



Semester-I notes 2022-23

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Editorial

Twenty-nine scientists from BITS Pilani paving their way to the Top 2% of Indian scientists in the world database of research created by Stanford University is a remarkable recognition both for the

individuals and the Institute. In the Convocation, held at the Pilani campus, 1802 students received their graduate, post-graduate and doctorate degrees. 'Distinguished Alumnus Award 2022', at the convocation, also conferred its first BITS RATNA award. Building and fostering its ecosystem by connecting with its alumni, students and people is a unique BITsian spirit and strength. Celebrating the world pharmacist day with the renowned alumni, familiarizing school students with pharmacy research and drug design software as scientific social responsibility or remembering the horrors and sufferings of partition with people of Pilani underpin the philosophy of learning together and building a better tomorrow. Mr. Kumar Mangalam Birla, Chancellor, BITS Pilani speaking and encouraging students at the 'Young Entrepreneurs' Bootcamp' is certainly very inspiring. 'B. V. Jagannathan Centre for Fostering Manufacturing Excellence', set up with the donation of the alumnus family, toward capacity building and knowledge exchange in the areas of manufacturing and industry 4.0 is a notable initiative. Whether conducting a faculty development program on sustainability in Civil Engineering, training on 'High End Machining Centers for Computer Integrated Manufacturing' or technology intervention in sports training and evaluation, our faculty have been at the forefront in imparting their knowledge and innovative skills.

Several students' events such as Interface, BOSM and the golden jubilee edition of Oasis '22 witnessed tremendous exuberance and success with huge enthusiastic participation from across the country. Winning tough business analytics and coding competitions, and patenting a multi-utility pen are commendable on students' part.

Hope you enjoy reading heart-warming stories of this edition!

76th Independence Day Celebrations

The 76th Independence Day was celebrated in Pilani campus by recalling the achievements of post-Independence India to mark "Azadi ka Amrit Mahotsav", 75 years of our independence. Prof. Souvik Bhattacharyya, Vice Chancellor, BITS Pilani, Prof. Sudhirkumar Barai, Director, Pilani campus, Col. Soumyabrata Chakravorty (Retd.), Registrar, and Prof. S. K. Verma, Dean Administration hoisted the National Flag, a moment of pride for all attendees. The program was attended by many dignitaries and students. Mr. Kishore Singh, the chief security officer and the team saluted the tricolor. The fervor of patriotism, unified diversity and rich cultural heritage of India, was beautifully brought forth through the songs sung by the students under the guidance of Dr. Anil Rai. The National Pledge, an oath to shoulder responsibilities with rights, was administered by Ms. Palak Sangal. The programme ended with the National Anthem sung with enthusiasm by all. The event concluded with tree plantation by the dignitaries to mark the 75th anniversary of independent India.



Independence Day Celebrations







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Partition Horrors Remembrance Day

BITS Pilani, Pilani campus observed the Partition Horrors Remembrance Day on August 12, 2022. Prof. Sudhirkumar Barai, Director, Pilani Campus, Prof. Arya Kumar, Dean Alumni Relations, Col. Soumyabrata Chakraborty (Retd.), Registrar, BITS Pilani and other dignitaries were present at the occasion. Special guest invitees were Shri Nagaraj Ji Sharma, Shri Shambhu Dayal Verma ji, Shri Ramesh Wadhwa ji and Shri Ram Pal Kapoor ji. Prof. Barai, addressed the audience and emphasized the importance of being a good human being and values of harmony and unity. This was followed by bhajans sung by students under the guidance of Dr. Anil Rai. Prof. Surekha Bhanot enlightened the audience with the works of literature on partition. An exhibition of partition-related posters and books was also organized by the BITS library.



Alumnus Family Sets up a Centre for Excellence



The family of Mr. B. V. Jagannathan, Mechanical Engineer (1950 Batch), Birla Engineering College, Pilani made a generous donation to establish the 'B.V. Jagannathan Centre for Fostering Manufacturing Excellence'. The Centre will be setup at Pilani campus to help improve capacity and capability of faculty, students and researchers in the area of manufacturing and Industry 4.0. The funding would be instrumental in creating opportunities for knowledge exchange and projects.

Mr. B. V. Jagannathan had a long and distinguished career in the Indian Railways. His next generation of family has several BITS alumni (J. Ravi, EEE 1972, Shankar Jagannathan, ME 1986, and Vandana Jagannathan, CS 1987). His family has dedicated this Centre in his memory

and believes that with this donation, BITS Pilani will be able to build expertise and develop solutions for critical business needs. They further hope that their donation would inspire other BITS alumni, who owe their success to their alma mater, to come forward and contribute to institutional growth.

Convocation 2022

BITS Pilani, Pilani campus held its Convocation ceremony on August 21, 2022 after a gap of two years due to covid-19 pandemic. 1802 students received their degrees, out of which 1365 (189 Girls) completed their undergraduate degree, 382 (115 Girls) completed their postgraduate degree, and 55 (20 Girls) completed their doctoral degree. Mr. Gaurav Bellal Natesh, Mr. Himanshu Singh, and Mr. Himanshu Chaturvedi received the Gold, Silver, and Bronze Medals respectively for their exceptional academic performance throughout four years.

Dr. Madan Pillutla, Dean and Professor of Organizational Behaviour at the Indian School of Business was the chief guest of the ceremony. Dr. Pillutla served as a Professor of Organizational Behaviour at London Business School during 2008-21 and prior to that he taught at Hong Kong University of Science and Technology. He is a globally renowned management academic and a leader in the field of organizational behaviour. In the convocation address, Dr. Pillutla emphasized to the students the privilege of graduating from this great institution and reiterated their duty towards the less fortunate ones.

BITS Pilani, Pilani Campus

Convocation 2022







Mr. Kumar Mangalam Birla, Chancellor, BITS Pilani, in his message to the outgoing students, said, "Change is drastic and swift and just look back the world as it was 4 years ago when you entered these gates. There was no Covid or monkeypox. There were no global markets for NFTs and the Metaverse was not a part of our universe. The world had yet to experience how climate breakdown wreaks widespread havocs. There was no war in Europe. No prospect of sentient Al. So much has changed in just 4 years! He reiterated how then do you make sense of a world that changes so rapidly? A frantic continuous race to survive and succeed in our chaotic world with just one superpower at our behest - knowledge. As you embrace the world outside with the power of knowledge, I would like to leave a question in your mind. What will and can you do with this power?"

Prof. Souvik Bhattacharya, Vice Chancellor, BITS Pilani in his report sensitized the graduating students to the power of turbulence and crisis that can bring people together, but can also lead to distrust and conflicts as seen during Covid times. He emphasized the importance of innovation and entrepreneurship to become self-reliant. While presenting a detailed campus report, Prof. Sudhirkumar Barai, Director, Pilani campus highlighted the achievements of students as well as faculty and expressed his pleasure to hold and attend the graduation ceremony on campus.

Convocation 2022 witnessed BITS Pilani's Distinguished Alumnus Award 2022 (DAA) for alumni who, through their significant and outstanding accomplishments, have brought glory and laurels to their alma mater. In the category of academia and research, DAA 2022 was awarded to Prof. Sameer Sonkusale, Prof. Arul Jayaraman, Prof. Nasir Memon and Prof. Kartik Hosanagar. In the category of corporate leadership, Mr. Vivek Paul and Mr. Sushil Kumar Roongta. In the category of entrepreneurship/public life/philanthropy, Mr. J C Chaudhry, Mr. Bhuvan Gupta, Dr. Jagadeesh Babu Rangisetty, Ms. Pramad Jandhyala, Dr. Thampy Thomas,

Mr. Samay Kohli and Mr. Akash Gupta received the award. From this year, BITS Pilani has instituted a new award - BITS Pilani Distinguished Services Award (DSA) - to recognize outstanding contributions and support to the institute, society and the country. The winners of DSA 2022 were Mr. M. P. Sharma, Mr. Srikanth Krishnamurthy, Mr. Pradeep Sethi, Mr. Ramaswamy Nagarajan and Late Capt. K Ravi Shanker. The first BITS RATANA Award was conferred on Mr. Prashanth Palakurthi who graduated from BITS Pilani in 1984 with M.Sc. in Mathematics and Master of Management Studies. In 2018, he made a generous donation of \$1M to his alma mater, the largest individual pledge ever received by BITS Pilani.

World Pharmacist Day

The Department of Pharmacy, BITS Pilani, Pilani campus and BITS Pharmaceutical Society celebrated the World Pharmacist Day on September 24, 2022 to acknowledge and appreciate the role of pharmacists in the betterment of healthcare system and society.

World Pharmacist Day Celebration



The event started with a glimpse of the progress of the department, since 1950 batch, in a short video. Prof. Rajeev Taliyan introduced two distinguished alumni, Mr. Vinod Kalani, Pharmacy (Hons.) BITS Pilani, 1977 batch, well known in the world of entrepreneurship as the chief guest and Dr. Rakesh Gupta, Pharmacy, BITS Pilani, 1976 as the guest of honour who has over 40 years of professional experience in teaching, pharma production, quality assurance, and administration. They emphasized the role of Indian pharmaceutical professionals,

pharmacists and research scientists during Covid-19, catering to the need of quality medicine, patient assistance and services rendered. Mr. Kalani discussed the growth of Indian pharmaceutical industries which is now recognized worldwide. Mr. Kalani and Dr. Gupta shared some of their life experiences and urged the students to excel in this field and life. The event concluded with the presentation of mementos to the guests by Prof. Anil B. Gaikwad and Prof. R. Mahesh.

World Pharmacist Day Celebration



Technology Intervention in Sports Training and Evaluation

A team of faculty members comprising of Prof. Mani Sankar Dasgupta (Mechanical), Prof. Arun Jalan (Mechanical), Prof. Jitendra Singh Rathore (Mechanical), Prof. Sharad Srivastava (Mechanical), Dr Suvanjan Bhattacharyya (Mechanical), Dr Venkatesh KP (Mechanical), Prof. Yashvardhan Sharma (CSIS), Dr Kamlesh Tiwari (CSIS) and Dr Pintu Modak (Sports) visited Netaji Subhash National Institute of Sports, NSNIS Patiala on September 26, 2022 for a meeting with Col. Raj Singh Bishnoi, Senior Executive Director and Prof. Kalpana Sharma, Director, NSNIS. There was an interaction with various experts from SAI and inspection of training facility and training session in action. This visit was organised to identify possible technology intervention points in sports training and evaluation as part of the recently signed MOU between BITS Pilani and Sports Authority of India (SAI).

Sports Training and Evaluation







Scientific Social Responsibility under DST SERB

As part of scientific social responsibility under DST SERB sponsored projects, students of Birla School, Pilani, visited the Department of Pharmacy on September 22, 2022. It was hosted by Prof. Anil Gaikwad (Head), Prof. Atish T. Paul, and Dr. Sandeep Sundriyal. Prof. Sudhirkumar Barai, Director, Pilani campus inaugurated the event and enlightened the students and teachers about the significance of pharmacy research, especially during

COVID-19, and the importance of exposure to science for school students. All the project investigators addressed the students during their visit to different research labs, including Natural Product Chemistry, Pharmacology, and Medicinal Chemistry. Students were familiarized with how the research is conducted and given the demonstration of various research equipment and drug design software.

Scientific Social Responsibility under DST SERB





BITS Pilani's Professors in World's Top 2% Scientists

Twenty-nine scientists from BITS Pilani have paved their way to the Top 2% of Indian scientists in the world database created by Stanford University for their research publication citation and lifetime contribution to specific fields of research. For this recognition, scientists are classified into 22 scientific fields and 176 sub-fields. The top 100,000 scientists with a c-score or a percentile rank of 2% and

above are selected based on career-long data. The database, a work of John Ioannidis, University of Stanford, California, USA was published in October 2022 by Elsevier. Featuring in the list of the world's Top 2% Scientists has brought global recognition to the individual researchers and the institute.

Young Entrepreneurs' Bootcamp 2022

The first edition of YEB 2022 (Young Entrepreneurs' Bootcamp) took place on October 2, 2022 at Pilani Campus with 51 school students participating from across the country. Prof. Sudhirkumar Barai, Director, Pilani Campus inaugurated the event and highlighted the impact of BITSians on start-up ecosystem in India. Dignitaries Dr. Chandra Shekhar, Advisor, Academic, Research &

Innovation, BITS Pilani, Col S. Chakraborty (Retd.), Registrar, BITS Pilani, Prof. S. K. Verma, Dean Administration, and Prof. A. P. Singh Dean, Academic-Undergraduate Studies, BITS Pilani graced the event. Mr. Sonam Wangchuk, an eminent social entrepreneur and innovator, was the chief guest.



The YEB-2022 program offered students the opportunity to attend various sessions delivered by notable speakers. Students had the privilege to meet Mr. Kumar Mangalam Birla, Chancellor, BITS Pilani. Mr. Birla discussed the key traits of 3 Ps-passion, purpose and problem and working at the intersection of them for being a successful entrepreneur and shared his own experiences as an entrepreneur. Mr. Sonam Wangchuk, emphasized the importance of innovation and contextualized solutions in solving people's problems, and the need for curiosity, empathy, and initiative in problem-solving. Rashmi Bansal, a writer, entrepreneur, and motivational speaker, shared inspiring success stories, including her own, of individuals who have built successful start-ups by pursuing their passions despite challenging

odds. She encouraged the students to silence their 'inner critic' and believe in themselves and emphasized that an MBA degree is not necessary to start a business. Prof. Barai interacted with the students and encouraged them to pursue their passions and give their best. Mr. Aditya Ruia, founder of Beco, conducted an engaging session emphasizing the importance of consumer, feedback, and finding the right co-founders. Mr. Vaibhav Kaushik and Mr. Aalaap Nair, co-founders of Nawgati, shared their entrepreneurial journey and development of cutting-edge congestion management systems for fuel stations. A variety of lectures and sessions were also conducted by the faculty members during the YEB event.

YEB-2022 Sessions

















Second edition of Dialogue-Backdoor Conversations with Alumni

Student Alumni Relations Cell, BITS Pilani, Pilani Campus conducted the second edition of Dialogue-Backdoor Conversations with Your Alumni with Mr. Aditya Ruia on October 8, 2022. Mr. Ruia is the co-founder of Beco, a company that offers eco-friendly products to increase sustainability and nurture environment. A Forbes 30 under 30 entrepreneur, Mr. Aditya Ruia has been able to take Beco to new heights in this area.

In this closed-door networking initiative, students got the opportunity to have personalized conversations with Mr. Ruia. They received unfiltered answers to their inquisitive questions. The event was conducted in 2 slots of 20 students.

Dialogue-Backdoor Conversations with Alumni





BITS EEECON 2022 International Conference on Next Generation Systems and Networks

The Department of Electrical and Electronics Engineering organized a two-day International conference BITS EEECON 2022 on the theme "Next Generation Systems and Networks" during November 4-5, 2022. The conference was sponsored by Micron Technology and CISCO Systems with Springer as the publication partner. The conference was inaugurated by chief guest Prof. N. P. Padhy, Director, MNIT Jaipur along with Prof. Souvik Bhattacharya, Vice Chancellor, BITS Pilani and Prof. Navneet Gupta, Head, Department of Electrical and Electronics Engineering. Prof. Hari Om Bansal, the conference organizing chair, apprised the audience about the conference theme and its significance for society.

Prof. Padhy delivered the keynote address and shed light on smart grid applications and their relevance in India followed by the keynote speech on overview of modern DRAMs by Mr. Venkatraghavan, Senior Director, Micron India. Mr. Subodh Gajare, Principal Software Architect, Cisco, Bangalore expressed his views on Massive IoT and 5G. Dr. Sanjay Singh, Principal Scientist, CEERI Pilani, talked about Al-enabled technologies and systems. The conference received 110 research articles from industry and academia across the country and from international affiliations. Keeping the quality intact 45% of research articles were accepted and presented. Approximately 30% of the participants were faculty members and 40% were research scholars from top-notch institutes in the country. The organizing co-chair Dr. Sandeep Joshi highlighted the research activities within department, and a special poster session was dedicated for this. The event concluded with a vote of thanks by the co-chair Dr. Pawan Ajmera with key takeaways that research should look at problems through the lens of their impact on society and provide effective and sustainable solutions.

BITS EEECON 2022







Faculty Development Program on Sustainability in Civil Engineering

The Department of Civil Engineering hosted the Faculty Development Program on Sustainability in Civil Engineering sponsored by AICTE Training and Learning (ATAL) Academy and Ultra Tech Cement during November 14-24, 2022.

Faculty Development Program



The FDP was inaugurated by the Chief Guest, Prof. Souvik Bhattacharya, Vice Chancellor, BITS Pilani, Prof. Anupam Singhal, Head, Department of Civil Engineering Department, Prof. Dipendu Bhunia and Dr. Sayantan Chakraborty coordinator and co-coordinator respectively.

FDP Participants



Prof. Bhattacharya spoke about the importance of FDP for exposure of faculty members in promoting sustainability in civil engineering. He also reiterated BITS Pilani's pioneering role in promoting and working toward a multidisciplinary approach in engineering and sciences much before the concept was introduced by the current National Education Policy. Prof. Singhal elaborated on the activities and research facilities available at the department

and Prof Bhunia emphasized on sustainability being at the heart of a responsible civil engineer. The workshop attracted the attention and participation of many engineers, professors and industry professionals from across the country. Dr. Chakraborty gave a vote of thanks and also acknowledged the contribution of Mr. Jaya Kumar Bhaskar, Mr. Akash and Ms. Ankita Pareek in making the event a success.

Training program on High End Machining Centers for Computer Integrated Manufacturing

The Department of Mechanical Engineering organized a one-week training program on "High End Machining Centers for Computer Integrated Manufacturing" during Nov 28, 2022 to Dec 4, 2022 under the aegis of "Synergistic Training program Utilizing the Scientific & Technological Infrastructure (STUTI)" a project of Indian Institute of Technology (Indian School of Mines) Dhanbad funded by the Department of Science and Technology (DST), Government of India. The training content imparts knowledge on the development of competence to work with high-end machining centers to be used for computer-integrated manufacturing and beneficial for researchers actively engaged in research and consultancy work.

The workshop was conducted under the coordinatorship of Prof. Srikanta Routroy, Prof. Bijay K. Rout and Prof. T. C. Bera and inaugurated by the Chief Guest, Dr. Ravindra Nath Sharma, guest of honour Prof. L.A. Kumaraswamidhas, Prof. Souvik Bhattacharya, Vice Chancellor, BITS Pilani and Prof. Sudhirkumar Barai, Director, Pilani campus.

Training program under STUTI



Prof. Souvik Bhattacharya introduced the audience to the quality of education at BITS Pilani and how BITSians are making a difference in society. He mentioned that close to 7500 BITSians are founders/cofounders of startups in India and across the globe. Prof. Barai appreciated the initiatives taken by DST for creating and improving accessibility of centralized lab resource facilities that will help our nation in its' growth trajectory. He spoke about the optimized way of using resources and the role of Center for Innovation, Incubation and Entrepreneurship (CIIE), BITS Pilani, Pilani

Campus in facilitating new start-up companies such as Abhyom Aerospace to use the resources available at BITS Pilani.

30 candidates from academia and industry from across the country attended the Workshop. Prof. Routroy threw light on business environment, vision of companies, data analytics, and digital twin to change the industrial settings of our nation.

Prof. L A Kumaraswamidhas briefed about STUTI program and research facilities available at IIT Dhanbad. He thanked BITS Pilani for the collaboration in organizing the current workshop. Dr. Ravindra Nath Sharma emphasized the importance of the workshop and how BITS education stands out amongst its peers and how it could help entrepreneurs and help them to take evidence-based decisions. Prof. T.C. Bera delivered a vote of thanks.

Prof. B. M. Mithal Memorial Lecture

Prof. B. M. Mithal Memorial Lecture was held on November 29, 2022 at Pilani Campus, jointly organised by the Department of Pharmacy and Prof. B.M. Mithal Endowment Trust, Pilani. As a mark of respect to the great teacher, educationist, administrator and philosopher, all modelled in one, the Department of Pharmacy, Pilani Campus, had initiated an annual memorial lecture in his name in 2001. In this grand event, 'B.M. Mithal Memorial Gold Medal', 'CNVHB Gupta Memorial Gold Medal' and 'Best Ph.D. Thesis Award' were given to those students who showed exceptional performance in academics, extracurricular and departmental activities.

Prof. B.M. Mithal Memorial Lecture



The event was inaugurated with the floral tribute to Prof. B M. Mithal by the dignitaries. Prof. Anupama Mittal welcomed the audience and highlighted the contribution made by Prof. B. M. Mithal to the Pharmacy profession. Prof. Sudhirkumar Barai, Director, Pilani campus addressed the gathering and correlated his vision of panchdhwani wherein Late Prof. Mithal, esteemed BITS alumni, teachers, awardees and their proud parents form the five components of panch-dhwani. Prof. Rajeev Taliyan introduced the esteemed speaker Dr. Jagadeesh Babu Rangisetty, CEO, Biophore India Pharmaceuticals Pvt. Ltd., Hyderabad. Dr. Rangisetty delivered the BM Mithal memorial lecture on "Research. Innovation and Entrepreneurship - BITSians success story", wherein he shared his wealth of experiences in the entrepreneurial journey. Prof. Sudhirkumar Barai, Dr. Rangisetty and Prof. S.K. Verma, Dean, Administration honored the students with gold medals.

Bharatiya Bhasha Utsav

BITS Pilani celebrated Bharatiya Bhasha Utsav on December 11, 2022 on the Janma Jayanti of Subramania Bharati, the great nationalist poet, with great fervor and enthusiasm. The chief guest, Prof. Chandra Shekhar, Guest of Honour, Prof. Surekha Bhanot, Prof. Devika, Head, Department of Humanities and Social Sciences and the convenor, Prof. Pushp Lata inaugurated the program.

Bharatiya Bhasha Utsav



Prof. Pushp lata addressed the gathering highlighting the importance of Bhartiya Bhasha Utasav as part of 'Azadi ka Amrit Mahotsav'. She talked about how our country is celebrating Ek Bharat Shereshth Bharat by stressing unity in diversity and diversity in unity. She quoted Mahakavi Pushpesh Pant's famous lines- "Kos kos par pani badale, char kos par vani."

Students and research scholars presented a mesmerizing cultural show consisting of folk songs, dances, poetry and stand-up comedy in different languages such as Rajasthani, Punjabi, Telugu, Malayalam, Tamil, Marathi, Bengali, Gujarati etc. The program had another major feature 'My Language, My Signature', facilitated with support from Prof. Virendra Singh Nirban. The Department of HSS put up a flex and participants and audience signed in their own languages. Prof. Virendra Singh Shekhawat, SDET Unit of the institute created a QR code for online signing which saw active participation. Huge number of participants attended this program.

Academia: a confluence of ideas

Seminars/Conferences
Workshops/Training Programs
Enriching the Learning Experience:
Visits by Faculty

Prof. Poonam Goyal, Department of Computer Science and Information Systems, was Invited to participate in an Indo-U.S. Visioning Workshop on Developing a Diverse, Robust Al Workforce held during August 10-11, 2022 at IISc, Bengaluru organized by Indo-U.S. Science and Technology Forum (IUSSTF), itihaasa Research and Digital, and the Indian Institute of Science. She was also invited as a session chair at IEEE International Conference on Big Data 2022 held in Osaka, Japan during December 17-20, 2022. She presented two papers in the conference.

Prof. Manoj Kumar Soni, Department of Mechanical Engineering, was invited as an honored delegate to the 17th NCB International Conference Cement, Concrete Materials Building Manekshaw Centre, New Delhi during December 6-9, 2022. The conference was organized by National Council for Cement and Building Materials, Ministry of Commerce & Industry, Govt. of India.



Prof. Rahul Singhal, Department of Electrical and Electronics Engineering, attended and presented a paper titled "Performance Analysis of Traditional Band Pass/Band Stop Frequency Selective Surfaces for Distinct Frequency Domains of Electromagnetic Spectrum" at 2022 IEEE

Microwaves, Antennas, and Propagation Conference, MAPCON, Bengaluru, India held during December 12-15, 2022.

Prof. Rahul Singhal



Prof. Asish Bera, Department of Computer Science and Information Systems, attended and presented a paper titled "Deep Neural Networks Fused with Textures for Image Classification" in the 3rd International Conference on Frontiers in Computing and Systems, COMSYS held at IIT Ropar, Punjab during December 19-21, 2022.

Prof. Leela Rani, Prof. Satyendra Sharma and Krishna Veer Tiwari, Department of Management, attended and presented a paper titled "The Mediating Effect of Customer's Expectations in LastMile Delivery: An Exploratory Study" at POMS Conference held at IIM Kozhikode during December 21-23, 2022.

Accolades and Achievements: Academic attainments of Faculty

Dr. Somak Chatterjee,
Department of Chemical
Engineering, won the "IEI
Young Engineers Award 202122" in chemical engineering
division, presented by The



Institution of Engineers, at the 37th National Convention of Chemical Engineers, Chennai, on September 9, 2022.

Prof. Manoj Kumar Soni, Department of Mechanical Engineering, was a Jury member of the 5th VDMA Manufacturing Excellence Award (Energy Efficiency & Conservation Category) given at the 11th VDMA Mechanical Engineering Summit, Pune on September 16, 2022. The summit was organized by Verband Deutscher Maschinen - und Anlagenbau, the India office of The German Engineering Federation. He also

submitted an article titled "Is India's New Zero Emission Target by 2070 Realistic?" in the special edition of the newsletter that was released during the summit and it was one of the three invited articles. Prof. Soni was also invited as a panelist for the topic "Design for Change - Imperatives for Engineering Education" at the 2022 Interdisciplinary Symposium on Sustainability in Higher Education supported by Wipro Earthian in collaboration with IIT Bombay held during December 1-2, 2022 at the Victor Menezes Convention Centre (VMCC) at IIT Bombay.

Prof. Kamalesh Kumar, Department of Civil Engineering, was honored with a certificate of excellence in reviewing papers and an outstanding contribution to the quality of Journal of Materials Science Research and Reviews, Asian Research Journal of Arts & Social Sciences, Asian Research Journal of Current Science, Asian Journal of Environment & Ecology, Journal of Engineering Research and Reports and Current Journal of Applied Science and Technology.

Prof. Souvik Bhattacharyya and Prof. Manoj Kumar Soni, Department Mechanical Engineering, published two books: Fundamentals of Thermodynamics, 10th Edition, Indian Adaptation authored by Claus Borgnakke, Richard E. Sonntag, Souvik Bhattacharyya, Manoj Kumar Soni and Fundamentals of Thermodynamics, 10th Edition, International Adaptation by Claus Borgnakke, Richard E. Sonntag, Souvik Bhattacharyya, Manoj Kumar Soni.

Prof. Srinivasan Periaswam, Department of Mechanical Engineering, won the Prof. V S Rao Foundation: Prof. C. R. Mitra Best Faculty award for 2022.

Prof. Balram Dubey, Department of Mathematics, was conferred upon the Fellow of ISMMACS and awarded with the JBS medal by the Indian Society of Mathematical Modelling and Computer Simulations for his outstanding contributions in the field of Mathematical Modelling and Simulation.

Prof S. B. Singh, Department of Civil Engineering, has been an Elected Fellow of Structural Engineering Institute of ASCE since December, 2022. Prof Singh established SEI Graduate Student Chapter of ASCE at BITS Pilani which is first of its kind in India and second outside the USA. He was also nominated as international nominating committee member for selection of ASCE office bearers in India and appointed as guest editor of The Indian Concrete Journal for May 2023 Issue.

Prof. Rita Sharma, Department of Biological Sciences, moderated a panel discussion on the "Role of women in sustainable agriculture, production and consumption"

during the National Conference and Expo "STREE2020" organized by Jawaharlal Nehru University, New Delhi and SHAKTI, a national movement for women, at JNU, New Delhi on November 25, 2022.

Prof. Rita Sharma



Invited Lectures/Talks by Faculty

Dr. Sandhya Marathe, Department of Biological Sciences, delivered a talk on "Understanding the role of CRISPR-Cas system in Salmonella" at Biological Sciences, IISER, Mohali on August 8, 2022.

Prof. Shilpi Garg, Department of Biological Sciences, delivered a talk on "Drug Resistance in Severe Plasmodium vivax malaria: A New Threat to mankind" during a three-day virtual popular lecture series on Antimicrobial Resistance at Vel Tech High Tech, Anna University, Chennai on September 26, 2022.

Prof. Poonam Goyal, Department of Computer Science and Information Systems, was invited as a keynote speaker in International Conference on "Intelligent Computing, Communication and Information Security" (ICCIS-2022) during November 15-26, 2022 held at SKIT Jaipur.

Prof. Manoj Kumar Soni, Department of Mechanical Engineering, delivered an online lecture on "Solar Thermal Power Generation" to the students of Instituto Superior de Engenharia, Universidade do Algarve, Campus da Penha, Faro, Portugal, on October 27, 2022.

Prof S. B. Singh, Department of Civil Engineering, delivered an inaugural lecture for SEI Graduate Student Chapter on October 8, 2022 on the topic "Opportunities & challenges in Structural Engineering Profession - A Practitioner's Viewpoint," organized by the President of Indian Association of Structural Engineers. He also delivered a keynote lecture on "Response, Failure, and Strength of FRP Composite Beams," at ACCM 2022, NIT

Warangal on December 17, 2022 and at SEC 2022, MNIT Jaipur on December 19, 2022.

Distinguished Lectures

Prof. Raman Venkataramanan, University of Pittsburgh School of Pharmacy, USA, delivered a talk on "Clinical Pharmacology for Rescue: Organ Transplantation and Clinical Issues for Pregnancy" at the Department of Pharmacy on September 19, 2022.

Dr. Naresh Chand, Life Fellow IEEE, Associate Vice President IEEE, Photonics Society, New Jersey, delivered a talk on "Photonics and Optical Communication Network" at the Department of Electronics Engineering and Instrumentation on September 29, 2022.

Mr. K.S. Babu, Head – Global Regulatory Affairs, Pfizer Healthcare India Pvt. Ltd., delivered a talk on "Careers in Pharmaceutical Regulatory Affairs; the opportunities and role expectations" at the Department of Pharmacy on October 1, 2022.

Mr. Manoj Mittal, President, Indian Association of Structural Engineers, delivered a talk on "Opportunities & challenges in Structural Engineering Profession - A Practitioner's Viewpoint" at the Department of Civil Engineering on October 8, 2022 as part of SEI Graduate Student Chapter.

Dr. Anukriti Mathur, ME Biotechnology, currently pursuing her post-doctoral research at Australian National University, Canberra (Alumni, 2014) delivered a talk on "Innate immune recognition of bacterial toxins" at the Department of Biological Sciences on October 14, 2022.

Dr. Sibani Prasad Sarangi, Associate Director at CRISIL, delivered a webinar on "Risk Management in Banks: Credit and Market Risk", at the Department of Economics and Finance on October 15, 2022.

Mr. G.K. Sahu, Senior Principal Scientist, CRRI, delivered a talk on "Health Monitoring of Bridges through Instrumentation" at the Department of Civil Engineering on October 21, 2022.

Dr. Anjali Yadav, Ph.D. Academia Sinica, New Taipei, Taiwan (Alumni, 2014) delivered a lecture on "Studying the mechanisms underlying anti-inflammation and nerve regeneration by sodium phenylbutyrate and platelet rich growth factors in rat model of sciatic nerve transectio" at the Department of Biological Sciences on October 29, 2022.

- Professor Dr. Shantanu Sengupta, Institute of Genomics and Integrative Biology, CSIR delivered a talk titled "Identifying risk predictors for Cardiovascular Disease in India: A multi-omic approach" at the Department of Biological Sciences on October 31, 2022.
- **Prof.** Prem Chhetri, Professor, RMIT Australia, delivered a talk on "From Geometry to Supply Chain Network: Searching for Innovative Ideas" at the Department of Mathematics on November 1, 2022.
- **Dr. Dhiraj Bhatia, a Ramanujan fellow, IIT Gandhinagar** delivered a talk on "Programmable DNA nanodevices to instruct biological systems" at the Department of Biological Sciences on November 19, 2022.
- Dr. Karthik Ramesh, Vice President Strategy, Transformation and Innovation, Emids Technologies, delivered a talk on "Data Saga through Visualization and Advanced Analytics" at the Department of Management on November 26, 2022.
- **Prof. Joy Scaria, South Dakota State University, USA** (Alumni, 2006) delivered a talk on "Utilizing microbiome science to improve host health and to combat antimicrobial resistance" at Department of Biological Sciences, on November 26, 2022.
- Prof. J. P. Talwar, eminent scientist, Director, Research, Talwar Research Foundation New Delhi delivered a talk on "Mission oriented Research Leads to Products of Utility" as part of the lecture series 'Excitement in Science: Insights and Perspectives' at the Department of Biological Sciences organized jointly with BITS BioCyTiH Foundation on December 3, 2022.
- **Dr. Rahul Paul, National Institute of Immunology (NII), New Delhi**, delivered a lecture on "Disorders of Proliferation: Analysis of Novel Pathways and Targets" as part of the lecture series 'Excitement in Science: Insights and Perspectives' at the Department of Biological Sciences organized jointly with BITS BioCyTiH Foundation on December 3, 2022.
- **Dr. Lipi Thukral, Institute of Genomics and Integrative Biology, New Delhi**, delivered a talk on "Autography in 3D space –changing goal post after Alpha fold era" as part of the lecture series 'Excitement in Science: Insights and Perspectives' at the Department of Biological Sciences organized jointly with BITS BioCyTiH Foundation on December 3, 2022.

- Dr. Onkar N. Tiwari, Department of Biotechnology, Ministry of Science and Technology, Government of India, delivered a lecture on "Genetics & Genomics in Healthcare: Initiatives and Priorities" as part of the lecture series 'Excitement in Science: Insights and Perspectives' at the Department of Biological Sciences organized jointly with BITS BioCyTiH Foundation on December 3, 2022.
- Mr. Abhik Giri, Principal Operations Research Scientist, Western Digital (SanDisk), delivered a talk on "Operations Research: An Industry Perspective" at the Department of Mathematics on December 3, 2022.
- Mr. Sandip Jagtap, Business Manager, Labindia Analytical Instruments Pvt. Ltd., Bangalore, delivered a talk on "Applications of FTIR and 2D NMR in Pharmaceutical Research" at the Department of Pharmacy on December 3, 2022.
- **Mr. Vikram Singh, Director Digital Marketing, GGS** delivered an online lecture on "Role of Analytics in Performance Marketing" at the Department of Management on December 4, 2022.
- Dr. Jogender Singh, Assistant Professor and Ramalingaswami fellow, Indian Institute of Science Education and Research (IISER), Mohali, delivered a talk titled "Reductive stress by thiol antioxidants activates the hypoxia response pathway" at the Department of Biological Sciences on December 10, 2022.
- Mr. Anand Kabra, Global Head of Workforce Management, Ms. Shreya Choudhury, specialist-workforce management processes and programs, and Mr. Shreshth Raitani, specialist-talent supply chain programs, Wipro Technologies, delivered a talk on "end-to-end HR processes in an organization setup and role of data analytics tools and algorithms" at the Department of Management on December 10, 2022.
- **Prof. Krishna lyer, Professor, Bombay College of Pharmacy, Mumbai,** delivered a talk on the topic "Basic Principles of Pharmacokinetics" at the Department of Pharmacy on December 13, 2022.
- Dr. Yogesh Kulathu, MRC PPU, School of Life Sciences, University of Dundee (Alumni, 2000) delivered a talk on "How does information transfer occur inside cells: Multifaceted roles of the ubiquitin system" at Department of Biological Sciences on December 21, 2022.

Significant Projects

PI & Co-PIs	Department	Project Title	Agency	Amount (INR) & Duration
Dr. Shilpi Garg	Biological Sciences	Deep Learning based automatic detection system for rapid scanning of malaria positive blood smears with varied resolution images	ICMR (under MERA Programme)	50,00,000 2 Years
Dr. P. Srinivasan	Mechanical	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-DST	40,00,000 3 years
Dr. Partha Sarathi Addy	Chemistry	Systematic Study Towards the Development of Stimuli Responsive Noncanonical Peptide-Based Optical Probes (NcPOPs) Targeting Important Biomarkers	SERB	32,70,872 2 years
Dr. Shaifali Gurjar	Pharmacy	Mechanism based study of Triphala and its constituents on 3T3-L1 cells, Human Adipocytes and Diet induced Metabolic Syndrome in Mice	SERB	33,69,520 3 years
Dr. Dailp Kumar	Chemistry	Synthesis of Chlorophyll-a-derived photosensitizers and developing their nano-formulations for enhanced photodynamic therapy	SERB	36,67,400 3 years
Dr. Mohit Garg	Chemical	Biodegradable, Flexible and Printable Ambipolar Organic Field-Effect Transistors Based on Cellulose and Naphthalenediimide Co-polymer	SERB	32,60,400 2 years
Dr. Satyajit Patra	Chemistry	Boosting the fluorescence of low quantum yield fluorophores and long range Förster resonance energy transfer (FRET) using anisotropic plasmonic nanoantenna	SERB	32,39,962 2 years
Dr. Balakumaran Chandrasekar	Biological Sciences	Elucidating the glycobiology of host-pathogen interactions at the cell wall interface for engineering charcoal rot resistance in soybean under abiotic stress conditions	SERB	32,01,000 2 years
Dr. Pritam Kumar Jana	Chemistry	Self-assembly to Photonic Crystals using DNA- Coated Anisotropic Colloids	SERB	28,19,872 2 year
Dr. Sangeeta Sharma	HSS	Recycling for conservation of environment	DSIR	22,00,000 2 years
Dr. Hari Om Bansal	EEE	Photovoltaic Fed Microgrids: Integrated Intelligent Harmonic Control to Enable Electric Vehicle Charging	CPRI	20,55,000 2 years
Dr. Sandipan Dutta	Physics	The role of rigidity in the unfolding of proteins	SERB	13,23,298 2 years
Dr. Tribeni Roy (Co-PI)	Mechanical	Self-charging biocompatible supercapacitors for enabling on-time and efficient drug delivery for chronic diseases	The Royal Society	11,76,141 2 years

PI & Co-PIs	Department	Project Title	Agency	Amount (INR) & Duration
Dr. Balakumaran Chandrasekar	Biological Sciences	Investigation of the role of extracellular polysaccharide (EPS) matrix in Macrophomina phaseolina during infection of soybean roots (Glycine max L.)	ACRG-BITS	10,00,000 2 Years
Dr. Navneet Goyal	CSIS	Automated Body-in-White Components Design using FEM and Deep Learning	Mercedes-Benz Research and Development India Pvt. Ltd.	8,00,000 8 months
Dr. Saket Verma	Mechanical	Feasibility Study of metal Hydirde based thermal storage systems for buildings	SERB	7,46,364 2 months
Dr. Jitender Kumar	Mathematics	A Study of Certain Graphs Associated to Finite Groups	SERB	7,20,466 3 years
Dr. Jayendra Nath Bandyopadhyay	Physics	Floquet Engineering of Lie Algebraic Open Quantum Systems	SERB	6,60,000 3 years
Dr. Bhupendra Kumar Sharma	Mathematics	Sensitivity analysis of magnetic nanoparticles drug delivery through a curved stenotic artery	SERB	6,60,000 3 years
Dr. Sandipan Dutta	Physics	Information thermodynamics of molecular recognition in enzymes	SERB	6,60,000 3 years
Dr. Divyansh Patel	Mechanical	Through-mask electrochemical micro-texturing on curved surfaces using triangular pulsed voltage	SERB	6,31,676 2 years
Dr. Krishna Chaitanya Etika	Chemical	Test Method Development for Releasable Formaldehyde-Content Detection from Artificial Leather	M/s Mayur Uniquoters Ltd. Jaipur, Rajasthan	5,03,447 6 months
Dr. Ashutosh Bhatia	CSIS	Developing frontend for virtual farms "Grow for You"	KSKT Agromart Pvt. Ltd. Gurugram	4,36,600 6 months
Dr Revendranath Tirumalsety (Co-PI)	Management	Intellectual Property for Sustainability	British Council-University of Cambridge	3,45,000 1 year
Dr. Sainath Bitragunta	EEE	Quantum Algorithms for Efficient Wireless Energy Transfer in Renewable Sensor Networks.	Ministry of Electronics & Information Technology	3,35,792 1 year
Dr. Sai Sesha Chalapathi Gattupalli	EEE	Computational learning through context adaptation for effective and Efficient Agriculture	TIH-IOT, IIT Bombay	2,48,875 1 year

BITS Pilani, Pilani Campus

Student round up

Interface 2022



The Department of Management organized the 44th edition of its flagship event, Interface, after a break of 2 years, during September 23-25 2022. It was a 3-day extravaganza combining academic vigor and industry insights. Interface is a pan India management fest organized by the institute and is a legacy event of the Department of Management, BITS Pilani, Pilani campus.

The event was inaugurated with lamp lighting which perfectly encapsulated the theme of interface, "Realm of Vision". Mr. Rahul Devunuri, President, MASSOC, kicked off the event with a welcome note followed by a brief introduction on the exciting events. Prof. Udayan Chanda Head, Department of Management welcomed and addressed the gathering. Prof. Sudhirkumar Barai, Director Pilani campus gave a motivating speech to the students and welcomed the chief guests and keynote speakers. The Chief Guest Mr. Sumit Nandedkar, former COO Microtek International, the keynote speakers Mr. Amitesh Sinha, Head of Advisory, Partner – SIMA funds and Angel Investor, and Mr. Babu K.S., Head of Global Regulatory Affairs at Pfizer Healthcare India Pvt. Ltd graced the event.

The theme, "Realm of Vision" aimed to stimulate discussions on the challenges organizations face as they move from crisis response caused by pandemic to the path of recovery. Various clubs under the Department of Management organized events to test technical and business acumen of students. The event saw great success with overwhelming participation from top B-schools around the world.

NSS Dental Health Camp

The NSS BITS Pilani community had organized a dental health camp on September 28, 2022. It focused on dental issues faced by workers in and around Pilani Campus. The NSS Family is grateful to Dr. Neera Sharma (B.D.S. and M.I.D.S.), a dental surgeon in Vinayak Dental Hospital, Pilani who participated in the camp. Her active participation and guidance proved to be the key factor in the success of

the camp. 81 workers were diagnosed and treated for various dental issues in a short span of 2.5 hours. The NSS Community promises to bring many more such initiatives to help the underprivileged.

NSS Health Camp



BOSM 2022

After a gap of two years, BOSM, BITS Open Sports Meet held on October 14, 2022. The grand opening ceremony took place in the main auditorium and filled all with enthusiasm and excitement. All the Cossacks, the co-sports secretary and the chief sports secretary, were invited on the stage. Prof. Sudhirkumar Barai, Director, Pilani campus and the chief guest, Subedar Major Jitu Rai were welcomed. A musical program presented by Gurukul enhanced the aura of the ceremony. The DVM gave a demo of the BOSM 2022 application through which players and guests could persue the facilities available on BITS campus. The theme for Oasis 2022, the cultural fest of BITS Pilani, 'Demesne of the lost gold' was also released.

Prof. Barai addressed the audience and announced the M. S. Venkatesh Sports Excellence Award instituted by Batch of 1991 in the loving memory of Shri M.S. Venkatesh, alumni 1991. The award will be given annually to the top three students who excel in overall sports. The Director also quoted, 'After a dream is broken, while dreaming another dream, it is life to achieve it'.

The chief guest, Subedar Major Jitu Rai, expressed his gratitude for the invitation and said how a person can reach any height on the strengths of hard work, sacrifice and discipline. He spoke about his sports journey which started from a small village, Sankhuwasabha in Nepal. Despite financial difficulties at home, he worked hard day and night and won one gold and two silver medals in the 2014 World Cup. He encouraged everyone to participate in events like BOSM and make the most of it.

The chief guest inaugurated BOSM 2022 by lighting the torch at GymGround. The oath-taking ceremony also took place for the Sports Secretary Ekansh Agarwal and the other

players. BOSM was a great success with participants from across the country and tough competitions.

BOSM 2022





Oasis 2022

The golden jubilee edition of Oasis '22 started off with its upbeat and energetic inaugural ceremony on November 19, 2022. Mr. Shabbir Boxwala, producer of Shershah, was the chief guest of the event, and he talked about his experiences in the film industry. Prof. Souvik Bhattacharya, Vice Chancellor, BITS Pilani, Prof. S.K. Verma Dean Administration, Prof. A. P. Singh Dean AUGSD, Prof Navin Singh, Associate Dean SWD, along with Prof. R. P. Mishra, Chief Warden were present at the inauguration ceremony. The Golden Jubilee edition, themed "Demesne of the Lost Gold", was larger and more immersive than the earlier editions.

Oasis 2022 Events





The fest had more than 100 events over a period of 96 hours. It had three concerts and one comedy show, featuring notable names like Amit Trivedi, Seedhe Maut, Sevenn, Gaurav Kapoor, Samay Raina and more. There were various interesting events and competitions like Prom Nite, Rocktaves, Neon Party and Andholika to take the Fest experience to another level. Oasis lit up the campus for 4 days and was a huge success with participants from across the country competing in various events and unwinding with music, dance and delicious food. It was an exhilarating experience.

One of the attractions of Oasis was Solar Cooked Food Stall put up by Prof. Manoj Kumar Soni, Department of Mechanical Engineering, members of the Renewable Energy Club and students registered in the BITS F462 Renewable Energy course. Several delicacies were available at the food stall. The profit earned during the event, INR 10,100 was donated to Nirmaan organization, an NGO run by students of BITS Pilani. The event was covered by the INDIA TIMES newspaper.

Solar Cooked Food Stall at OASIS 2022



Students' Achievements



Arjun Jaideep Bhatnagar (2021H1540858P) was nominated by a selection committee from the MBA BA 2021-2023 batch to represent BITS Pilani at the 29th Edition of Business School Affaire & Dewang Mehta National Education Leadership Recognition presented by Times Ascent organized as part of World

Marketing Congress. The event was held on November 23, 2022 at Taj Lands End, Mumbai. He secured the 8th position amongst more than a hundred participating B-schools including IIMs, TISS, SCHMRD etc. under the category of Best Student in Management.

Arjun has been conferred upon the prestigious Kartikeyan Award by the Department of Management, BITS Pilani, Pilani campus. The Kartikeyan Award was constituted in

1970s and since then it is given to an exemplary student, displaying leadership potential, inspiring his peers and contributing to the batch in a holistic manner.



Sayantan Paul (2021H1540807P), Parthasarathi Bera (2021H1540811P) and Indika Debnath (2021H1540818P) as Team Bizalytics were the runner-up of the event 'Analytica', a pan India data analytics competition, organized by ICAR-National Academy of Agricultural Research Management (NAARM), Hyderabad during September 16-17, 2022. The competition focused on formulating an agribusiness strategy, deriving business insights using data analytics. The event comprised of three rounds and various teams from IIMs and IITs participated in the event.

Team Bizalytics



Nivash R. (2021PHXP0060P) won the Best Poster Presentation award at Student Conference on Optics and Photonics held during September 28-30, 2022 at Physical Research Laboratory, Ahmedabad, Gujarat.

Ritvik Yadav (2022H1420200P), pursuing his doctorate in the field of Manufacturing Systems engineering was granted a patent for Multi Utility Pen for students and professionals on September 9, 2022. The multi utility pen consists of four items – a 3-R removable multi-pen with four different inks red, blue, green and black, a 3-R detachable whitener, pencil and an eraser. All items are detachable and ecofriendly thus reducing waste.

Hrishit Mohan Das (2020A3PS0346P) along with team

members Neetha Nair, Rina Ishikawa and Haruki Ouchi secured second place (Runner's up) in the Teamwork award at Hack the Innovative Future Ideathon organized to commemorate the



70th Anniversary of the establishment of the diplomatic relations between Japan and India. The Ideathon had 40 participants, 20 students each from India and Japan. It was an all-expense-paid 9 day venture-based ideation trip where the participants visited several Indian cities in the first 5 days, post which they had to ideate and solve a problem that plagued Indian society. The aim of the visit was to experience the manufacturing prowess of India and Japanese perfection and efficiency. The final ideathon and presentation was held at the newly built Varanasi International Cooperation and Convention Center (VCC). The parameters for judgement were the economic and social impact and business viability.

Hrishit Mohan Das



Introducing new faculty

S.No.	Name	Designaiton	Department
1	Deepak Sharma	Visiting Faculty	Management
2	Bharat Richhariya	Assistant Professor, Gr-I	Computer Science & Information Systems
3	Pawan Kumar Mishra	Visiting Faculty	Computer Science & Information Systems
4	Shailesh Trivedi	Assistant Professor, Gr-I	Mathematics
5	Pubali Mandal	Assistant Professor, Gr-I	Civil Engineering

Editorial team

Editor:



Dr Anupam Yadav Humanities and Social Sciences

Student Member:



Ankita Upadhyay 2021H1540803P

Special Thanks



Prof Gajendra Singh ChauhanFaculty In-charge,
Publications and Media Relations



Mr. Ramesh SharmaPublications and Media Relations



mediaspeak

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