and Analytics Professional, Banking, delivered a talk online on "Marketing Analytics." at the Department of Management on March 25, 2023.

Ms. Saumya Srivastava, Chartered Accountant, Independent Director in a listed company and strategic advisor to MSMEs, delivered a talk online on "Life's upgrade from Project to Paycheck." at the Department of Management on April 15, 2023.

Mr. Puneet Goyal, CategoryHead, Electrical Appliances, Poly Cab India Limited., delivered a talk online on "Category Management" at the Department of Management on April 24, 2023.

Mr. Sundar N, Consultant, Neuroscience, delivered a talk online on "Behavioral Finance" at the Department of Management on April 29, 2023.

Dr. Gaurav Jain, Associate Professor, Department of Pharmaceutics, Delhi Pharmaceutical Sciences and Research University, New Delhi delivered a talk on "Gamma-scintigraphy as an imperative tool for efficacy, safety, and branding of pharmaceutical formulations" at the Department of Pharmacy on February 25, 2023.

Mr. Ashutosh Trivedi, Senior Research Manager, Pharmazz India P. Ltd. delivered a talk on "Development of lyophilized products for NDA approval" at the Department of Pharmacy on February 25, 2023.

Prof. D. B. Ramachary, Professor, University of Hyderabad, delivered a talk online on "Discovery of organocatalytic click reactions: Past, present and future aspects" at the Department of Chemistry on January 10, 2023.

Prof. Kana M. Sureshaan, Professor, IISER Thiruvananthapuram, delivered a talk online on "Click in Crystals" at the Department of Chemistry on January 10, 2023.

Prof. M. Ravikanth, Professor, IIT Bombay, delivered a talk on "Modified polyaromatic heterocycles/hydrocarbons (PAHS) embedded porphyrinoids and coordination chemistry of acyclic oligopyrrolic ligands" at the Department of Chemistry on January 30, 2023.

Prof. T. Punniyamurthy, Professor, IIT Guwahati, delivered a talk on "Regioselective C-H functionalization and construction of medicinally important heterocycles" at the Department of Chemistry on April 28, 2023.

Prof. Rhodney Fernandes, Professor, IIT Bombay, delivered a talk on "Total synthesis of gamma-lactones and the natural products" at the Department of Chemistry on April 29, 2023.

Significant Projects

S.No.	PI & Department	Title of the Project	Funding Agency	Amount (INR) Lakhs
1.	Dr. Deepak Chitkara, Department of Pharmacy	Technology Enabling Centre in University System	DST	467.59 5 Years
2.	Dr. Tanmaya Mahapatra, Department of CS&IS	Future Medicine: Contactless Health Vitals Measurement -- A Pilot Implementation and Evaluation of a Contactless Health Vital Measurement System along with a Federated Data Infrastructure in the Context of Telemedicine	ToHealth GmbH Berlin, Germany	56.10 4 Years
3.	Dr. A.R. Harikrishnan, Department of Mechanical Engineering	Understanding the supercooled drop impact ice accretion dynamics under controlled environmental conditions and developing the anti-icing strategies for aerospace applications	SERB	53.61 3 Years
4.	Dr. Chennu Ranganayakulu, Department of Mechanical Engineering	The Research for Energy Saving Systems- Development of all Electric/more Electric Environment Control Systems for Fighter Aircraft	DRDO	52.41 2 Years
5.	Dr. Rajdeep Chowdhury, Department of Biological Sciences	Understanding hyperglycemia-induced metabolic alterations in pancreatic cancer cells and its regulation by specific long non-coding RNAs	SERB	43.74 Duration 4 Years
6.	Dr. Gaikwad Anil Bhanudas, Department of Pharmacy	Identification and characterization of novel long non-coding RNAs in AKI-to-CKD transition using CRISPR/Cas9-based epigenome editing: Revealing the potential of the long non-coding RNAs as a biomarker and therapeutic strategy	ICMR	41.85 3 Years
7.	Dr. Sudeshna Mukherjee, Department of Biological Sciences	Understanding the role of nuclear membrane-associated proteins under differential flow dynamics driving EMT and survival of tumor cells	SERB	40.41 3 years
8.	Dr. Srinivasan Periaswamy, Department of Mechanical Engineering	Design and development of crop residue-based roof insulation with Phase Change Materials for livestock rearing shelters: An environment-friendly business model for doubling farmer women's income in Arid and Semi-Arid zones.	SERB	40.08 3 Years
9.	Dr. Rita Sharma, Department of Biological Sciences	Molecular dissection of small RNA biogenesis machinery regulating male fertility and reproductive stage stress tolerance in Sorghum	SERB	38.40 3 Years
10.	Dr. Rajneesh Kumar, Department of EEE	Design and development of a multi-output high voltage gain converter with multi-frequency operation for PV applications and green hydrogen generation	CDAC Thiruvananthapuram R&D Organization of the Ministry of Electronics and Information Technology (MeitY), Government of India	33.42 2 Years
11.	Dr. Nitika Grover, Department of Chemistry	Synthesis of Porphyrin Arrays and Their Roles in Singlet Fission (SF)	DST	35.00 3 years
12.	Dr. Anupam Singhal, Department of Civil Engineering	Eco-Friendly Solution with Metal Recovery and Value-Added Products from Stainless Steel Spent Pickle Liquor: A Zero Waste Business Model	Ministry of Steel	34.61 3 years
13.	Dr. Amrita Chakraborty, Department of Chemistry	Study of intermolecular S-centered chalcogen bonding (S...X, X = O, N, S) interaction in cryo-matrix using FTIR spectroscopy	DST	30.38 3 years
14.	Dr. Tanmaya Mahapatra, Department of CS&IS	MeDiKiT: Medical Data Integration Toolkit – A Pilot Implementation of Medical Data Sharing Software Systems for Future Medicine to Enable Big Data & AI Applications in Medicine	ICMR	29.65 3 Years
15.	Dr. Debashis Bandyopadhyay, Department of Physics	Study of renewable photocatalytic water splitting for hydrogen generation and storage in hydrogen fuel cell	SERB	28.73 3 Years
16.	Dr. Navin Singh, Department of Physics	DNA duplex stability: Effect of salt concentration and cation valency	SERB	28.12 3 Years
17.	Dr. Chennu Ranganayakulu, Department of Mechanical Engineering	Development of graphene/graphite encapsulated high thermal conductivity heat sinks	DRDO	27.64 1.8 years
18.	Dr. Meghana Tare, Department of Biological Sciences	Understanding the onset and progression of Parkinson's disease via regulating mitochondrial dynamics	ICMR	27.00 3 Years
19.	Dr. Meetha.V.Shenoy, Department of EEE	Design and development of a Federated Learning-based Smart Object Detection Accelerator for Autonomous Vision in IoT-enabled Systems	IIT Bombay TIH Foundation for IoT and IoE	25.58 4 Years

S.No.	PI & Department	Title of the Project	Funding Agency	Amount (INR) Lakhs
20.	Dr. S B Singh, Civil Department of Engineering	Study of Structural Behavior and Failure Characteristics of FRP-Concrete Composite Beams.	SERB	24.42 3 Years
21.	Dr. Vinay Chamola, Department of EEE	Artificial Intelligence Assisted Blockchain Enabled and Aadhaar Linked Electronic Medical Record Management and Tele-Consultation System	IIT Bombay TIH Foundation for IoT and IoE	23.2 4 Years
22.	Prof Sangeeta Sharma, Department of HSS	Recycling for the conservation of the environment	TDUPW Program of A2K+ Scheme of DSIR	22.37 2 Years
23.	Dr. Richa Shrivastava, Department of Pharmacy	Evaluation of Synergistic Potential of Olanzapine and Bosewallic Acid and Designing of their Combinational Transdermal Patch against Pancreatic Cancer-induced Cachexia	ICMR	21.23 3 Years
24.	Dr. Hari Om Bansal, Department of EEE	Photovoltaic Fed Microgrids: Integrated Intelligent Harmonic Control to Enable Electric Vehicle Charging	CPRI	20.55 2 Years
25.	Dr. Richa Shrivastava, Department of Pharmacy	Development of Nanocarriers for Fra-1 Gene Delivery to Tumor-Associated Macrophages and Evaluating its Anti-metastatic Potential in Breast Cancer	SERB	18.30 3 Years
26.	Dr. Bijoy Krishna Mukherjee, Department of EEE	Bifurcation Analysis and Reconfigurable Control Design for Autonomous Maneuvering with an Asymmetric Aircraft	DRDO	17.81 2 Years
27.	Dr. Somak Chatterjee, Department of Chemical Engineering	Use of distillery and domestic wastewater to generate hydrogen and development of a prototype thereof	LIGHTATOM Electrolyzer Pvt. Ltd.	15.95 1 Year
28.	Dr. P. R. Deepa, Department of Biological Sciences	Lipogenic Stearoyl CoA Desaturase (SCD) as a Promising Anti-Obesity and Anti-NAFLD Target: High-Throughput Screening and Biochemical Validation of Synthetic and Natural Product Molecules	ICMR	15.35 2 Years
29.	Dr. Deepak Chitkara, Department of Pharmacy	Improvement of selected formulations for topical, oral delivery and development of the patch	S N PANDIT AYURVEDIC Co PVT Ltd	11.40 1 Year
30.	Dr. Anupam Yadav, Department of HSS	Social Media Socialization and Self-engagement: A Qualitative Study of Online Identity Reconstruction	ICSSR	10.00 2 Years
31.	Dr. Rajeev Taliyan, Department of Pharmacy	Pharmacokinetic & Pharmacodynamic Evaluation of gamma oryzanol from different sources /origin on STZ - HFD induced cardiac and metabolic impairments in the rat model	Zeoric Nutrition LLP	7.50 1 year
32.	Dr. Vinti Agarwal, Department of CS&IS	Western Australia Transforming Community Health (WATCH) Pilot Study	The State of Western Australia acting through the Department of Health	6.76 1 year
33.	Dr. Paul Atish Tulshiram, Department of Pharmacy	A comparative study of BIFILAC CLAUSI Vs Enterogermina and other selected brands of Bacillus clausii for Pro-Bio similarity	TABLETS(INDIA) LTD. Chennai	5.75 3 months
34.	Dr. Praveen Goyal, Department of Management	Assessing the impact of environmental education on Pro-environmental behavior among the students of Higher Education Institutions in India	ICSSR	5.00 1 Year
35.	Dr. Rajesh Kumar, Department of CS&IS	RESilience-by-Design (RESIDE)—an open-source software tool for ranking cyber-attacks and performing quantitative safety-security risk assessments for critical infrastructures under adversarial attacks	DSCI (Data Security Council of India)	4.95 6 months
36.	Dr. Amitesh Singh Rajput, Department of CS&IS	Security Evaluation and Development of Malicious Client Handling System in Federated Setting using API	DSCI (Data Security Council of India)	4.75 6 months
37.	Dr. Rajeev Taliyan, Department of Pharmacy	Preclinical Comparative Efficacy Study of anti-inflammatory/analgesic loaded Formulations and their Synergistic Potential on Formalin-induced Neuropathic Pain in Wistar Rats	Leiutis Pharmaceuticals, Hyderabad, Telangana 500037	4.50 6 months
38.	Dr. Indresh Kumar, Department of Chemistry	Development of new symmetrical phthalonitrile resins as high-performance thermosets	Fine Finish Organics Pvt. Ltd	1.00 2 Years
39.	Dr. Aneesh A M, Department of Mechanical Engineering	3D CFD simulations on Hydrogen gas storage Type 4 cylinder	DroneVionics Pvt. Ltd	0.71 6 months
40.	Dr. Tribeni Roy, Department of Mechanical Engineering	Quantum computing for accelerated materials discovery for high-performing energy storage devices	Ministry of Electronics & Information Technology	USD 14225 1.6 years

Student round up

PS 2 to Entrepreneurship

BITS Converge – “PS 2 to Entrepreneurship”, presented by Postman Inc., took place at the Postman Office Indiranagar, Bangalore on June 10, 2023. This event provided budding entrepreneurs with a unique opportunity to connect with industry experts and gain invaluable insights into startups. The lineup of speakers, including Ananya Singhal, Nikhil Ramaswamy, Shourya Agarwal, Vibhav Joshi, and Harish Uthayakumar, shared their entrepreneurial journeys and offered valuable advice. Moreover, PS-2 students had the chance to meet influential BITSians in venture capital and investment: Sarthak Singh, Himanshu Sharma, Satya Bharadwaja, Nevil Kathiria, Jyotbir Singh Khuman, Rikkin Majani, and Thejeswi Ramesh. The event brought together aspiring entrepreneurs and industry leaders, fostering enthusiasm, knowledge, and a shared passion for innovation.

PS 2 to Entrepreneurship: Sessions organized by Postman Inc



Team CRISS Robotics Bagged No 1 Position in International Rover Design Challenge (IRDC), 2023

BITS Pilani's CRISS Robotics team secured 1st position and a \$1,000 cash prize at the International Rover Design Challenge (IRDC) 2023. The competition featured 35+ teams with over 800 participants worldwide. CRISS, the Consortium for Research in Space Systems, is a multidisciplinary team of 40+ tech enthusiasts led by Dev Parikh. They focus on space engineering and robotics research at BITS Pilani, Pilani campus. Their mission is to innovate and develop projects for space exploration.

IRDC, organized by the Space Robotics Society and UKET Space Exploration Society, was an online competition held from March to May 2023. The challenge was to design a Next-Gen Mars Rover for future astronaut-assistive exploration on Mars. This research-oriented competition encouraged students to think innovatively without constraints on physical resources.

CRISS Robotics' success at IRDC not only brought pride to BITS Pilani but also gained an invaluable experience. Prof. Sudhirkumar Barai, Director, Pilani campus, expressed his pride in the dedicated crew members. CRISS Robotics acknowledges the guidance and support of Prof. V. Ramgopal Rao, Vice-Chancellor, BITS Pilani, Prof. Sudhirkumar Barai, Director, Pilani campus, and Prof. M.S.

Dasgupta, Faculty In-charge, for their valuable guidance and continuous support.

Currently, the team is in the development and prototyping phase for the ongoing European Rover Challenge 2023, and in the research and development phase for the International Rover Challenge 2024.

CRISS Robotics Team



NASA Human Exploration Rover Challenge (HERC) 2023

The team “Inspired Karters Gravity” participated in the NASA Human Exploration Rover Challenge (HERC) held at NASA Marshall Space Flight Center, Huntsville, Alabama, U.S.A. They bagged #1 Project Review Award and secured an impressive 12th position among 61 international teams from 8 countries. For the second year in a row, they continued #1 in overall rankings in the Asia-Pacific region,

a testament to their unwavering dedication and exceptional work culture.

Team-members who travelled to the United States of America to represent BITS and India were:

1. Arnav Singh - Team Lead and Structure Head
2. Botu Rohith - Chief Technical Officer and Team Safety Officer
3. Kanva A. Kashyapa - Chief Technical Officer and Suspension Head
4. Samkit Jain - Team Manager and Wheels Head
5. Atharv Srivastava - STEM Head and Drivetrain Head
6. Shayna Godha - Co-STEM Head

Atharva Sunder Ramdas, the Vice Team Lead and Steering Head, played a pivotal role to the project although could not join the team in the U.S.A. His contribution was invaluable, standing on par, if not surpassing, that of his teammates.

The aim of the competition was to build a human-powered Mars Rover which could traverse a tedious and rough obstacle course which was intricately designed to replicate the Martian terrain. This included complete designing of the rover from scratch, simulating and verifying the designs for the same, manufacturing the theoretical designs, testing the manufactured rover, procuring funds for manufacturing, transport and logistical support, designing team apparel and merchandise and so much more than what can be quantified in words. The team's rover, G-Rover III, featured distinctive attributes that distinguished it from others. These included 3-D printed wheels crafted through generative design, an electronically operated steering system, a suspension setup that allowed leaning, and a robust 3-wheeled aluminum chassis.

Team IKG with the award



Participation in this competition provided invaluable hands-on experience and culminated in a highly coveted award.

Representing both BITS Pilani and India on a global stage was a source of immense pride. The journey doesn't end here; the team is already gearing up for the next season, fueled by an even greater determination to claim the top spot at NASA HERC 2024.

Chitrarth Dagar Memorial Award

The Department of Mechanical Engineering, Pilani campus organized the Chitrarth Dagar Memorial Award ceremony on April 18, 2023. The event was honored



by the presence of Prof. Sudhirkumar Barai, Director, Pilani Campus and Prof. Srikanta Routroy, Head, Department of Mechanical Engineering, alongside faculty members, students, and the family of Mr. Chitrarth Dagar.

Chitrarth, an outstanding student from the 2011-15 batch, exhibited a strong passion for music and was an active member of Gurukul. The program commenced with a warm welcome from Mechanical Engineering student Ms. Riya Mittal, followed by a touching tribute movie showcasing Chitrarth's involvement in various events in BITS Pilani.

The Gurukul team, under the guidance of Dr. Anil Rai, delivered an enthralling music performance. A moment of silence was observed in the memory of Chitrarth Dagar. Prof. Routroy elucidated the selection process and this year's outstanding Mechanical Engineering student was given to Mr. Jainil Dharmil Shah. Chitrarth Dagar's family and Prof. Sudhirkumar Barai presented him a trophy, certificate, and cash prize. Dr. Anil Rai announced Mr. Ishaan Sarma the best-performing music Gurukul student. Ishaan received a trophy, certificate, and cash prize.

APOGEE 2023

Apogee, the annual technical festival of BITS Pilani, provides a global platform for students and researchers to showcase their technical prowess. This year's edition, held from March 31 to April 3, 2023, boasted an impressive lineup of speakers and artists who inspired attendees. The inauguration was led by S Nagarajan, an esteemed member of the Indian Administrative Services, followed by three days of continuous events. The theme of Apogee "A Hivemind Genesis," meant that various events took place simultaneously in similar locations, forming distinct "hives" for different activities.

Among the thrilling core events was the APOGEE Innovation Challenge, where leading companies presented real-world challenges and expected innovative solutions from participants. Also, the IDRL Night Drone Racing, a two-night spectacle organized by the Indian Drone Racing League, and Robots at War, a combat event for robots weighing under 15kg. The fest also featured a captivating Bot Labs Drone Show, making it a must-attend for tech enthusiasts. APOGEE's lineup also included the annual literature fest of BITS Pilani, Papyrus Trails, offering book stalls, movie screenings, talks, and more, making it a haven for literature and cinema enthusiasts. Renowned figures such as film director Dibakar Banerjee, Padma Shri awardee photojournalist P Sainath, V. K. Saraswat, Member of NITI Aayog, and Azhar Iqbal, CEO Inshorts delivered talks, among others.

The fest also showcased an array of cultural performances encompassing dance, music, and theater, featuring standout acts by BITS Pilani's Dance Team, Music Society, and Dramatics Club. Additionally, it hosted workshops and talks spanning science, technology, and the arts.

Noteworthy segments of the fest included "Think Again," a series of guest lectures by influential figures in science, technology, and policy, and the Entrepreneurship Conclave, which encompassed keynote talks, workshops, internship fairs, and networking sessions. The concerts featuring icons like Nalayak, and the comedy night "N2O," featuring stand-up stalwarts Karunesh Talwar and Swati Sachdeva, were also not to be missed.

Dance performance during Apogee



The food court at Apogee 2023 was a favored spot for visitors to savor a diverse array of cuisines. The gaming

zone offered a medley of games, including arcade, console, and PC games. The shopping arcade hosted various stalls vending clothing, accessories, and other wares. In sum, Apogee 2023 proved to be a resounding success, featuring a wide spectrum of events and activities catering to diverse interests.

Students' Achievements

Krishna Veer Tiwari (2020PHXF0038P) published an article titled "An optimization model for vehicle routing problem in last-mile delivery" in Expert Systems with Applications, a top SCI-indexed journal with an Impact Factor - 8.5; h-index - 249.

Dhruv Kunvarani (2023B1PS0875P) was a state-level winner at STEM Quiz 2.0 organized by GUJCOST in Science City, Ahmedabad, Gujarat on May 30, 2023.

Anuvasita Parikh (2019PHXF0405P) received the best paper presentation award at an International Conference on Frontiers at the Chemistry-Allied Sciences Interface (FCASI-2023) organized by the Department of Chemistry, University of Rajasthan, Jaipur during April 20-21, 2023.

Nitish Yadav (2021PHXF0022P), attended the event "Formal Methods Update Meet 2023", at IIT Goa during June 1-3, 2023. He also attended the event "Scientific visit" to Malardalen University, Sweden during February 18, 2023 to March 5, 2023. The event was fully sponsored.



A. Naga Ramani (P2021PHXF0442P) received the best paper award for the paper "Human Resource Management" at the 4th International Conference on Evidence-Based Management held at BITS Pilani, Pilani Campus during February 24-25, 2023.



Hariprasad Ambadapudi (2020PHXF0517P) received the best paper award at the IEEE OP Jindal University Technical Conference held in Raigarh, Chhattisgarh during February 8-10, 2023.

Introducing new faculty

S.No	Name of Faculty	Designation	Department
1	Aprajita Pandey	Assistant Professor, Gr-I	Economics and Finance
2	Geeta Bhatt	Assistant Professor, Gr-I	Mechanical Engineering
3	Amit Kumar	Assistant Professor, Gr-I	Mechanical Engineering
4	Nitika Grover	Assistant Professor, Gr-I	Chemistry
5	Sajal Mukherjee	Assistant Professor, Gr-I	Physics
6	Anuj Sharma	Assistant Professor, Gr-I	Mechanical Engineering
7	Pramod Eyyunni	Assistant Professor, Gr-I	Mathematics
8	Tanmoy Mondal	Assistant Professor, Gr-I	Physics
9	Pragyanshu Khare	Assistant Professor, Gr-I	Pharmacy
10	Anil Rai	Visiting Assistant Professor	Humanities and Social Sciences
11	Arvind Kumar Sharma	Visiting Associate Professor	Chemical Engineering

Editorial team



Editor:

Dr. Anupam Yadav,
Humanities and Social Sciences



Student Member:

N V Saisreya
(2023H0851P)

Special Thanks



Prof. Gajendra Singh Chauhan
Faculty In-charge,
Publications and Media Relations



Mr. Ramesh Sharma
Publications and Media Relations

800 प्रतिभागियों वाली 35 राष्ट्रीय और अंतरराष्ट्रीय टीमों ने बिट्स पिलानी की टीम क्रिस रोबोटिक्स ने रोवर डिजाइन चैलेंज में प्रथम स्थान
मृदुल पत्रिका, 30 मई, 2023

राजस्थान पत्रिका, 06.03.2023
दवा निर्माण में अनुसंधान एवं चुनौतियों बिट्स पिलानी में हुआ सम्मेलन

राजस्थान पत्रिका, 01.04.2023
कैमिकल इंजीनियरिंग विभाग की कार्यशाला

सीमा सन्देश, 01.03.2023
इरा डिलीवरी एंड ट्रांसपोर्ट रिसर्च पर दो दिवसीय कार्यशाला का आयोजन

दैनिक भास्कर, 26.03.2023
बिट्स पिलानी की टीम इन्स्पयर्ड कार्टर्स ग्रेविटी ने नासा ह्यूमन एक्सप्लोरेशन रोवर चैलेंज में प्रथम स्थान पर

दैनिक भास्कर, 18.03.2023
बिट्स पिलानी बना प्रौद्योगिकी सक्षम केंद्र, अनुसंधान के नवाचार भी होंगे

दैनिक भास्कर, 25.03.2023
बिट्स में 10 करोड़ से बनेगा प्रीविलनिकल रिसर्च सेंटर

राजस्थान पत्रिका, 12/03/2023
समय-समय पर खुद को अपडेट करें और नई चीजों को अपनाएं - प्रो. राव

आयोजन • बिट्स पिलानी के वार्षिक तकनीकी फेस्ट अपोजी का अगाज, तीन अप्रैल तक चलेंगे कार्यक्रम
अपोजी 2023 : ड्रोन रेसिंग, बोटलैब ड्रोन शो व रोबो वॉर होंगे आकर्षण

दैनिक भास्कर, 01.04.2023

