Semester - I notes 2022-23

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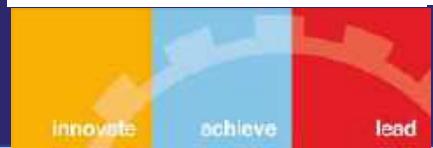
from the
editor

Dear Readers,

We are pleased to present to you the 26th Issue of BITSCAN magazine.

Students exuberantly returned to campus to welcome the new academic year – in a near normal schedule. Students were so delighted to receive their degrees during Convocation held at our grand auditorium, and catch up with their teachers and friends after a two years' pandemic-induced gap. Two faculty members of our campus along with 27 from our other campuses featured among the world's top 2% highly-cited scientists in a list curated by Stanford University in October 2022. In addition to this, various government and non-government agencies sanctioned 27 very significant research projects worth over Rs. 18 crores to different departments during this semester.

BITS Goa signed 10 MoUs during the last semester aimed at collaboration for joint research with various organizations, including with Goa Police, NIO, GCCI and Apollo Tyres. We have come back on track of disseminating knowledge by organizing seminars, conferences, workshops, lectures, talks, etc. Hon. Chief Minister of Goa, Dr. Pramod Sawant inaugurated two programmes – 'Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI) Workshop' and 'International Conference on Information Security, Privacy and Digital Forensics'. We successfully organized a major conference of this semester – 'International Conference on Drug Discovery - 2022 (ICDD-2022): Success Stories - From Computation to Clinical Trials' attended by over 1300 participants. We also hosted several eminent speakers from India and abroad who delivered lectures / webinars for our students and faculty members. The Director, Prof. Kundu welcomed Ambassador of Israel, H.E. Mr. Naor Gilon and Consul General at the U.S. Consulate General Mumbai, Mr. Mike Hankey to campus in Nov and Dec respectively. Our ever-enthusiastic faculty members continue to get appointed on editorial boards and invited to review reputed international and national journals. In addition to fulfilling teaching and research assignments, they also pursue various initiatives such as delivering invited lectures and conducting workshops at reputed institutions, and presenting papers about their novel research in India and abroad.

In this edition, you will like to read about the initiatives of BITS BioCyTiH Foundation (A Section 8 Company). It's an initiative by BITS Pilani, funded by the National Mission on Interdisciplinary Cyber- Physical Systems (NMICPS), of Department of Science and Technology, Government of India.

As usual, our students continue to win accolades in India as well as abroad and make us proud. Project CanSat-Team Rayquaza qualified for CanSat India competition, Project Kratos secured 2nd rank at Anatolian Rover Challenge, Turkey, BITS Student team 'BITSnPieces' wins the first Goa Police Hackathon, Accessible Labs wins Student Design Challenge at the EMPOWER 2022, Team AlgoManiaX participated in the International Collegiate Programming Contest, Music Society participated in Festember, the annual cultural festival of NIT Tiruchirappalli and students winning at the BOSM 2022, are just a couple of proud achievements. See full list on inside pages.

Last but not the least, I wish to sincerely thank the contributions of Prof. Rayson K. Alex, Dr. Indrani Talukdar and Dr. Rajorshi Sen Gupta for sparing their valuable time in editing the BITScan issues since 2016. On the other hand, I welcome our new team of Prof. Arnab Banerjee, Dr. Amitendu Bhattacharya and Dr. Nilak Datta.

We thank the entire BITS community for their contributions and support in bringing out this issue of BITSCAN.

Convocation 2022

Convocation of BITS Pilani, K.K. Birla Goa Campus was held in our magnificent auditorium on 11th Sept. 2022. Dr. Rajesh S. Gokhale, Secretary, Department of Biotechnology, Government of India, was the Chief Guest for the Convocation. Dr. Kumar Mangalam Birla, Chancellor, BITS Pilani; Mr. Dilip Gaur, Member of the Board of Governors; Prof. Souvik Bhattacharyya, Vice-Chancellor, BITS Pilani; Prof. Suman Kundu, Director, BITS Pilani, Goa Campus; Prof. Sudhir Kumar Barai, Director, BITS Pilani, Pilani Campus; Prof. Srinivasan Madapusi, Director, BITS Pilani, Dubai Campus; Members of the Senate, faculty and staff members of Goa campus and several distinguished guests, along with the graduating students and their family members, were present on this occasion.

In his convocation address, Dr. Rajesh Gokhale, Secretary of DBT, lauded BITS Pilani University as a veritable centre of innovation, research, and entrepreneurial energy. He urged the graduating students to carry forward the innovative spirit embedded in the BITS system and work towards positioning India as a global power. In his address, Dr. Kumar Mangalam Birla, Chancellor of BITS Pilani University, pointed out that the pandemic opened up opportunities for innovation in technology and science. He motivated the graduating students to use the knowledge and expertise acquired at BITS to transform the world. Prof. Souvik Bhattacharyya, Vice-Chancellor of BITS Pilani University, presented an overview of the University's accomplishments and highlighted its pioneering role in fostering innovation and entrepreneurship in higher education.

Prof. Suman Kundu, Director of BITS Pilani Goa Campus, gave a detailed report on the activities of the Campus, offering a comprehensive overview of the advances made in research and the new initiatives and collaborations undertaken.

The medal winners from the Bachelor's degree programs included Mr. Jagtap Nishant Nanasaheb (Gold Medal), Mr. Yash Joshi (Silver Medal), and Mr. Aryan Sanjay Ochani (Bronze Medal). This year 1029 students were declared eligible to receive their degree: 36 Doctoral, 157 M.E., 4 M.Phil., 593 B.E., and 239 M.Sc. Over 70% of the students received their degrees in person, and the degrees of the remaining students were dispatched to them. 150 students who graduated through the Work Integrated Learning Programmes (WILP) also received their degrees in this convocation ceremony. Distinguished Alumnus, Distinguished Services, and BITS Ratna are awards presented to the BITS Alumni for their outstanding contributions to BITS, the BITS community, and society at large — this year, a total of 18 awards in these 3 categories were announced. Two alumni: Mr. J.C. Chaudhry, Managing Director of Aakash Institute/ Aakash IIT-JEE, and Mr. Diaz Nesamoney, Founder-President and CEO of Jivox, received their awards at the Goa Convocation. Mr. Chaudhry won the award in the Category of Entrepreneurship, whereas Mr. Nesamoney in the Category of Public Life/ Entrepreneurship/ Philanthropy. Mr. Prashanth Palakurthi, Founder of Reflexis Systems, was the recipient of the first BITS Ratna Award presented to him at the Pilani Convocation. Mr. Palakurthi made a generous donation of $1M to BITS Pilani, his alma mater, the largest individual pledge ever received by BITS Pilani, for setting up the Anuradha and Prashanth Palakurthi Centre for Artificial Intelligence Research (APPCAIR) in Goa campus and to support the Innovation Centre in Pilani campus.

Prof. D.M. Kulkarni, Dean of Administration, BITS Pilani Goa Campus, concluded the ceremony by presenting the Vote of Thanks.

A confluence of ideas
academia

29 researchers from BITS Pilani among the world's top 2% highly-cited scientists

Prof. Narendra Nath Ghosh, Department of Chemistry, and Prof. Meenal Kowshik, Department of Biological Sciences, of BITS Pilani Goa Campus featured among the world's top 2% highly-cited scientists in both 'career-long data (end-of-2021)' and 'single recent year data (2021)' categories in a list curated by Stanford University and published on 10 th Oct. 2022. For their research publication citation and lifetime contribution to specific research fields, the same Stanford list includes — apart from Professors Ghosh and Kowshik — 27 other researchers from BITS Pilani University. As per thelist, BITS Pilani is among India's top 10 technical institutions. The list classified scientists into 22 fields and 176 sub-fields. Prof. Ghosh's sub-field was 'Materials' and Prof. Kowshik's sub-field was 'Biotechnology' under 'Enabling & Strategic Technologies' The listing process selected the world's top 1,00,000 scientists by c-score (with and without self-citations) or a percentile rank of 2% or above in the sub-field by taking into account the researchers' publications and citations using Scopus author profiles. Their lifetime contributions to specific research fields also led to their appearing on the list. The selection used Scopus data updated up to the end of the citation year 2021 that Elsevier provided through ICSR Lab.

Prof. Ghosh has immensely contributed to the research area of nanomaterials and nanotechnology. Under his guidance, his research group members develop new methods to prepare varieties of nanostructured materials. Recently, this group was successful in preparing nanocomposites from coconut fibers. The materials Prof. Ghosh's research group developed have demonstrated potential for wastewater treatment, electric storage devices, and defense applications. His research is supported by various national and international funding agencies such as DST, DRDO, DAE, UGC, CSIR, Aditya Birla Group, British Council, and Royal Academy Engineering (U.K.). Prof. Ghosh published more than 100 research papers in reputed international journals.

Prof. Kowshik works in nanobiotechnology and develops non-toxic nanomaterials as antimicrobials, bio-imaging, and gene delivery agents. She explores the possibility of using nanomaterials for agriculture applications, focusing on fortifying traditional leafy vegetables grown in Goa with micronutrients such as Zinc. She won grants from the Ministry of Earth Sciences, DST, CSIR, ICMR, and BITS Pilani for her research projects. She published more than 50 research papers in high-impact international and national journals.

Samarpan 2022

On 5th Sept. 2022, the Teaching-Learning Centre (TLC) celebrated Teachers' Day in a special event, "Samarpan 2022", in which Prof. Suman Kundu, Director of BITS Pilani Goa Campus, felicitated the faculty members who completed 10 years of service in the Institute.

Dr. Pravin Mane (EEE), Dr. Mayank Goel (Mathematics), Prof. Ranjan Dey (Chemistry) and Prof. Manoj Kumar Pandey (Mathematics) were conferred the Teaching Excellence Awards for 2022.

MOUs/ Research Agreements

Goa Police and BITS Pilani Goa Campus to Collaborate for Innovation in Policing

Goa Police and BITS Pilani Goa Campus joined hands to find innovative solutions to strengthen policing in the state. Shri Jaspal Singh (IPS), Director General of Police, Goa and Prof. Suman Kundu, Director of BITS Pilani Goa Campus, signed a Memorandum of Understanding (MoU) to that effect on 15th Aug. 2022. To enable predictive policing and to anticipate future policing demands, Goa Police and BITS Pilani Goa Campus will jointly research and develop projects involving Artificial Intelligence, Machine Learning, and other technologies. To fight cybercrime, the two organizations will also work on cybersecurity-related initiatives. They will collaborate on creating large-scale awareness among citizens about crime and its prevention. Both organizations will share their expertise, technical know-how, and resources to attain mutually-agreed aims. Additionally, the two sides discussed possibilities of conducting specialized courses in crime and technology to train Goa police personnel and BITS Goa students.

Prof. Kundu remarked that, by providing scientific insights, academic institutes have the potential to offer practical help in criminal investigations. He added that modern digital tools and out-of-the-box thinking could extend the possibilities of cyber-

crime and digital forensics. He hoped this initiative would enable BITS Pilani to contribute to Goa Police and the country through student internships and hackathons.

Shri Jaspal Singh observed that there is an enormous scope to apply artificial intelligence in solving complex security-related problems. He asserted that the shared understanding between Goa Police and BITS Goa would go a long way in serving the citizens of Goa more efficiently and effectively. The IGP and SP (Crime) of Goa Police, and the Dean (Administration) and Associate Dean (Sponsored Research and Consultancy Division) of BITS Pilani Goa Campus were present during the occasion of the signing of the MoU.

BITS Pilani Goa Campus and CSIR-NIO sign MoU

CSIR-National Institute of Oceanography, and BITS Pilani Goa Campus signed a Memorandum of Understanding on 11th Oct. 2022 to develop a long-term collaboration on education, training, and research in biology, chemistry, marine instrumentation, and high-performance computing. Prof. Sunil Kumar Singh, Director of CSIR-NIO, and Prof. Suman Kundu, Director of BITS Pilani Goa Campus, signed the MoU. Dr. V. Sanil Kumar and Mr. Venkat Krishnamurthy of CSIR-NIO, and Profs. D. M. Kulkarni and Meenal Kowshik of BITS Pilani Goa Campus were present during the occasion. CSIR-NIO and BITS Pilani Goa Campus have a long history of cooperation in various scientific domains of mutual interest. This MoU provides a roadmap for further meaningful interactions based on the two sides' individual strengths in oceanography. Given CSIR-NIO's high-standard research in ocean data collection, environmental impact assessment, and ocean modeling, this collaboration heralds a new synergy between both organizations.

Date	MoU/ Research Agreement with	Nodal Department
1st Aug 2022	National Entrepreneurship Network – A.I. unit	CS&IS
23rd Aug 2022	Apollo Tyres	Chemical Engineering
23rd Aug 2022	HappyMonk	CS&IS
7th Oct 2022	Goa Chamber of Commerce and Industry	BITS
10th Nov 2022	Dystrophy Annihilation Research Trust	Biological Sciences
11th Nov 2022	Government of Goa, Deputy Conservator of Forests, Research & Utilization Division	Mechanical Engineering
18th Nov 2022	Entropik Technologies Private Limited	Mechanical Engineering
7th Dec 2022	Druva Data Solution Pvt Ltd	CS&IS

Seminars/conferences/workshops/ training programs

Workshop on "Basic Molecular Biology Laboratory Tools & Techniques"

BITS Goa Innovation Incubation Entrepreneurship Society (BGIIES) at BITS BIRAC BioNEST Innovation Lab organized a three-day workshop on "Basic Molecular Biology Laboratory Tools & Techniques" during 1st – 3rd Aug. 2022. Dr. Malabika Biswas, Associate Professor, Department of Biological Sciences, with support from the Ph.D. scholars of the Department, conducted the workshop. The workshop emphasized hands-on training through experimentation in molecular biology techniques such as DNA amplification, restriction digestion, and competent cell preparation using laminar flow, multistage incubator, PCR machine, gel electrophoresis, and deep freezer. Researchers from Goa University, ICMR-National Institute of Malaria Research, PES's RSN College, Dhempe College of Arts & Science, and BITS Pilani attended the workshop. The BGIIES supports start-ups in the ideation or pre- seed stage with the pre- incubation program and the start-ups in the MVP or seed stage with its incubation program. The Society also funds deep tech start-ups under the Start-up India Seed Fund Scheme.

Outreach Event for the launch of DISC 7 (SPRINT) and Prime (SPRINT)

In partnership with iDEX-DIO, BGIIES organized a "Physical Outreach Event" on 8th Aug 2022. The event supported the 7th edition of Defence India Start-up Challenge (DISC) launched with 69 Problem Statements (P.S.) from Indian Navy under DISC 7 (SPRINT), and the 1st edition of iDEX Prime (SPRINT) launched with 6 Problem Statements (P.S.) from Indian Navy under iDEX PRIME. The Innovations for Defence Excellence (iDEX) scheme under the aegis of the Department of Defence Production, Ministry of Defence, Government of India, aims at creating an ecosystem to foster innovation and technology development in the fields of defense and aerospace by engaging MSMEs, start-ups, individual innovators, R&D institutes & academia. Defence Innovation Organisation (DIO), a not-for-profit company under Section 8 of the Companies Act 2013, manages and funds iDEX. During the Naval Innovation and Indigenisation Organisation (NIIO) seminar "Swavlamban" in New Delhi on 18th July 2022, Prime Minister Shri Narendra Modi

unveiled "SPRINT Challenges"to boost the use of indigenous technology in the Indian Navy.

In his welcome address at the outreach event, Prof. Suman Kundu, Director of BITS Pilani Goa Campus, affirmed BITS Pilani's continuous support to such nation-building initiatives through its talented faculty members and students. The iDEX representative made a detailed presentation on planning the 7th edition of DISC. Shri Sanjay Jaju, Additional Secretary (DP)- CEO/DIO, delivered the keynote speech. The other officers who spoke at the event are Cmde AP Golaya, OiC, TDAC (Technology Development Acceleration Cell – the innovation arm of NIIO); Cdr Sandeep Dhankar; and Cdr Rahul Verma of the Indian Navy. Prof. Mridula Goel, Joint Secretary, BGIIES, presented the start-ups showcase session where she showcased Bactreat Environmental Solutions LLP, Kula Studio, and the innovations by Abhijit, Ph.D. Scholar (EEE) and Keshav, Ph.D. Scholar (Computer Science) in the domain of waste management and sustainability. The event was organized in partnership with FiiRE Goa, Goa State Innovation Council (GSIC), Goa Technology Association (GTA), and MAC33-Aero.

Workshop on E.V.s by Prof. Siddhartha Mukhopadhyay

The Department of Electrical & Electronics Engineering (EEE) organized a half-day workshop on **'Development of Electric Vehicles, Softwares, Architecture and Control'** on 8th Sept 2022. Prof. Siddhartha Mukhopadhyay, Department of Electrical Engineering, IIT Kharagpur, conducted the Workshop. Prof. Mukhopadhyay pointed out various practical issues that will help the par

ticipants to explore different areas in E.V. when they start their research in this field. He covered areas such as SoC estimation techniques, managing different batteries, charging- discharging issues, and range extension problems. Over 25 participants attended the workshop, including faculty, research scholars, and students from BITS Pilani Goa Campus and other colleges in Goa.

Symposium on "Covid-19 Pandemic and The Way Forward"

The Department of Biological Sciences organized a two-day symposium on "Covid-19 Pandemic and The Way Forward" on 16th – 17th Sept. 2022. The symposium was organized in collaboration with the Serum Institute of India, Pune, and The Roseman University of Health Sciences, USA. Eminent resource persons who spoke at the Symposium are Dr. Gagandeep Kang, Professor of Microbiology, Division of Gastrointestinal Sciences, Christian Medical College, Vellore, Tamil Nadu; Dr. Gagan Matta, Department of Zoology & Environmental Science, Gurukula Kangri, Haridwar; Dr. Chandrakant Lahariya, Founding Director, Foundation for People-centric Health systems, New Delhi, and former medical doctor with the World Health Organization; Dr. Kaushik Bharati, Health Policy Consultant, UNESCO, New Delhi; Dr. Umesh Shaligram, Director of R&D, Serum Institute of India, Pune; Prof. Manas Mandal, Professor of Pharmaceutical Sciences, Roseman University of Health Sciences, USA, and Adjunct Faculty, JSS Academy of Higher Education and Research, Mysuru; and Dr. Anil Mehndiratta, Pulmonologist, Goa.

Workshop on the Basic Principles of Nuclear Magnetic Resonance (NMR) Spectroscopy

The Central Sophisticated Instrumentation Facility (CSIF) organized a two-day workshop on the basic principles of Nuclear Magnetic Resonance (NMR) spectroscopy on 21st – 22nd Sept. 2022. Around 80 participants from Goa University, IIT Goa, NIT Warangal, BITS Pilani, Deccan Chemicals, Syngenta, Pfizer, and O2H Ahmedabad participated in the workshop.

Dr. Anil Kumar, Senior Sales Manager & Application Scientist, and Dr. Chandra Sekhar, Lead Applications & Head of Bruker Academy of Bruker India, delivered lectures and provided hands-on training to all the participants. Prof. Suman Kundu, Director of BITS Pilani Goa Campus, welcomed the participants and shared anecdotal stories on using NMR spectroscopy in structure elucidation. The workshop lectures pertained to the basics of one and two-dimensional NMR spectroscopy and practical problem-solving of small molecule structure elucidation.

International Conference on "Advances in Data-driven Computing and Intelligent Systems"

APPCAIR, in collaboration with EECS-ISI Kolkata, Soft Computing Research Society, India, and Springer Nature (LNDET), organized an international conference on "Advances in Data-driven Computing and Intelligent Systems" (ADCIS 2022) from 23rd to 25th Sept. 2022. The conference was held in the hybrid mode, and keynote speakers included Prof. Nishchal Verma, IIT Kanpur; Mr. Aninda Bose, Executive Editor, Interdisciplinary Applied Sciences, Springer Nature; Prof. Shai Ben- David, University of Waterloo; Prof. Hussein A. Abbass, University of New South Wales; and Prof. Witold Pedrycz, University of Alberta, Canada.

Workshop on "Recent Trends in CAR-T Cells Research and Manufacturing"

The Department of Chemical Engineering organized a two-day virtual workshop, "Recent Trends in CAR-T Cells Research and Manufacturing", on 22nd – 23rd Sept. 2022. Dr. Jegatha Nambi Krishnan, Assistant Professor of Chemical Engineer, convened the workshop.

The Workshop provided a comprehensive overview of CAR-T cells research, manufacturing, and applications. The panel of speakers constituted experts from diverse backgrounds like industry, academia, and research bodies who shared their insights about recent trends in CAR-T cells research. The panel included Dr. Albeena Nisar, TATA Memorial Centre, Mumbai; Dr. Renu Pandey, Monitor Deloitte, New Delhi; Dr. Sheshank Shekar, AIIMS, Gorakhpur; Mr. Guillaume Koszegi, President, CAR- T Global Consultant, Quebec, Canada; Prof. Samit Chattopadhyay, Shri B. K. Birla and Shrimati Sarala Birla Chair Professor, BITS Pilani Goa Campus; Prof. Pranab Kumar Mondal, IIT Guwahati; Prof. Rajan Bawa, BITS Pilani Goa Campus & CTO at CARE Research, LLC USA; Mr. K. Y. V. Ramana, Pall Corporation; and Prof. Manas Mandal, Roseman University College of Pharmacy, USA.

Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI) Workshop

Dr. Pramod Sawant, Chief Minister of Goa, inaugurated the one-week STUTI Workshop on 26th Sept. 2022. The Workshop, held from 26th Sept. to 2nd Oct., was organized in collaboration with Shivaji University, Kolhapur, and was supported by the Department of Science and Technology, Government of India. Prof. Suman Kundu, Director of BITS Pilani Goa Campus; Prof. R G Sonkawade, Shivaji University, Kolhapur; Prof. Meenal Kowshik, Convener of the Workshop and Prof. Sunil Bhand, Co-convener of the Workshop were present on the occasion. Around 50 participants, including faculty members, Ph.D. scholars, and postgraduate and undergraduate students from Goa and other states, attended the workshop.

Dr. Sawant congratulated BITS Pilani for organizing the workshop and making sophisticated equipment available to researchers in and beyond Goa. He invited BITS Pilani to "collaborate with the Government of Goa for optimizing the output of the education sector for enhancing the use of the technology in the good governance initiatives."

The Chief Minister also visited two labs: Central Sophisticated Instrumentation Facility (CSIF), and BITS BIRAC BioNEST incubator. He appreciated the research work undertaken by BITS Pilani.

The STUTI scheme of DST promotes human resources capacity building through open access to S&T infrastructure across the country by organizing training programs on DST-supported R&D equi menttargeting Scientists/Professors/PhDs and PDFs across the country. The Workshop created awareness regarding the sophisticated instruments/software/experimental setups such as PPMS, Confocal microscope, Flow cytometry, AFM, I.C., BET, COMSOL multiphysics, and Fluid bed technology. The training program included theory lectures (two lectures per day) and demonstration/ hands-on training on sophisticated instruments.

Prof. R G Sonkawade, Head (I/c), University Science Instrumentation Centre (USIC), and Coordinator, Sophisticated Analytical Instrumentation Facility

(SAIF) at Shivaji University, Kolhapur, along with the following faculty members from various departments of BITS Pilani Goa Campus delivered lectures to the participants:

Biological Sciences: Prof. Anasuya Ganguly, Prof. Arnab Banerjee, and Dr. Raviprasad Aduri;
Chemistry: Dr. K. P. Jayadevan, Dr. V. Kiran, Dr. Subhasish Roy, and Prof. Sunil Bhand;
EEE: Dr. Sarang C Dhongdi, and Prof. Amalin Prince A;
Chemical Engineering: Dr. Amol Deshpande, and Prof. Srinivas Krishnaswamy;
Mechanical Engineering: Prof. Ranjit. S. Patil, and Prof. Sachin D. Waigonkar;
Physics: Dr. Indrani Chakraborty, and Prof. Ram Shanker Patel.

International Symposium on Bilingualism and Cognition (ISBC-2022)

The Second International Symposium on Bilingualism and Cognition (ISBC-2022) was organized by the Cognitive Neuroscience Lab in collaboration with the University of Hyderabad on 28th – 29th Oct. 2022. The core themes of the symposium included: the effects of bilingualism on cognitive functions like speech; rehabilitation through speech therapy and memory; the science of bilingualism; effects of neurodegeneration; identifying the cortical structures involved in language processing; cognitive control focus on language switching; cognitive mechanisms of visually situated linguistic behavior; cultural impact on the linguistics brain; complex sentence formation in children.

The symposium was inaugurated by Prof. B. J. Rao, Vice Chancellor, University of Hyderabad, and was attended by several national and in

ternational participants. Dr. Nandini Chatterjee Singh, UNSECO MGIEP-Mahatma Gandhi Institute of Education for Peace and Sustainable Development); Dr. Jubin Abutalebi, San Raffaele University, Italy; and Dr. Ramesh Mishra, University of Hyderabad, delivered talks during the symposium.

International Conference on Drug Discovery (ICDD-2022)

BITS Pilani Goa Campus and Schrödinger jointly organized the fourth edition of The International Conference on Drug Discovery - 2022 (ICDD-2022): Success Stories - From Computation to Clinical Trials. The Conference, held at BITS Pilani Goa Campus on 10th – 11th Nov. 2022, was attended by around 1300 participants. Dr. Karen Akinsanya, President, R&D, Schrödinger; Mr. Paul Davie, Vice President, Schrödinger; Dr. Raghu Rangaswamy, Vice President, Schrödinger India; Prof. Suman Kundu, Director of BITS Pilani Goa Campus; and Dr. Sumit Biswas, Convener of the Conference, were present at the inauguration ceremony.

Dr. Karen discussed the vast potential of drug discovery and the broad supportive platform Schrödinger provided for it. Prof. Suman Kundu expressed his optimism regarding the emergence of India as a drug discovery hotspot. He spoke of the need for a center of excellence in human disease and drug discovery in Goa. Top scientists from leading pharmaceutical companies (Glenmark, Gilead, Eli Lilly, Syngene, Jubilant, Aurigene, Aragen, Sun Pharma, etc.) and academic institutions (NCBS, NCL, InStem, IISc, IMTECH, Bose Institute, NITs, BITS, etc.) attended the conference.

The speakers and panelists included the Directors of CSIR- Indian Institute of Chemical Technology (IICT), CSIR–Central Drug Research Institute, North East Institute of Science and Technology (NEIST), and Indian Institute of Integrative Medicine (IIIM-Jammu), as well as eminent chief scientists from organizations actively engaged in drug discovery. Seven hundred thematic posters were presented over a span of two days. The conference highlighted the recent growth and promising future of drug discovery platforms.

Workshop on "Analysis, Differential Equations & Computation"

The Department of Mathematics organized a workshop on "Analysis, Differential Equations & Computation" during 12–13 November 2022. The workshop focused on modern analysis, differential equations, and computation. MATLAB sessions were also conducted to provide hands-on practice. Prof. A. K. Nandakumaran from the Department of Mathematics, IISc Bangalore; and Profs. M. Thamban Nair, Amiya K. Pani, Danumjaya P., and Prof. Anil Kumar of the Department of Mathematics, BITS Pilani Goa Campus, were the resource persons for the workshop. More than 55 M.Sc. students, research scholars, and faculty from different institutes, colleges and universities

from Goa participated in the workshop. Prof. Anil Kumar organized the workshop under the SERB project of which he is the principal investigator.

International Conference on "Information Security, Privacy and Digital Forensics"

The Department of Computer Science and Information Systems, BITS Pilani Goa Campus, in association with National Forensics Science University and Sardar Vallabhbhai National Institute of Technology, organized an international conference on "Information Security, Privacy and Digital Forensics" on 2nd – 3rd Dec. 2022.

"International Conference on Aggregation-Induced Emission (AIE) fields from Fundamental to Applications" (ICAIEFA 2022)

The Department of Chemistry hosted the "International Conference on Aggregation-Induced Emission from Fundamental to Applications (ICAIEFA 2022)" from 16 th – 18 th Dec. 2022. The Conference featured eminent speakers from the USA, Japan, Canada, Hong Kong, China, Singapore, Australia, Italy, and South Korea, as well as distinguished Indian speakers from important national institutions such as BARC, IIT Bombay, IIT Indore, Goa University, IISER Kolkata, IISER Bhopal, CDRI Lucknow, NISER Bhubaneswar, University of Calcutta, University of Delhi, Guru Nanak Dev University, and BITS Pilani. The event was the first conference in India on Aggregation-Induced Emission (AIE) fields. AIE refers to the property of certain organic molecules to show intense luminescence when aggregated. Prof. Gopal Mugeraya, Director of NIT Goa; Dr. Bhanu Manjunath, Director, Syngenta Goa;

Prof. Suman Kundu, Director of BITS Pilani Goa Campus, graced the inaugural ceremony. The speeches at the inauguration emphasized the importance of the AIE field and stressed the need for translational research.

Prof. Mugeraya invoked Manohar Parrikar's dream of making Goa a hub of education and cutting-edge research. Prof. Kundu underscored the need for integrating academia and industry for AIE-based technologies in India. In 2020, the International Union of Pure and Applied Chemistry (IUPAC) declared AIE as the foremost of ten emerging technologies in chemistry. It has shown remarkable progress from the fundamentals to translational research in bioimaging, sensing, therapeutics and theranostics, renewable energy, pharmaceuticals, agriculture, etc. The American Chemical Society (ACS), the Royal Society of Chemistry (RSC), and the organizers presented awards for poster and oral presentations to budding researchers. The Conference concluded with a resolution to hold future editions.

Distinguished Lectures

Date	Title of the talk	Speaker's Name	Speaker's Designation/Affiliation	Organizing
8th Aug 2022	Disruptive Innovation and the Mind to Market Journey	Dr. Vinod Veedu	Director of Strategic Initiatives, Oceanit Houston, Texas, USA	Chemical
7th Sept 2022	Business Transformation Using Data Science & Cloud Scale Analytics	Mr. Harsha Konduri	Managing Director - Cloud & AI Business - Microsoft	Economics and Finance
7th Sept 2022	How organizations are powering their Business Transformation leveraging Data Science & Cloud Scale Analytics.	Mr. Harsha Konduri	Managing Director - Cloud & AI Business - Microsoft	Economics and Finance
8th Sept 2022	Development of Electric Vehicle, Software, Architecture and Control	Prof. Siddhartha Mukhopadhyay	Professor, Department of Electrical Engineering, IIT Kharagpur.	EEE
17th Sept 2022	Future Aspects in Wireless Communication	Vinay Iyer, Ashwin Raman, Vishwesh Rege, Smarjeet Sharma, Hardik Jain	BITS Alumni	EEE-ANT Committee
23rd Sept 2022	Electrifying sanitation - how electricity driven systems can create safe water for all	Prof. Korneel Rabaey	Center for Microbial Ecology and Technology Ghent University, Belgium	Biological Sciences
23rd Sept 2022	Should photon be really massless?	Prof. T. R. Govindarajan	Professor, Institute of Mathematical Sciences, Chennai	Physics
24th Sept 2022	Revisiting particle in a box problem in quantum mechanics	Prof. T. R. Govindarajan	Professor, Institute of Mathematical Sciences, Chennai	Physics
29th Sept 2022	Teaching & Learning Workshop: Building international collaborations for research and education	Prof. Padmanabhan Seshaiyer	Prof. Mathematical Sciences, Director – COMPLETE Centre, George Mason University, USA	TLC
4th Oct 2022	Magnetically Disordered Systems & Role of Crystal Chemistry	Prof. Chandan Upadhyay	Associate Professor, School of Materials Science and Technology, IIT (BHU), Varanasi	Physics
10th Oct 2022	Hydrogen as a Fuel for Sustainable Development: Challenge and Opportunities	Prof. K. K. Pant	Director at IIT Roorkee	Chemical

Date	Title of the talk	Speaker's Name	Speaker's Designation/Affiliation	Organizing
17th Oct 2022	How to make a career in the field of VLSI?	Chinmay Duvedi, Namita Paul, Basil Mohammad, Rahul Behl, Saran Changati	BITS Alumni	EEE-ANT Committee
4th Nov 2022	In-house Program on 'Motivated T.E.A.M.S-Together Everyone Achieves More Success'	Mr. Amey Hegde	Corporate Behavioural Trainer, Management Consultant	HR Office
9th Nov 2022	Drone Data Analytics	AspecScire Startup Company		EEE
15th Nov 2022	Exploring Epsilon Near Zero properties of Conducting Oxides	Prof. Joy Mitra	School of Physics, Indian Institute of Science Education and Research (IISER), Thiruvananthapuram, Kerala	Physics
15th Nov 2022	How to pursue a career in the field of Robotics?	Adwait Gandhe, Mayank Joneja, Arihant Lunawat, Mihir Dharmadhikari, Dhananjay Sathe, Rohit Sant	BITS Alumni	EEE-ANT Committee
16th Nov 2022	Enzymes from Extremophiles: Expanding the limits of Biocatalysis and a link between Earth and Astrobiology	Dr. Ram Karan	Senior research scientist, King Abdullah University of Science and Technology, Saudi Arabia	Chemistry
24th Nov 2022	Diversity and the Artist: Ravi Verma and his many Indias	Prof. G. Arunima	Director, Kerala Historical Council of Research & Professor, Centre for Women Studies, JNU	Humanities and Social Sciences
25th Nov 2022	Seminar on Human Capital and Self-Employment in India: An Empirical Analysis for Different Cohorts	Prof. Saibal Kar	Reserve Bank of India Chair Professor, Centre for Studies in Sol Sciences, Calcutta and IZA, Bonn.	Economics and Finance
26th Nov 2022	Economic Shocks and Return Migration of Labor	Prof. Saibal Kar	Reserve Bank of India Chair Professor, Centre for Studies in Sol Sciences, Calcutta and IZA, Bonn.	Economics and Finance
26th Nov 2022	Music Synthesis, Image Detection, and Classification Using MATLAB	Mr. Nikhil Sonavane	Customer Success Engineer, Mathworks experts	EEE

Date	Title of the talk	Speaker's Name	Speaker's Designation/Affiliation	Organizing
6th Dec 2022	Translational Medicine, The Crystallin Story	Prof. Debasish Sinha	Professor of Ophthalmology, Cell Biology and Developmental Biology, University of Pittsburgh School of Medicine Adjunct faculty, Ophthalmology, The Johns Hopkins University	Biological Sciences
15th Dec 2022	Future Perspectives on the Chemical Elements and Electrochemistry	Prof. Christopher Brett	Professor, University of Coimbra, Portugal	Chemistry
16th Dec 2022	Estimating Transaction Prices for Shipping Freight Agreements using bargaining theory	Dr. Satya Sahoo	Professor, World Maritime University, Malmo, Sweden	Humanities and Social
16th – 17th Dec 2022	2-Day Comprehensive In-house Workshop on 'MS-Office'	Mr. Mukesh Jain	Chief Technology Officer & Global Head of Innovation at Capgemini	HR Office

'Fulbright-Nehru Specialist', Prof. Manas Mandal visits BITS Pilani, K K Birla Goa Campus

Prof. Manas Mandal of the Roseman University of Health Sciences, Nevada, the USA recently visited the Department of Biological Sciences from 7th Sept. to 5th Oct. 2022. Prof. Mandal visited as Fulbright-Nehru Specialist and took part in academic activities of the department. He taught Molecular Immunology to the post-graduate students of Biotechnology (ME, Biotechnology). The students found his tips for their future path very helpful for planning the right path. Prof. Mandal was also participated as an esteemed speaker in the symposium titled COVID-19 and the Way Forward hosted by the department on 16th - 17th Sept. 2022.

Prof. Mandal completed his undergraduate education at the City College, Kolkata and his masters in Physiology from the University of Calcutta in the year 1986. He pursued the degree of PhD from the Jadavpur University and then moved to the USA for Post- doctoral research in immunology. Currently, he is Professor at the Roseman University of Health Sciences in Nevada, USA.

He is very much involved in COVID-19 related data collection and research on the pandemic in the USA. He is also very active in spreading science education among school children in the USA. He is a regular speaker in local TV and radio channels as COVID-19 expert.

Padma Vibhushan awardee, Prof. M. M. Sharma, and former Director UDCT (now ICT, Mumbai) visited Goa campus on 21st Nov 2022. Prof. Sharma is also a fellow of Royal Society UK and has the rare distinction of being appointed full Professor at the age of 27.

Ambassador of Israel, H.E. Mr. Naor Gilon visits BITS Pilani Goa Campus

Ambassador of Israel, H.E. Mr. Naor Gilon visited Goa Campus on 25th Nov. 2022 to interact with BITS students on India-Israel relations and to understand how to find the way forward. The Ambassador was welcomed by Director, Prof. Suman Kundu, along with the organizers of the visit, Prof. Rajesh Mehrotra, Associate Dean, International Programmes and Collaboration Division (IPCD) and Dr. Anirban Roy, Faculty at the Department of Chemical Engineering. During his interaction with faculty and students of Goa campus, the Ambassador introduced Israeli culture, history, international relations and strategy. He also discussed how Israel has developed as a hub of successful startups and the bilateral relations evolving between India and Israel over the last few decades. He discussed in detail the cooperation between India and Israel in areas of Water, Agriculture, Innovation, Defence, Energy and Space. The Ambassador finally encouraged BITS and Indian students, in general, to consider Israel as a higher education destination with some of the best Universities in the world offering advanced scientific and research-based curriculum.

BITS Pilani has recently signed the MoU with Ben Gurion University of Negev which, in addition to existing MoU of Tel Aviv University, strengthens the relationship with Israeli Universities.

Inventor of Fruitflow® and Nominator of Physiology or Medicine Nobel prize Prof. Asim K Dutta Roy visited BITS Pilani Goa Campus

Prof. Asim K Dutta Roy, the inventor of Fruitflow® and Nominator of Physiology or Medicine Nobel prize from 2012 till date, a world-renowned medical scientist from the University of Oslo, Norway, visited Goa Campus (from 12th to 15th Dec 2022). During his stay in the campus, he interacted with the campus Director Prof. Suman Kundu, Prof. Souri Banerjee, Dean of Faculty Affairs Division, BITS Pilani (in online), faculty members, PhD and undergraduate students of Department of Biological Sciences as well as other departments and explored the possibility of future collaboration.

Dr. Dutta Roy delivered a public lecture titled "Development of functional ingredients from tomato (Fruitflow®) that improve blood flow and blood pressure" at BITS. In very lucid terms, Prof. Dutta Roy described how Fruitflow can solve a wide range of problems related to blood flow and blood pressure. He stated how regular exercise, a simple food diet and sound sleep can protect us from a lot of unwanted diseases and help us to enjoy a healthy life. The Lecture was attended by faculty members, students from BITS as well as other colleges from Goa.

The lecture was followed by interaction with Prof. Dutta Roy. The Director Prof. Suman Kundu welcomed Prof. Asim K DuttaRoy and felicitated him with a token of appreciation. Dr. Prasanta Kumar Das, Associate Dean, Faculty Affairs Division introduced Prof. DuttaRoy.

Prof. Chandrajit Bajaj, Distinguished Chair Professor of Visualisation & Computing at the Oden Institute &the Dept of CS, UT Austin visited Goa Campus on 22nd Aug 2022.

Dr. Harsh Verma, 1975-80 Batch BITS Pilani Alumnus, currently working as World Bank Consultant, Transport Team, Intel IoT Advisory Board Member, and Chair- Future Worlds Symposium, Chief Technology Officer & Co- Founder Glocol Networks from California, US visited Goa Campus on 22nd Dec 2022.

Prof. Ankit Srivastava, Director, Centre for Studies & Research in Forensic Science and Coordinator, School of Forensic Sciences, National University of Juridical Sciences visited Goa Campus on 28th Dec 2022.

Alumni Affairs

BITSians' Day '22

BITSians' Day was observed on 5th August 2022. The Alumni Relations Cell organised 3 events for the students and alumni of the Indian campuses from 5th to 7th August 2022. The events are listed as follows:

Fit Wars

In the spirit of promoting physical health and fitness, we organised Fit Wars in collaboration with Insane AI. Insane AI is a mobile application available on Google Play and App Store which helps individuals stick to workout schedules and awards points for completing workouts. The event was modelled as an inter-hostel competition in which the hostel attaining the highest trophies (sum of the trophies attained by individual hostel residents on completing workouts) wins a foosball table as the grand prize. The top 3 individuals with the highest scores were awarded cash prizes of Rs. 3000, Rs. 2000 and Rs. 1000. The event was very well received by the student community with the participation of 378 students and countless reactions and shares on social media.

Merch To Your Own Drum

To increase excitement amongst the students, Merch To Your Own Drum gives students the opportunity to provide design suggestions for official campus merchandise. We received 7 responses in total on the google form circulated. The winning response features 3 designs, the best out of which is:
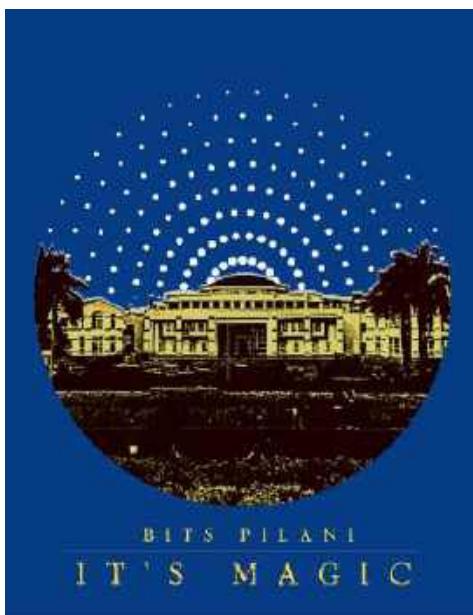
Caption-It: Out of Context:

An event to exercise the muscles of the mind, Caption-It requires participants to come up with creative captions for a set of 3 pictures provided. 16 responses were received on the google-form. The pictures used were:

Campus Meet

A brief meet-up took place at the Goa campus which was attended by 30+ BITSians including students, faculty and alumni (from Pilani and Hyderabad as well). After brief interactions with the director, a small session took place which involved singing and reminiscing about the good old days. A formal photograph was taken in front of the B-Dome followed by lunch.

An enjoyable interaction between the past, present and future of the BITS-Pilani community was successfully achieved.

The BITSian Dream | An interaction with Harsha Konduri

Cloud Computing is undoubtedly one of the most promising fields for anyone looking to make a living in the technology sector. Cloud Computing has asserted its importance in everyday dealings of both small and large businesses and the adoption of this new technology worldwide has resulted in a tremendous increase in cloud-related jobs. It has opened up a whole new universe of opportunities which when coupled with an MBA, sets one up for a successful career akin to that of BITS-Pilani Goa alumnus Harsha Konduri! The Managing Director of Cloud and AI Business at Microsoft, he runs a $2B cloud-scale analytics business in North America. From the first graduating batch of the Goa campus, he steps it up with an MBA from Duke University's Fuqua School of Business.

The hour-long session was held on the 7th Sept at the Mini-Auditorium and was hosted by ARC member, Dhanush Chinni. We witnessed a massive audience present with us to see Mr. Konduri talk about the future of cloud computing and the different career opportunities that will emerge as the industry evolves. He shared candid life lessons from his personal journey through the halls of BITS- Pilani Goa; from being an average programmer to co-founding an unsuccessful startup to studying at a top MBA school in the United States and now, running Microsoft's Cloud Computing & Analytics Business in North America.

Convocation 2022

In the aftermath of a pandemic that shook the world, the convocation was a redemption of the years we lost on campus. Seeing a batch going through their rite of passage validated our efforts at excellence despite difficulties on the way. The Convocation was held on the 11th Sept to honour and celebrate the efforts of the graduating batch and mark this memory as a milestone in their lives. The Alumni Relations Division played a pivotal role in organizing the event. Apart from the swift on- time schedule, we also managed to make sales of souvenirs, raise funds for clubs and departments, and pledges. After the main ceremony, a special lunch was organised at the 3 messes working at full capacity to accommodate parents and students of an entire batch.

BITS2 MS/PhD

An MS or a PhD is where most of us engineers see our kind settling into. If you are looking for some guidance, then look no further! We bring to you a line- up of alumni who've modelled their own destiny and are now here to share with us their experience and journey to the best MS and PhD programs out there through our talk, BITS2 MS/PhD!

The 90 minute session took place on the 8th Oct at the Tele-presence classroom and was jointly hosted by ARC members, Moon Bansal and Dhruv Chandak. The speakers for the talk were:
1) Utkarsh Sarawgi | SM, Interdisciplinary Research with a focus in AI and HCI from Massachusetts Institute of Technology
2) Taaresh Taneja | PhD in Mechanical Engineering with a minor in Aerospace Engineering and Mechanics from the University of Minnesota
3) Saksham Consul | MS in Electrical Engineering with a focus in Robotics from Stanford University
The talk was attended by a large on-campus attendance.

GRE Champs

GRE, the Graduate Record Examination, is an admission requirement for several international graduate schools. For many students, getting into a prestigious graduate school in the USA or Canada is the next step after receiving their undergraduate degree. Apart from their regular academic curriculum, BITSians have prepared for this prestigious exam and received remarkable scores! GRE Champs aims to acquaint interested students with the most effective methods of preparation, along with the best study resources. The speakers will give insights into their preparation journey, the methodology they adopted, their experience giving the exam, and answer questions related to the same.

The 90 minute session took place on the 18th Oct at DLT-7 and was jointly hosted by ARC members, Krupali Jadhav and Aditya Wakchoure. The speakers were our very own pre-final year students:
Nikunj Bhartia | 334/340
Raghav Mangalapalli | 332/340
Bhargav Kulkarni | 330/340
The event was attended by an excited audience in the DLT, with nearly 200 students present.

BITS2Finance

Finance is one of the most lucrative sectors of the Indian Industry. With a plethora of scope, it continues to be a widely considered career path in college. BITS2Finance aims to provide students with first-hand experience of our successful alumni in the field of finance. Therefore, as a part of the series of talks on non-core career options, we had invited our very own accomplished alumni to throw light on their experiences, future prospects, and their journey of joining prestigious finance firms. The BITS2Finance talk was held on the 12th Nov and was jointly hosted by ARC members Aarohi Verma and Shreerang Gupte.

The speakers were:
Ms. Anisha Verma | Bank of America
Mr. Aditya Shukla | JP Morgan Chase
Mr. Keval Nandu | Avendus
The 90 minute talk was very insightful and was attended by a large audience. The speakers' experiences served as a motivation to the students aiming to get into the finance sector.

Third edition of Alumni Research Talks (ART) held at BITS Pilani, K K Birla Goa Campus

Alumni Relations Division of BITS Pilani, K K Birla Goa Campus organised the third edition of Alumni Research Talks (ART) on 27th Nov 2022. The event featured talk- cum-interactive sessions with four eminent alumni of BITS Pilani, who shared their success stories and delved into their research interests which could affect the future. Director of Goa campus, Prof. Suman Kundu welcomed the eminent speakers and appreciated their presence.

He expressed his happiness that students are taking keen interest in attending such talks and interacting with the alumni.

The eminent alumni of BITS Pilani, who delivered research talks include: Prof. Y N Mohapatra, Professor of Physics and Materials Science, IIT Kanpur; Dr. Shruthi Sridhar Vembar, Assistant Professor, Institute of Bioinformatics and Applied Biotechnology, Bengaluru; Prof. Subrat Kar, Professor & Head, SeNSE, IIT Delhi; and Prof. Patrick Das Gupta, Professor of Physics and Astrophysics, University of Delhi. The talks were aimed at giving our students a taste of what the advanced sciences are about and to facilitate scientific collaboration between the university's present and its past. The organiser of these talks, Prof. Veeky Baths, Associate Dean, Alumni Relations Division, proposed the vote of thanks. He stated that such activities of interacting with alumni have a long-lasting impact on students' lives.

Through his invigorating talk, Prof. Mohapatra made the audience realize how electronics has been changing and will continue to change in coming years. He discussed the products of the future and left the audience with ample knowledge about his field to pique their interest and motivate them to pursue research in it.

Dr. Vembar took the audience through her research of elucidating novel modes of epigenetic and post-transcriptional gene regulation in malarial parasites. Malaria, caused by intracellular protozoan parasites of the genus Plasmodium, remains a major threat to global health, with half of the world's population at risk. She enriched the audience with her published work and projects of the lab which works on the discovery of new drugs and vaccines given the lack of an effective anti-malarial vaccine, and the emergence of parasite drug resistance to first-line therapies. Prof. Kar gave a refreshing talk on academic life as a student in any field. He started his talk by a small thought that the only thing worthy of learning is the ability to learn and continued to build upon the curious nature of students. He further elaborated on student life by drawing numerous analogies from practical life and technical fields. He ended his talk with a moving poem titled 'If', by Rudyard Kipling, based on self-confidence, pride, and persistence. Prof. Das Gupta spoke on understanding the cosmos. He managed to take the audience with him through his journey in his field and gave inspiring insights into his world of the stars. Taking the packed room with him, he raised the existential question of whether we are the only planet with life in the Milky Way. Speaking about how gravitation is the main source of energy, he wrapped up his lecture with the mysteries of the universe, leaving the audience with a hunger to learn more.

Director's Tea Party

The Director's Tea Party, organized by the Director and the Alumni Relations Division, is a way of giving the outgoing batch an official send-off to the world beyond BITS. The Director addressed the students of the graduating batch, sharing his respect for the BITSian network and a few stories about their batch and life on campus. The Director's Tea Party was held on the 3rd Dec 2022 at the Visitor's Guest House. The outgoing batch got together to reminisce on the times spent together and memories made throughout their college life. They talked about their college experiences and learnings, all the way sharing how BITS-Pilani changed them.

A dinner party was organised after the speeches and all students sat down together to have their final dinner together as students. Pre-orders for a new souvenir, BITS-Pilani Bottles, were taken, souvenirs were sold, and funds were raised through our very own PSenti Initiative for the various clubs and departments on campus.

BITS Pilani Goa Campus alumnus awarded prestigious Skoll Scholarship (2022-23)

Mr. Avinash Kothuri, a 2010 batch alumnus of BITS Pilani, K K Birla Goa Campus has been awarded the prestigious Skoll Scholarship (2022-23) - a fully-funded scholarship for the Oxford MBA at the Saïd Business School, University of Oxford, provided by the Skoll Centre for Social Entrepreneurship. Avinash is one of the four students who are awarded this fellowship this year. Avinash Kothuri was Director of inclusive education at Thinkerbell Labs - founded by four BITS Pilani Goa Campus students in 2016 - Sanskriti Dawle, Aman Srivastava, Dilip Ramesh and Saif Shaikh, which builds ed-tech solutions to improve learning outcomes for the visually impaired. Thinkerbell Lab's flagship product, Annie, is the world's first Braille literacy device.

Avi was a core part of Annie's journey from a prototype to a fully-fledged Braille teaching device, being used by children across continents. Prior to this, Avi worked with SocialCops to help governments and nonprofit organisations make better decisions using data. Avi is a mechanical engineering graduate from BITS Pilani Goa. In 2019, he was one of 25 people selected
worldwide for the Dalai Lama Fellowship Program.

Earlier this year they participated in Shark Tank India, an Indian business reality television show and were able to attract funding of Rs. 1.05 Cr by three Sharks - Namita Thapar, Peyush Bansal and Anupam Mittal.

Invited talks / workshops by faculty at other Indian/ Foreign institutes

Prof. Anil Kumar, Department of Mathematics- delivered an invited talk entitled 'Virtual Element Methods for Optimal Control Problems Involving Elliptic Partial Differential Equations' at the International Conference on Computational Partial Differential Equations and Applications (ICCPDEA- 2022) held at BML Munjal University, Gurgaon, held from 6th - 8th Sept. 2022.

Prof. Anil Kumar also delivered a symposium talk entitled 'Virtual Element Methods for Optimal Control Problems Governed by Diffusion Problems' at the 37 th Annual Conference of Ramanujan Mathematical Society at the Department of Mathematics, Sri Sivasubramaniya Nadar College of Engineering, Chennai, held from 6th - 8th Dec 2022.

Prof. Anjan Chattopadhyay, Department of Chemistry delivered two invited talks entitled "Group Theory in Spectroscopy" and "Photophysical & Photochemical Processes" as the resource person for the Refresher course in Chemical Science organized by UGC-Human Resource Development Centre, Goa University held during 26th July and 8th August 2022.

Prof. Arnab Banerjee, Department of Biological Sciences delivered invited lecture entitled 'Metabolic disorder associated gynecological cancers: role of Sirtuin1 as a crucial player' at the International Conference on the "Reproductive Biology, Comparative Endocrinology & Development" and the 39 th annual meeting of SRBCE held at Centre for Cellular and Molecular Biology (CCMB), Hyderabad held from 14th - 16th Sept 2022.

Prof. Arnab Banerjee delivered invited lecture entitled 'Some new insights to the grand old master hormone: The Mammalian Gonadotropin releasing hormone (GnRH I) in the "Interdisciplinary approaches addressing augmentation of livestock reproduction" at National Institute of Animal Biotechnology (NIAB) held on 13th Sept 2022.

Dr. Ganesh M. Bapat, Department of Mechanical Engineering delivered an invited talk on "Robotics and Future of Assistive Technology" at Indian Association of Assistive Technologists 3rd National Conference, at Mahatma Gandhi Medical (MGM) College, Navi Mumbai held on 22nd - 23rd Dec 2022.

Dr. Hemant Rathore, Dept. of Computer Science and Information Systems delivered following invited talks/ tutorials:
- "Android Malware Detection" at International Conference on Big Data Analytics (BDA), IIIT Hyderabad, Physical, Dec 2022.
- "Malware Analysis and Detection", IEEE Latin-American Conference on Communications (LATINCOM), Rio de Janeiro, Brazil, Virtual,Nov 2022.
- "Adversarially Robust Android Malware Detection Models" at International Conference on Neural Information Processing (ICONIP), IIT Indore, Virtual, Nov 2022.
- "Malware Analysis and Detection", International Conference on AI-ML Systems (AIML-Systems), Bangalore, Virtual, Oct 2022.
- "Malware Analysis and Detection", IEEE Future Networks World Forum, Montreal, Canada, Virtual, Oct 2022.

Dr. Indrani Chakraborty, Department of Physics delivered an invited talk on 'Imaging biomaterials using confocal microscopy and associated optics', at STUTI-2022 workshop sponsored by DST, held at BITS Pilani, Goa Campus.

Dr. Indrakshi Raychowdhury, Department of Physics delivered an Invited talk titled 'Loop-String- Hadron dynamics in a SU(3) lattice gauge theory' at NUMSTRINGS workshop ICTS Bangalore held on 30th Aug 2022.

Prof. Jajati Keshari Sahoo, Department of Mathematics delivered a Keynote talk entitled "Matrix splitting based iterative schemes for large linear systems" at the 11th Eleventh International Workshop on Mathematical Models and their Applications (IWMMA 2022) held at the Siberian Institute of Applied System Analysis, Krasnoyarsk, the Russian Federation, held during 22nd to 24th Nov 2022.

Dr. Nilak Datta, Department of Humanities and Social Sciences, was Guest of Honour at Rabindranath Tagore University, Bhopal, MP, and delivered an invited lecture titled "Innovations in Language, Literature, and Linguistics in Relation to NEP" on 2nd November 2022. The event was jointly organized by Rabindranath Tagore University in association with GAP (Grand Academic Portal) and Govt. MLB PG Autonomous Girls College, Bhopal.

Prof. Pravin Singru, Department of Mechanical Engineering delivered an invited expert lecture titled 'An Acoustic Study and characterization of Sarasvati Veena' at Bajaj Institute of Technology, Wardha held on 12th Dec 2022.

Prof. Pravin Singru conducted a FDP on Effective Curriculum Design based on Choice based Credit System (CBCS) at School of Engineering and Technology, Christ University, Bengaluru held during 5th to 9th Dec 2022.

Prof. Rajesh Mehrotra, Department of Biological Sciences delivered following invited lectures/ talks at Punjab Agriculture University, Ludhiana held on 19th – 20th Dec 2022:
• Basic understanding of promoters with respect to different genes expression and regulation in plant genome; Promoter isolation from plant genome and their artificial synthesis for any target trait.
• At AVT6 family of amino acid transporters of A. thaliana as target for crop improvement.
• Designing, synthesizing and validation of salinity stress responsive promoter in plants.
• Differential regulation of promoter activation: governed by ACGT cis -regulatory elements

Prof. Rajesh Mehrotra delivered invited talk entitled 'Promoter activation by ACGT cis regulatory elements is differentially regulated by spacing between the copies of the motifs at Calicut University on 27th Oct 2022.

Prof. Rajesh Mehrotra delivered invited talk entitled 'AtAVT6 family of amino acid transporters of Arabidopsis thaliana as target for Crop Improvement' at the "2nd Edition of Global Conference on Agriculture and Horticulture" (Agri 2022) at France during 1st – 3rd Sept 2022

Prof. Ranjan Dey, Department of Chemistry delivered an invited talk at the International Conference on Advanced Materials Science & Engineering and High-Tech Devices Applications; Exhibition (ICMATSE 2022), at Ankara, Turkey held from 27th – 29th Oct 2022 in virtual mode.

Prof. Ranjan Dey also delivered an invited talk entitled "Simple and Effective Approaches for Viscosity Prediction of Binary and Higher Order Liquid Mixtures", at the 41st Indian Council of Chemists (ICC) Conference, at Agra, from 27th - 29th Dec 2022. Prof. Dey also chaired 1st Technical Session (Physical Chemistry) in this Conference.

Prof. Reena Cheruvalath, Department of Humanities and Social Sciences was invited as a Resource Person for six-day Faculty Development Programme on Integrating the Contemporary Discourse in English Language and Literature Studies, at SRM, Chennai, held during 17th - 23rd Dec 2022.

Prof. Reena Cheruvalath, was also invited as a lead speaker (Topic: Authors and Ethical Sensitivity: A perceptive analysis of selected Literature) in the International Conference on 'Ethics and Human values through Literature' organized by Yeshwant Mahavidyalaya, Nanded, Maharashtra, held on 16th - 17th Dec 2022.

BITS BioCyTiH FOUNDATION-ACTIVITIES

BITS BioCyTiH Foundation
(A Section 8 Company)

An initiative by BITS Pilani funded by the National Mission on Interdisciplinary Cyber-Physical Systems (NMICPS), Department of Science and Technology, Government of India

Workshop on "Pathways to Translation"

The "Pathways to Translation" workshop was organized on 30 th Nov. 2022 at BITS Pilani Goa Campus. It aimed at increasing the awareness of Bio-CPS, engaging audiences from various backgrounds, an understanding the nuances of the entrepreneurial journey, including the challenges and opportunities regarding translating ideas from academia to industry. More than 130 participants, including researchers, scientists, professors, people from start-ups, and students from across the country, attended this workshop. Prof. Souvik Bhattacharyya, Vice Chancellor, BITS Pilani; Prof. Suman Kundu, Director, BITS Pilani Goa Campus; Prof. Sudhir Kumar Barai, Director, BITS Pilani, Pilani Campus; Prof. G Sundar, Director, BITS Pilani Hyderabad Campus, and Dr. Satya Dash, CEO, BITS BioCyTiH Foundation attended the inaugural session. Two stalwart speakers from the health-tech industry, Prof Vijay Chandru, Co-Founder & Director of Strand Life Sciences, and Dr. Chandrasekhar Nair, Co-Founder & Director of MolBio and Bigtec, gave talks on their translational journey. Through video-conferencing, the speakers also interacted with the Ph.D. students and Project Invest gators across the three Indian campuses of BITS Pilani, who are associated with the strategic research projects of the Foundation.

NM-ICPS, DST VISITS BITS BIOCYTIH FOUNDATION

Shri. Anurag Mishra, Scientist-C, FFT Division, Department of Science &Technology, Government of India, visited BITS BioCyTiH Foundation at BITS Pilani Goa Campus on 12 th Dec. 2022. The visit commenced with a roundtable discussion. The senior leadership team of BITS Pilani and BITS BioCyTiH Foundation: Prof. Souvik Bhattacharyya (Vice Chancellor, BITS Pilani & Chairman, BITS BioCyTiH Foundation) and Board of Directors: Prof. Suman Kundu (Director, BITS Pilani Goa campus), Prof. Sudhirkumar Barai (Director, BITS Pilani, Pilani campus) and Prof. G. Sundar (Director, BITS Pilani Hyderabad campus); Project Directors: Prof. Sunil Bhand, Prof. Sanket Goel, Prof. Samit Chattopadhyay, and Prof. Syamantak Majumder; and the CEO of the Foundation, Dr. Satya Dash, participated in the discussion. They reviewed the current status and prospects of programs, projects, and activities focused on technology development, entrepreneurship development, and skill development in the Technology Vertical of Bio-Cyber Physical Systems (Bio- CPS) supported by the BITS BioCyTiH Foundation. Shri. Anurag Mishra visited the infrastructure facilities of BITS BioCyTiH Foundation. He also attended the technology demonstration and poster presentation on the technologies developed through the Foundation's strategic research projects across the three campuses of BITS Pilani.

Visit of Consul General, U.S. Consulate General Mumbai

Mr. Mike Hankey, Consul General at the U.S. Consulate General Mumbai, visited BITS BioCyTiH Foundation at BITS Pilani Goa Campus on 20 December 2022. Dr. Satya Dash, CEO of BITS BioCyTiH Foundation, welcomed Mr. Hankey and informed him about the Foundation and its varied activities in Bio-Cyber Physical Systems. Prof. Suman Kundu, Director of BITS Pilani Goa Campus, apprised Mr. Hankey of the University's activities and unique features. Mr. Mike Hankey also received demonstrations of technologies and prototypes at the WASH Lab headed by Prof. Srikant Mutnuri, Cognition Lab headed by Prof. Veeky Baths, and the Biosensor Lab headed by Prof. Sunil Bhand.

Technology Translation Orientation Meeting

On 27 September 2022, Prof. Suman Kundu, Director of BITS Pilani Goa Campus, chaired an orientation meeting with 11 P.I.s from the campus associated with 14 strategic projects. The meeting focused on the possibility of translating Bio-CPS technologies under development through the projects supported by the Foundation.

Dr. Satya Dash and Prof. Kundu shared their insights on each project's potential industry collaborators regarding technology transfer or co-development.

PROGRAMS LAUNCHED

a. SMART BIO CPS Program

- STRATEGIC MARKET ADVANCEMENT OF READY-TO-GO TECHNOLOGY PRODUCTS (SMART) Bio-CPS is a flagship funding program launched by BITS BioCyTiH Foundation to identify and support technologies and products in Bio-CPS from Indian Start-ups and MSME.
- It offers funding support of up to Rs. 40 lakhs under SMART Bio-CPS and Rs. 10 lakhs under Mini SMART
- The first call, launched in September 2022, invited proposals for technology development in Bio-CPS in the areas of anti-microbial resistance, neonatal critical care, chronic wound care management, post-harvest management, hospital waste management, bedside molecular diagnostics, and early on-field detection of crop infestation.
- A national-level committee has finalized five start-ups for funding through a stringent evaluation process.

b. Bio-CPS Entrepreneurship-In-Residence (EIR) Program

- The Foundation launched Bio-CPS EIR in September 2022 to support early-stage innovators who face challenges across the Healthcare, Agriculture, Water, and Environment sectors.
- The program offers monthly fellowships of Rs. 50,000 for a period of six months and an opportunity to win cash prizes up to Rs. 5,00,000.
- It also provides business advice, mentoring, networking opportunities, industry connections, and guidance on venture creation's I.P., legal, and team-building aspects.
- The Entrepreneurship Committee chose three candidates for the first cohort of Bio-CPS EIR.

Dr. Sudhy S. Panicker, Department of Mechanical Engineering made an online presentation (International) on "Formability Enhancement Techniques for Lightweight Metallic Sheets" at an online Seminar organized by the Staff Development Committee of the Engineering Department of UTAS Ibri, Sultanate of Oman on 29th Dec 2022.

Dr. Veeky Baths, Department of Biological Sciences delivered an Invited Lecture entitled "Multimodal framework and fusion of EEG, graph theory and sentiment analysis for the prediction and interpretation of consumer decision" at the 2nd International Conference on Social Neuroscience in Ecologically Valid Conditions organized by the Institute of Cognitive Neuroscience at the Higher School of Economics, Russia on 19th – 20th Oct 2022.

ART EXHIBITION 2022

Department of Humanities and Social Sciences organized an Art Exhibition by Contemporary Art.

Significant projects

Sr. No.	Title of the Project	Principal Investigator/ Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
1	Ward identities in Celestial Conformal Field Theory through Explicit Examples	Dr. Rudranil Basu	SERB- MTR	6.60
2	Real time dynamics of quarks and fluons: A quantum simulation approach.	Dr. Indrakshi Raychowdhury Physics	SERB-SRG	20.71
3	Irreducibility of GLP and related Diophantine problems	Dr. Saranya G Nair	SERB-MATRICS	6.60
4	Development of a digital ecosystem for leather authentication and species identification	Dr. Amalin Prince A EEE	SERB CRG	30.77
5	Drone Mapping of Mangrove Swamps in Goa - Phase-2	Dr. Shibu Clement Mechanical Engineering	Office of the Dy. Conservator of Forests, Research & Utilization Division, Aquem, Margao Goa	4.00
6	Exploring Data Compression techniques	Dr. Vinayak Naik Dr. Vinayak Naik CS&IS Co-PI Dr. Arnab Kumar Paul CS&IS	DRUVA INC.	4.00
7	Indigenous development of value implants for Dentistry	CS&IS Dr. D M Kulkarni Dr. Iniyan Thiruselvam N Dr. Kiran D Mali Mechanical Engineering Dr. Savio Lourenco Bionic Imprints Pvt. Ltd., Goa	BGIIES (BITS Goa Innovation, Incubation and	8.00
8	Environmental impact assessment of 2,6, Difluoraniline and 4,4-Dimethoxy-2-butanone (DMB)	Dr. S D Manjare Chemical Engineering	Deccan fine Chemicals Pvt. ltd	8.85
9	Developing predictive models for drug likeness of small molecules	Dr. Arnab Kumar Paul	DBT-NNP	192.01 BITS share is Rs. 95.35 Lakhs

Sr. No.	Title of the Project	Principal Investigator/ Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
10	Source Separation Toilet user interface and wastewater treatment (BIOWETS)	Dr. Srikanth Mutnuri Biological Sciences	EOOS NEXT, Vienna Austria	USD 45137.00
11	Bio-inspired flow dynamics of tandem flapping foils	Dr. Vaibhav Joshi Mechanical Engineering	SERB-SRG	13. 86
12	Phase-2 Collaboration	Dr. N N Ghosh Chemistry	BITSAA	1.99
13	Development of prototype biosensor for detection of bacteria (E.coil/shigella and Salmonella spp.) in drinking water	Dr. Utpal Roy Biological Sciences Dr. Sunil Bhand Chemistry	BITS BioCyTiH foundation	22.62
14	A multi-model and cost effective framework for developing medical diagnostic and robotic surgery devices	Dr. Kunal Korgaonkar CS&IS Co-PI Dr. Vinayak Naik CS&IS	BITS BioCyTiH foundation	21.90
15	Development of underwater Acoustic Sensor network for monitoring of coral reef.	Dr. Sarang C Dhongdi EEE Co-PI Dr. K R Anupama EEE	BITS BioCyTiH foundation	34.86
16	Mobile/web and AR-VR based cognition tracking analysis and rehabilitation for healthy and cognitively impaired people	Dr. Veeky Baths Biological Sciences	BITS BioCyTiH foundation	24.46
17	A Scalable cloud and edge based framework to ease the deployment of IoT based applications	Dr. Vinayak Naik CS&IS Co-PI Dr. Arnab Kumar Paul CS&IS	BITS BioCyTiH foundation	41.16
18	Isolation of white blood cells in a microfluidic device with applications to point-of-care diagnostics	Dr. Siddhartha Tripathi Mechanical Engineering Co-PI Dr. Sunil Bhand Chemistry	BITS BioCyTiH foundation	24.86

Sr. No.	Title of the Project	Principal Investigator/ Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
19	A thin film transistor biosensor for detection of endocrine disruptive compounds	Dr. Abhijit Pethe EEE Co-PI Dr. Sunil Bhand Chemistry	BITS BioCyTiH foundation	41.97
20	Novel field biosensor for detection of urea in agricultural runoff water	Dr. Sunil Bhand Chemistry Co-PI Dr. Gautam Bacher EEE	BITS BioCyTiH foundation	39.60
21	Technology of detection and analysis of Aflatoxin M1 in milk and milk products	Dr. Sunil Bhand Chemistry Co-PI Dr. Gautam Bacher EEE	BITS BioCyTiH foundation	59.95
22	Biosensor platform for detection of Aflatoxin B1 in groundnut	Dr. Sunil Bhand Chemistry Co-PI Dr. Gautam Bacher EEE	BITS BioCyTiH foundation	39.95
23	A Novel transistor based biosensor for analysis of BPS in water	Dr. Gautam Bacher Co-PI Dr. Sunil Bhand Chemistry Dr. Abhijit Pethe EEE	BITS BioCyTiH foundation	40
24	Development of Solar powered cloud based IoT device for agriculture application	Dr. Nitin Sharma EEE Co-PI Dr. Sunil Bhand Chemistry	BITS BioCyTiH foundation	30
25	De Novo Designed peptides Scanvenge SARS CoV2 Spike protein	Dr. Samit Chattopadhyay Co-PI Dr. Subhrangsu Chatterjee Dept of Biopysics Centenary campus Bose Institute, Kolkata	BITS BioCyTiH foundation	65

Sr. No.	Title of the Project	Principal Investigator/Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
26	DBT- Builder- BITS Pilani, K K Birla Goa Campus Interdisciplinary Life Science programme for Advance Research and Education	Dr. Sunil Bhand (Project Coordinator) Other Coordinators From Biological Sciences Dept. Dr. Srikanth Mutnuri Dr. Meenal Kowshik Dr. Indrani Talukdar Dr. Utpal Roy Dr. Kundan Kumar Dr. Anasuya Ganguly Dr. Sumit Biswas Dr. Judith Braganza Dr. Arnab Banerjee Dr. Vijayashree Nayak Dr. Tusar Saha Dr. Angshuman Sarkar Dr. Malabika Biswas Dr. Pritam Bhattacharya Dr. Sukanta Mandal Dr. Raviprasad Aduri Dr. Veeky Baths Dr. Rajesh Mehrotra Dr. Sandhya Mehrotra From CSIS Dept. Dr. Vinayak Naik Dr. Swati Agarwal Dr. Basabdatta Bhattacharyya Dr. Snehanshu Saha From Chemical Engineering Dept. Dr. Sutapa Roy Ramanan Dr. S S Baral Dr. Vivek R Dr. Sharad Sontakke From Chemistry Dept. Dr. N N Ghosh Dr. Amrita Chatterjee Dr. Gautam Bacher (EEE) Dr. Sachin Waigaonkar (Mechanical Engineering)	DBT	843.31

Sr. No.	Title of the Project	Principal Investigator/ Co-investigator and Department	Funding Agency	Proposed/ Sanctioned amount (Rs. In Lakhs)
27	Quick detection of oral cancer using metabolite markers: small molecules interaction with anticancer activities for oral cancer	Dr. Samit Chattopadhyay Co-PI Dr. Partha Chakrabarty Scientist CSIR -IICB Kolkata Dr. Srivan Chandrasekhar Secretary DST &Former director CSIR-IICT Hyderabad Dr. Angshuman Sarkar, Professor, BITS Pilani Goa campus Dr. Sanket Goel, Professor, BITS -Pilani Hyderabad Campus Dr. Manas K Santra, Scientist, NCCS Pune	BITS BioCyTiH foundation	65

Faculty/Staff Achievements

Dr. Harikrishnan N. B., Visiting Faculty, Department of CSIS and APPCAIR co-authored (lead author) a paper titled: 'Causality Preserving Chaotic Transformation and Classification using Neurochaos Learning' which was accepted in the 36th Conference on Neural Information Processing Systems (NeurIPS 2022) [CORE A*, consistently ranked among the top THREE of all AI conferences.

Prof. Lakshmi Subramanian, Department of Humanities and Social Sciences, as a contributor and collaborator of the Delhi Art Gallery, launched a catalogue "March to Freedom" as part of the Azadi ka Amrut Mahotsav celebrations in the Indian Museum, Kolkata during 13th – 14th Aug 2022.

Dr. Naveen Gupta, Department of EEE was selected for the SERB International Research Experience (SIRE) grant supported by the SERB, Department of Science and Technology, Govt. of India.
This fellowship supports a two-month research visit to the Department of Computer Science and Engineering, University of Essex, UK. During his visit, he collaborated with Dr. Zilong Liu, Lecturer, University of Essex, on a project entitled "Implementation of IRS-based NOMA-aided Cooperative D2D Communication System".

Dr. Sudhy S. Panicker, Department of Mechanical Engineering, published a SCOPUS Indexed paper entitled 'Study of dual pulse gas metal arc welding process characteristics on IS 2062 steel' by M. Arunkumar, P. Aneesh Kumar, S. Sampreeth, and Sudhy S. Panicker, Journal- Materials Today: Proceedings, Elsevier, 20 August 2022
DOI: https://doi.org/10.1016/j.matpr.2022.08.092

Prof. Narendra Nath Ghosh, Department of Chemistry was awarded "BHARAT SHIKSHA GAURAV PURASKAR" and a "CERTIFICATE OF EDUCATION EXCELLENCE", by KTK Outstanding Achievers and Education Foundation, New Delhi.

Prof. Snehanshu Saha, Department of CSIS and APPCAIR received global recognition for leading efforts in advancing technology for humanity and for his notable services and contributions towards the advancement of Engineering professions from IEEE Global Technical Activities Committee.
He was invited by Knowledge Chamber of Commerce and Industry to speak on technology penetration. He was granted 02 European Patents; appointed on Board of Governors - HappyMonk AI labs, Bangalore; featured in media for work on Habitable Exoplanets (English, Bengali and Malayalam); appointed Fellow-IETE and Visiting Scientist, Indian Statistical Institute, Bangalore (Summer Term).
Prof. Saha was offered a honorary position as Advisor to The African Center of Excellence in Data Science, University of Rwanda.

Prof. Prasanta Kumar Das, Department of Physics, has been selected in the Visiting Associateship Programme at the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune.

Prof. Rajesh Mehrotra, Department of Biological Sciences was awarded V S Rao Foundation's C R Mitra Best Faculty Award 2021. Prof. Mehrotra was presented with a Citation and cash prize of Rs. 1,00,000/- as part of this award.

Prof. Samit Chattopadhyay, Senior Professor & Shri B K Birla & Shrimati Sarala Birla Chair Professor at the Department of Biological Sciences has been nominated as the Chair of the Board of Governors of the prestigious National Institute of Pharmaceutical Education and Research (NIPER) Hajipur, Bihar. The Board of Governor of NIPER is constituted with the ascent of the Hon'ble President of India, who is Visitor of the Institute, for a term of three years. NIPER is an autonomous institution of national importance, established under the aegis of Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Govt. of India under NIPER Act 1998 at Hajipur in Vaishali District of Bihar. It is a centre of excellence for higher education, research and development in pharmaceutical sciences, conceived to provide leadership in pharmaceutical sciences and other related areas. Other NIPER campuses are located at Ahmedabad, Guwahati, Kolkata, Hyderabad, Mohali and Raebareili

Prof. Ranjan Dey, Department of Chemistry, elected a Core Committee Member of Statistical Mechanics and Thermodynamics Group (SMTG) of Royal Society of Chemistry.

Dr. Sudhy S. Panicker, also published a Book Chapter entitled: "Springback in Tailor Welded Blanks Using a Heuristic Approach" by Sudhy S Panicker, Hariharan Krishnaswamy and Nirupam Chakraborti in book "Springback Assessment and Compensation of Tailor Welded Blanks" Published December 27, 2022 by CRC Press, Taylor and Francis group DOI: https://doi.org/10.1201/9781003164241-5

Dr. Solano Da Silva, Department of Humanities & Social Sciences co-authored a book 'The Great Goa Land Grab, Saligao, Goa' (2022) with Kenneth Bo Nielsen and Heather Plumridge Bedi, published by Goa 1556. ISBN 978-81-956329-2-3.
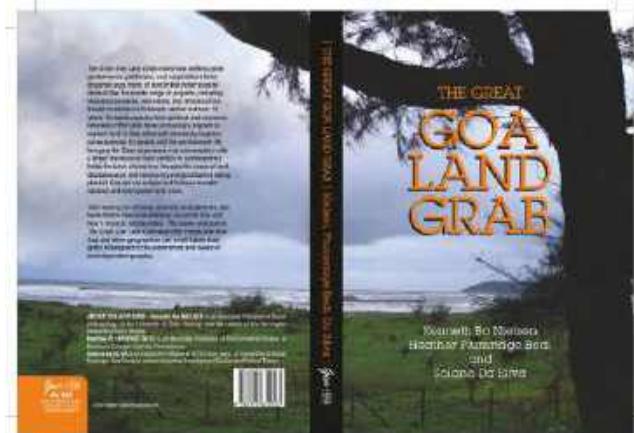
Prof. Suman Kundu, Director, received IIHM Teachers Day Award from International Institute of Hotel Management (IIHM) in recognition of his services in the field of teaching and research on the occasion of Teachers Day Celebration. Prof. Kundu was nominated for this award by Founder and Chief Mentor of IIHM, Dr Suborno Bose.

Mr. Atul Sankaw, Senior Manager, Practice School and a 2002 Batch Alumni of Shree Rayeshwar Institute of Engineering and Information Technology was honored with the Outstanding Professional Achievement Alumni Award by his alma mater Shree Rayeshwar Institute of Engineering and Information Technology, Shiroda Goa an Engineering college in Goa established in 2001.
This Alumni Award was in recognition of his Excellent Contributions and Achievements in the Professional World at the State Level. He received the award at the hands of the Hon'ble Chief Minister of Goa Dr. Pramod Sawant during the Alumni Meet of the college held at the college campus on 23rd Dec 2022. In the distinguished presence of Mr. Nitin Kunkolienkar, President Emeritus, MAIT India, and Mr. Subash Shirodkar, Minister WRD, Govt. of Goa and Chairman, Shivgram Education Society.

Student Activities

Nirmaan

1. Vertical Updates: Nirmaan Goa Chapter operates in three major domains - Knowledge, Health, and Employment, and we are elated to share that each of the domains has made exemplary progress. COVID-19 had forced us to shift our activities to an online mode and this year marked the complete transition back into an offline mode. The Health Operations organized a free Eye check-up camp for the people of Zari (Apr 2022). The Employment Operations successfully hosted a Diwali Sale for the products made by women from two Self- Help Groups from Zari and Birla (Oct 2022). Thanks to the support of all Students and Faculty, we were able to accomplish record sales this year. The Knowledge Operations successfully started teaching more than 100 students from all standards in an offline mode. The Knowledge Operations, namely our Shiksha and Disha Verticals, who guide students for the JNVST examination, achieved an exceptional accolade, as 4 of our students got shortlisted through the exam. Out of these four, we are excited to share that Sumit from the 9th standard was one of only three students from South Goa to have cleared the exam.

2. The Joy of Giving Week (Mar 2022): COVID-19 disrupted our flagship event, Joy Of Giving Week, but this year marked the restoration of the beloved event. With a motto of "Time to bring a change", Nirmaan was successful in spreading wholesome energy across our campus. We hope the following year marks an even bigger event!

3. Vocational Training Camps: We at Nirmaan are strong believers in Women Empowerment, and to facilitate the same, we are elated to share that the Nirmaan Goa Chapter successfully set up Vocational Training Camps. These Camps will empower more than 60 women by giving them free but reliable knowledge in the domains of IT, Fashion Designing, and Beauty Salons. We surely hope they will benefit from the same and will be able to become independent and help other women to achieve their dreams!

4. Installation of Sanitary Pad Dispensers (Dec 2022): Menstrual Health is still taboo in some parts of rural Goa, and as an attempt to change the dynamics of the region, the Nirmaan Goa Chapter installed a Sanitary Pad Dispenser at Multipurpose High School in Madgaon, Goa. The dispenser is equipped to hold and dispense up to 40 sanitary pads and we hope to have created a positive impact to help all the girl students at the school and reduce the Taboo surrounding it.

5. Velsao and Hollant Beach Clean-up (Sep & Nov 2022): We at Nirmaan understand the importance of Cleanliness. As a result, Nirmaan undertook two major Beach Clean-ups drives of beaches near our campus. On International Coastal Clean-up day, Nirmaan Goa Chapter took part in a nationwide coastal cleanup drive and helped clean Velsao Beach in association with the Coast guard of Goa. A Guinness World Record for more than 7500km of coastline, cleaned simultaneously with more than 75,000 volunteers all over India, was attempted, and in Goa alone, 5300+ volunteers cleaned 26000+ kilograms of waste on the Goan Coastline. Nirmaan Goa Chapter also hosted the Hollant Beach Cleanup in association with "There is No Earth B". More than 20 volunteers, which included BITS Goa students from first- year undergraduate degrees to PhD Scholars, helped clean the scenic beach and cleaned almost 162 kilograms of plastic from Hollant Beach.
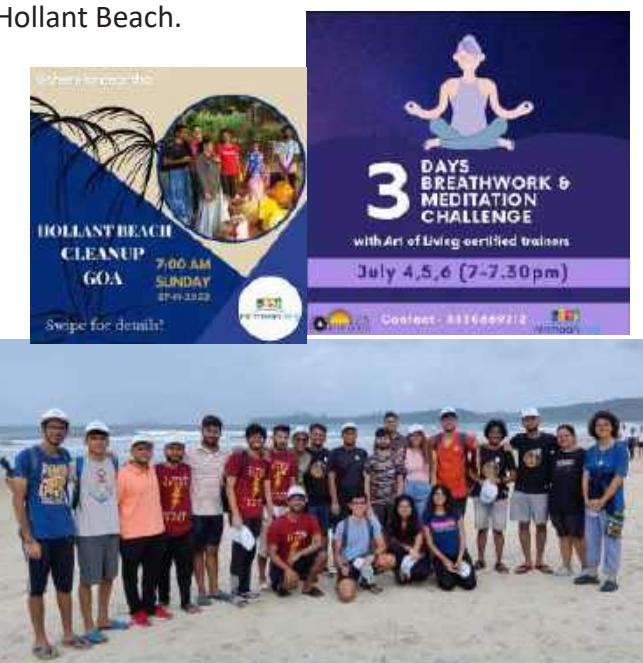
6. Mental Health Camps (Oct 2022): We are excited to share that this year, the Nirmaan Goa Chapter conducted three Sessions regarding the betterment of Mental Health. Two sessions were conducted in association with the Art of Living. One of these was an Online workshop for Breathing and Breathwork, and the other was for Breathwork and Meditation. Nirmaan also conducted a session on positive psychology with the founder of "Towards a Better You" as the main speaker and in association with Waves'22

7. Installation of Fences in SYSM School (Dec 2022): Nirmaan Goa Chapter successfully installed a fence around the SYSM School in Zari. The installation was of paramount importance for increased safety in and around the School premises.

8. Drone Show for the local kids (Sep 2022): In order to instill scientific curiosity among children, we invited kids from Zari to our campus and showed them how drones work. It was a teacher's day celebration event.

ECOCLUB

The Green Champions Committee of BITS Goa has been functioning since October 2022 for implementing action towards the maintenance of cleanliness and sustainability in the campus. The committee proposed Clean & Green initiatives for creating awareness regarding cleanliness and waste management among the community.

As part of those initiatives, the EPAC (Environmental Protection and Awareness Club) was revived and renamed as EcoClub in November, 2022 to implement these activities at the student level and encourage the students to participate in them.

Cleaning drive: (8th Nov 2022):

On November 8, 2022 a cleaning drive was organized by Green Champions & Hostel AH 1 with the support of the Nirmaan Organization. Their efforts encouraged many students to volunteer for the drive. The drive was conducted around hostel premises and on the road from the shopping complex to the playground.

Make your own Paper Bag - Workshop (30th Nov 2022):

The Ecoclub organized a paper bag making workshop as part of their pre-induction process. This was an initiative taken in order to reduce the plastic waste produced in the form of plastic bags which are handed along with the groceries and fruits bought from the vendors in campus. Students were taught to make paper bags using old magazines and posters promoting the concept of the 3Rs (Reduce, Reuse, Recycle). Old newspapers and posters collected from around the campus were used to make paper bags which were later distributed to the students for usage.

SEDS Celestia

SEDS Celestia organized its flagship event: Storming Aurora after a gap of 3 years, under the guidance of the Faculty In-Charge, Prof. Tarun Kumar Jha in association with the Department of Physics and Teaching Learning Centre from 25th to 27th Nov 2022.

Organising Committee consisted of Avani Sharan, President (2020B5A41219G); Tanmay Yadav, Vice-President (2020A1PS0836G); Vishesh Agrawal, Secretary, Treasurer and Publicity Head (2020A7PS0967G); Pranav Jain, Lectures and Podcast Head (2020B5A32124G); Shlok Kakkar, Observation Head (2020B5AA0833G); and Vikram Vaidyanathan Venkatraman, Projects Head (2020A3PS1431G).

The following activities were organized on each day:

Day 1

•Stellar Quiz - It tested knowledge of space, science and STEM in general, of the participants. Students took part in teams of 3, beginning with an elimination round and then the final quiz.

•Space engine event - Space engine is a simulation software that takes one on a tour through the universe. In this event we showed various celestial objects to the audience.

Day 2

•Lecture by Prof. Koushik Dutta - We invited Prof. Koushik Dutta, from Department of Physics, IISER Kolkata, to come to campus and give us a talk.

The title of the talk was "Insignificant, but Significant Enough: Surveying the History and the Content of the Universe".

• Integration BEE Round 1 - The idea was inspired by MIT's Integration Bee which has been taking place for over 100 years and has become a tradition over there. This was a written elimination round, and the candidates shortlisted from this were eligible for the final blackboard round.

• Observations Session - We set up our equatorial mount and Dobsonian telescope and viewed some planets, the moon, nebulae, star clusters and other interesting messier objects. There were fun discussions about sky lore and a simultaneous night sky tour was also conducted. Various professors as well as PhD students attended this.

Day 3
• Project Presentations - SEDS Celestia project teams namely, EINSat, Brain-Computer Interface Bot, CanSat and Rocketry presented their work so far. There was also a paper presentation by the EINSat project leads.
• Lecture by Prof. Avinash Deshpande - We invited Prof. Avinash Deshpande from Raman Research Institute to give us a talk via telepresence classroom. The title of the talk was: "Fascinating Life Stories of Pulsars".
• Integration BEE Round 2 - The shortlisted 8 candidates from Round 1 took part in the final 1v1 integration battle on blackboard. It was an intense knockout round and a treat to watch.
• Observations Session - The event culminated with a final observations session like in Day 2.

Engineer's Day Celebrated by organizing TechExpo 2022 for School Kids of Goa

As part of its celebration to mark the Engineer's Day, the Center for Technical Education (CTE) organized TechExpo 2022 on 17th Sept 2022. Over 200 students from class 9th to 12th from over ten schools in Goa participated in the event. Incidentally, the Vishwakarma Jayanti, a day to mark reverence for the divine engineer in our mythology, was also celebrated on that day.

The objective of TechExpo, organized under the guidance of Prof. Vinayak Naik, head of the Computer Science Department, was to introduce the discipline of Engineering to inquisitive minds. The CTE, led by president Anchal Malani and vice-president Dhruv Johari (both students of BITS Pilani, Goa Campus), conducted the event with help from various BITS Goa's technical clubs such as the Electronics and Robotics club, the Aerodynamics club, SAE-BITS Goa Chapter, SEDS-Celestia, and Project Kratos.

Prof. Vinayak Naik welcomed the students to the BITS campus with an introduction to BITS and its technical clubs. Prof. Srinivas Krishnaswamy, the head of the Chemical Engineering department, explained the relationship between Science and Engineering. Prof. Suman Kundu, the Director of BITS Pilani Goa Campus, presented the genesis of Engineer's Day to the students and the informed about various opportunities available in the Engineering profession.

The TechExpo was full of interactive tasks for the school students. Students enjoyed Sci-Tech Quiz, Paper-Plane Activity, and Autonomous Drone-based Gesture Detection. The projects displayed in the TechExpo ranged from robots, cars, and drones to Mars Rover and Schlieren Photography. There were live demonstrations and project talks. The young minds got an opportunity to touch-n-feel the equipment and see them live in action. Due to COVID-19, it was after a long three years that the students were able to mingle at the BITS campus. TechExpo, held between 11 am and 3 pm saw participation by reputed schools such as K. B. Hedgewar High School, Vidya Vikas Academy, Almeida High School, St. Andrews, and Sharda Mandir, among others.

The CTE is a dedicated team of BITS's third and second-year engineering students. Besides such events, they offer short engineering courses to working professionals. TechExpo was a big success, and the students are already looking forward to more events that will educate them and expose them to the latest technology.

WAVES 2022

Waves is BITS Goa's annual cultural fest and is one of the most highly anticipated fests in the country. It has seen an exponential growth in the number of attendees and is one of India's fastest growing fests. The fact that it takes place in perhaps the most vibrant location of the country, Goa only adds to the beautiful vibe the fest creates. The fest celebrates music, dance and art and has multiple inter-college competitions where students can display their skills and immerse themselves in the beauty of the fest. It also prodes itself on its star-studded Nights with artists of the likes of Nucleya, Sunidhi Chauhan and Amit Trivedi gracing its stage.
https://wavesbits.org/

Project CanSat-Team Rayquaza qualified for CanSat India competition

A CanSat is a sounding rocket payload used to teach space technology. It is similar to the technology used in miniaturized satellites. It is an extremely popular form factor for student competitions.

BITS Goa had a CanSat team in 2019, but the project was stopped due to the pandemic. The project restarted in 2022 and the team has participated in India's first-ever CanSat competition organized by Astronautical Society of India (ASI). The team has cleared the Preliminary Design Review stage (1st round) and are currently working on the Critical Design Review (2nd Round). The team started making the prototype for the CDR last semester.

The CanSat team consists of: Vikramvaidyanthan Venkatraman (Team Lead and Electronics Subsystem Lead); Om Diwan (Mechanical Subsystem Lead); Siddhant Vattsa (Communications Lead); Pratyush Kumar (Electronics Subsystem Team Member); Aakash Bedre (Mechanical Subsystem Team Member); Jonish Abisheck (Mechanical Subsystem Team Member); and Milind Singh Rao (Communication Subsystem Team Member)

About the competition: CanSat India, a student competition by IN-SPACe, is the first of its kind held in India. It is divided into four main phases. The first phase involves the submission of a PDR (Preliminary Design Review) Document. The second Phase involves the submission of a CDR (Critical Design Review). After this, a Flight Readiness check is done by the competition. Upon Clearing all the stages, the final launch of the Cansat itself is done. This is a year-long competition, with registrations starting in August and the final launch scheduled for June of the following year. The Astronautical Society of India organizes it. The main focus of this year's competition will be the descent control of the CanSat. It is an interdisciplinary project requiring various hardware and software skills.

The PDR document outlines the design of our CanSat. It explains the thought process behind every choice, justification, and possible alternative for said design. We have submitted our PDR and have made it to the second round, which involves the CDR.

The CDR document outlines the building of our prototype and the tests we do on it, and the results. We also have to mention if there were any changes made to the actual design in comparison to the PDR and if the results of the tests matched our expectations.

EINSat team presented following two papers at the AIAA International Student Conference in Adelaide, Australia on 29th Nov 2022:

• Multi-battery System as an alternative to Single Battery Storage in Nano Satellites.

• Use of Fast Steering Mirrors in improving LOS Pointing Accuracy in Observation-Based CubeSats.

Project EINSat is the CubeSat project of SEDS Celestia - the first CubeSat undertaking at Goa Campus. The aim of the project is to design and build a 3U CubeSat which will be deployed to low-earth orbit and monitor stars to detect exoplanet transits.

A group of students viz. Kaustubh Murudkar (Founder and Team Lead), Vikramvaidyanathan Venkataraman, Parth Keswani, and Roehit Gupta worked on the paper presented in AIAA under the guidance of Dr. Kunal Korgaonkar and Prof. Sri Ram Shankar Rajadurai.

BITS Student team 'BITSnPieces' wins the first Goa Police Hackathon

Students' team 'BITSnPieces' won the first prize in the first Goa Police Hackathon 2022 held on 10th ¬-11th Sept 2022.

This was the first initiative of Goa Police after collaborating with premier academic institutions in Goa on the topics related to Cyber Security.

BITSnPieces team were presented with a cash prize of Rs. 25,000/-, a trophy and certificates.

Out of around 200 students and 43 teams that applied, around 20 teams were shortlisted for the 48-hour non-stop hackathon. Three teams from BITS Pilani, Goa Campus viz. BITSnPieces, BITS_AndroMalDetect and MalwareBusterz got shortlisted to participate in the hackathon and worked on the problem statement - Malware Analysis and Investigation.

BITS Pilani team 'BITSnPieces' comprising of Praneeth Bala, Bharath Hegde and Akhil Bansal, which bagged the first prize, were presented the award by the Chief Secretary of Goa, Shri Puneet Kumar Goel (IAS) in presence of missile woman of India, Dr. Tessy Thomas, Director General of Aeronautical Systems; the DGP of Goa Police, Shri Jaspal Singh (IPS), Director of IIT Goa, Prof. B K Mishra, Principal of GEC Dr. Rajesh B Lohani.

Accessible Labs wins Student Design Challenge at the EMPOWER 2022

Accessible Labs, a team consisting of 4 students viz. Akanksha Dasmohapatra (2020A8PS1777G); Raghav Mangalapalli (2019B3A70554G); Parthasarathy PD (2021PHXP0042G); and Anagha Rajesh (2020B2PS1953G) - has won the Student Design Challenge at the EMPOWER 2022 conference held at IIT Madras Research Park.

The team worked on a project to make science labs accessible for blind students. The team was among the top four teams across India and was awarded Rs. 25,000 to take the project forward. The team is guided by Dr Swaroop Joshi, Assistant Professor, Computer Science and Information Systems.

The EMPOWER Conference is an annual technical event organized with the intent of bringing together all the stakeholders in the field of assistive technology, including researchers, user organizations, industries, as well as policymakers.

The fifth EMPOWER Conference was held at the IIT Madras Research Park, Chennai, from 13th to 15th Oct 2022.

Further, the team was also awarded the Professor Suresh Ramaswamy award 2022-23.

Team AlgoManiaX, consisting of Ruturaj Godse, Tarush Agarwal and Aryan Gupta participated in the International Collegiate Programming Contest - an algorithmic programming contest for college students. Teams of three, representing their university, work to solve the most real-world problems, fostering collaboration, creativity, innovation, and the ability to perform under pressure. Through training and competition, teams challenge each other to raise the bar on the possible. Quite simply, it is the oldest, largest, and most prestigious programming contest in the world. This contest is conducted in multiple rounds, Preliminary - Regional - Continent Finals - World Finals. Team AlgoManiaX secured the following ranks in each of the rounds:

• ICPC Online Preliminary Round (4th Sep 2022): Rank 24
• ICPC Amritapuri Regional Round (8th Oct 2022): Rank 19
• ICPC Asia West Continent Finals (24th Dec 2022): Rank 40

Lokesh Bolisetty (2019A7PS0103G), Dhyana Chidvilas Rottela (2019A7PS0093G) and Akash Reddy Y (2019A7PS0055G) participated and won the first place in "Analytica: The Data Analysis event" conducted as a part of Sankalp 7.0 by ICAR-NARM. The team had to analyse the data from a survey and make a tool for the brands to evaluate their performance on various levels.

The Music Society of BITS Pilani - Goa Campus participated in Festember, the annual cultural festival of NIT Tiruchirappalli held between 29th Sept and 3rd Oct 2022. The team bagged 2nd place in Eastern Band, 2nd and 3rd place in Instrumental Duet, 3rd place in acoustic band, 3rd place is RAP and 3rd place is Solo Eastern Singing.

The team consisted of: Sunal S (BASS & VOCALS) 2021H1060131G; Shivsundar R (VOCALS & GUITAR) 2019A7PS0081G; Amal Prakash (FLUTE) 2019A7PS0018G; Ankush Mahanty (VOCALS) 2019B1A81095G; Vivek Mohan (KEYBOARD & VOCALS) 2020A3PS1450G; Rishab Srivatsa (GUITAR) 2020A1PS1202G; Ishaan Shukla (GUITAR) 2020B2A82027G; Devansh Agrawal (TABLA) 2021A3PS2146G; Vedang Manu Varma (VOCALS & VIOLIN) 2021A8PS2986G; Kushal Sarkar (DRUMS) 2021A8PS0813G.

The Music Society of BITS Pilani - Goa Campus bagged 2nd place at the Battle of Bands event held at Club Copa Cabana in Radisson Blu held on 27th Dec 2022, along with the prize for the Best Keyboardist.

The team consisted of: Aditya Rai a.k.a PHOBIC (RAP) - 2022B3PS0331G; Shiv Patel (FLAUTIST) 2022A7PS1157G; Mannat Koolwal (SYNTH) 2022B5PS0085G; Shivsundar R (VOCALS) 2019A7PS0081G; Rupali Rajesh (VOCALS) 2022A7PS0006G; Ayush Jha (KEYBOARDIST) 2022B2PS1384G; Siddhi Venkatesh (VIOLINIST) 2022A4PS0815G; Shrijat Majumdar (DRUMMER) 2022A7PS0361G; Ankur Mudugu (GUITARIST) 2022A7PS0054G

Following students won at the BOSM 2022, held at BITS Pilani, Pilani Campus from 14th to 18th Oct 2022:

Badminton Team for Bronze Medal
Armaan Chowfin for Gold Medal in Squash
Amogh Rai for Bronze Medal in Triple Jump
Chess Team A for Silver Medal in the Blitz round
Chess Team B for Bronze Medal in the Blitz round
Palaash Patel for Silver Medal in Discus Throw.
Prerona Pathak for Gold Medal in Discus Throw
 Chess Team A for Silver Medal
Chess Team B for Bronze Medal
Squash Team for Gold Medal
Aaryan Marar for Gold Medal in Powerlifting
Aditya Verma for Gold Medal in Taekwondo

Aaditi Basarkar, a Ph.D. student of the Chemistry department and Prof. Ranjan Dey, Department of Chemistry co-authored a paper titled 'Dey-Biswas Equation is Highly Effective for Viscosity Prediction of Binary and Multicomponent Liquid Mixtures Including Ionic Liquid Mixtures' and published in Journal of Molecular Liquids, 367 120457 (2022). https://doi.org/10.1016/j.molliq.2022.120457

Anjli Varghese, a Ph.D. student of the EEE department has been awarded as one of the Best Presenters at the 9th International Conference on Soft Computing & Machine Intelligence, held in Toronto, Canada, on 26th – 27th Nov 2022.

She presented the paper titled 'Texture Analysis on Digital Microscopic Leather Images For Species Identification,' a part of her research work. Dr. Malathy Jawahar, Prof. A Amalin Prince, and Prof. Amir H Gandomi are the co-authors of this paperwork.

Her research work is supported by Tata Consultancy Services Research Scholar Program (TCS-RSP)

Mamta Kodarkar, a PhD student won Best Oral Presentation award at International Conference on 'Environmental Sustainability and Biotechnology- Opportunities and Challenges' held in Goa from 16th to 19th Nov 2022. Her presentation is on part of her research topic titled 'Bioremediation of St. Augustine church Old Goa-India: Removal of sulphates'

Swetha R, a PhD student working with Prof. Utpal Roy, at Department of Biological Sciences received ICMR-Senior Research Fellowship Award, 2022-23 and also won the most prestigious 21st Congress of the International Society of Human & Animal Mycology (ISHAM) Registration Waiver (September 2022) Grant to be held at Delhi.

Fehad Nabi Khan, a PhD student in the Department of Chemical Engineering has been recommended to receive the prestigious Prime Minister's Fellowship to pursue Doctoral research. The fellowship is tenable for a maximum period of 4 years. Mr. Fehad will be working under the supervision of Prof. Srinivas Krishnaswamy from the Chemical Eng. Department on investigating "Multicomponent Phase Equilibria Studies in Water of Gaseous Components Present in Tail Gas Streams of Carbon Black Plant".

Malati Dessai (2013PHXP101G) and Prof. Arun V. Kulkarni co-authored a paper entitled 'Calculation of tunneling current across trapezoidal potential barrier in a scanning tunneling microscope' published online by the Journal of Applied Physics on 22nd Dec 22.

Aaditi Basarkar (2017B2A10305G) published paper in Journal of Molecular Liquids, ELSEVIER (Impact Factor – 6.63)

Aditi Prabhune won the Third Prize in the ORAL Presentation at the National Symposium on Drug Discovery to Delivery (DDD-2022) Organized by Royal Society of Chemistry (RSC) and NIPER Guwahati, 2022.

Advait Anil Menon (2019A4PS0414G), Dept. of Mechanical Engineering was selected for a semester exchange at University of Guelph, Canada in Semester I AY 2022-23 (Sept- Dec 2022). He received a scholarship of total tuition fees waiver during his semester exchange at the host university.
The entire process of shortlisting and selection of student was coordinated by IPCD and Centre for International Programs Office, University of Guelph.

Anagha Rajesh (M.Sc. Chemistry) has featured in the list of top 10 finalists of Varkey Foundation Global Student Prize 2022 amongst 7000 applicants from across the world.

Arjun Tyagi (2019A8PS0579G) was awarded a fully-funded research internship for summer of 2022 at IIT Delhi by Arizona State University in August 2022.

Ruturaj Godse, a 4th year student of CSIS secured the 2nd Runner-up position in the 'Innovate India Coding Championship (IICC) - 2022' organised by AICTE (All India Council for Technical Education) and Coding Ninjas - India's online upskilling platform for aspiring and professional coders, in collaboration with Chandigarh University held in August 2022 at Chandigarh. He won the cash prize of Rs. 50,000/, and received a trophy and certificate.

Shrey Mehta (2020B3A71459G), represented Gujarat squash team in the 36th National Games conducted in Gandhinagar, Gujarat, from 2nd to 5th Oct 2022.

Shreyash Singh (2020A3PS1252G) a won consolation prize in "Essay Writing Competition" organized by Uttar Pradesh Hindi Sansthan held in June 2022. The prize containing cash prize of Rs. 2000, a certificate and memento were presented in Nov 2022.

Vrishti Godhwani (2022A7PS0260G) and Ashutosh Raj Dwivedi (2022B2PS0905G) secured IV Prize in English & Hindi category respectively at the Elocution Competition organized by Goa Shipyard Ltd. as part of Vigilance Awareness Week on 28th Oct 2022 at BITS Pilani's Goa Campus.

Educational Tours hosted by Goa Campus

Prof. D M Kulkarni, Dean – Administration hosted a group of 16 Scientists and Technologists participating in 21st Foundation Training Programme for Scientists and Technologists organized by the Indian Institute of Public Administration (IIPA), New Delhi on 5th Nov 2022. The group was led by the Programme Coordinator of the IIPA, Prof. Vinod K Sharma.

Prof. Kulkarni familiarized the participating scientists with the BITS Pilani's education system as well as recent research projects.

Department of Chemistry hosts students of Dnyanprassarak Mandal's College and Research Centre

The Department of Chemistry hosted 73 students of M.Sc. (Part-I) in Chemistry along with 4 faculty members of Dnyanprassarak Mandal's College and Research Centre (DMCRC) on 2nd Dec 2022.
The group was given a tour of the department where they were exposed to various research activities and instrumental facilities. They were also made aware of the different admission programs of the institute including the scope of pursuing PhD in our institute. Broad research areas of our department were also highlighted to inspire them for research. The students were very interactive, enthusiastic, and disciplined and many of them have expressed their interest to pursue research. They were also given a short tour of the state-of-the-art Central Sophisticated and instrumentation Facilities (CSIF).

CS & IS Dept hosts students of MES HSS under Scientific Social Responsibility programme

he department of Computer Science and Information Systems (CSIS) hosted 30 class XI students of Science stream of MES Higher Secondary School as part of Scientific Social Responsibility programme on 10th Dec 2022. The event was funded by the Science and Engineering Research Board (SERB), Govt. of India, to Prof. Basabdatta Sen Bhattacharya (BSB) and Prof. Sujith Thomas – both faculty members at CSIS department of BITS Pilani Goa Campus. The theme of the technology and science session was Brain inspired Computing, and was conducted by the Brain Inspired Neural Networks (BINN) lab led by Prof Basabdatta Sen Bhattacharya.

Prof. Sen Bhattacharya inaugurated the morning session by introducing the students to the concept of brain inspired computing and research conducted in the BINN lab. This was followed by fun and interactive sessions with the students conducted by Ms. Swapna Sasi and Mr. Enuganti Pavan Kumar, Doctoral Research Scholars at the BINN Lab. Ms. Swapna Sasi started off by introducing the students to the idea of leveraging on existing knowhow on how the brain learns, which they can use to adapt their individual learning styles for maximising efficiency; later, she talked about how computers are used for research in brain diseases.

After lunch, Prof BSB started the afternoon session by introducing the general concept of Neural Networks as opposed to brain inspired ones. Mr. Yogesh Dasgaonkar, Doctoral Research scholar in the CSIS Department, talked about using AI for education. Prof Sujith Thomas introduced the students to exciting research using eye tracking, a technology that is made popular by recent commercial applications. The last talk of the session was by Prof Swastibrata Bhattacharyya from Physics, who took them into the fascinating world of Graphene, and material science in general, that are fundamental to building computers!

The visit ended with a short tour of the campus. the students were given a tour of the Computer Centre by In-charge Mr. Baiju Krishnan. This was followed by: visit to the library, where the library staff showed them around; visit to the Students Activity Centre to see the sports facilities at our campus. The students thanked the faculty members for this opportunity.

Other Institutes' visit to campus:

- 16 students of Eranad Knowledge City, College of Architecture, Manjeri, Kerala visited the campus for studying the architecture of the campus on 6th Oct 2022.

- 78 students of B.Sc. and M.Sc., microbiology students and 5 faculty members of P.E.S's R.S.N.College of Arts and Science College, Goa visited Department of Biological Sciences on 21st Oct 2022.

- 32 students of Nehru Arts and Science College Coimbatore, Tamil Nadu visited BITS BIRAC Bio-NEST on 1st Nov 2022.

- 32 students of Goa College of Engineering, Farmagudi, Goa accompanied by the Librarian visited Library on 9th Nov 2022.

- 37 students of Government College for Women Thiruvananthapuram, Kerala accompanied by a faculty member visited Department of Mathematics on 22nd Nov 2022.

- 35 students of Goa College of Arts, Science & Commerce, Khadola Goa accompanied by 5 faculty members visited BITS BIRAC BioNEST on 8th Dec 2022.

Faculty members appointment on national/ international advisory committees/ acted as reviewers for books/ journals of national/ international repute

Faculty Name	Department of	Name of Advisory Committee / Editorial Board
Prof. Anjan Chattopadhyay	Chemistry	Reviewed papers for the following Journals • ACS Omega (American Chemical Society journal) • Journal of Physical Organic Chemistry (Wiley journal) • Journal of the Indian Chemical Society (Elsevier journal)
Dr. Ashish Chittora	EEE	Reviewed: • IEEE Transactions on Electron Devices • IETE Journal of Research, IEEE Microwave and Wireless Components Letters • IEEE Tegion Ten Symposium, IEEE MAPCON 2022 Conference
Dr. Ganesh Bapat	Mechanical Engineering	Adjunct Associate Professor in the Department of Biomechanics at University of Nebraska, Omaha, USA
Dr. Hemant Rathore	CS&IS	Appointed as "Editor, PeerJ Computer Science [SCIE] [SJR: Q2], Journal"
Prof. Jajati Keshari Sahoo	Mathematics	Reviewed: • Electronic Journal of Linear Algebra • Applied Mathematics and Computation • Demonstratio Mathematica • Journal of Optimization Theory and Applications
Prof. Pravin Singru	Mechanical Engineering	Subject Expert on Board of Studies in Ramdeobaba Engineering College, Nagpur (Autonomous)
Prof. Rajesh Mehrotra	Biological Sciences	Reviewed • Genome wide identification, expression profiles, regulatory network analysis of SOS family gene in Camellia sinensis. • Cloning and insilico characterization of an abiotic stress inducible Ubox domain containing protein gene GSPUB8 from Glycine soja.
Dr. Sudhy S Panicker	Mechanical Engineering	• National advisory committee member, 3rd International Conference on Sustainable materials, Manufacturing and Renewable Technologies (i-SMaRT) 2023 • Reviewed articles for international journals: (i) Transactions of the Indian National Academy of Engineering (INAE), Springer; (ii) Materials, MDPI

Faculty Name	Department of	Name of Advisory Committee / Editorial Board
Prof. Ranjan Dey	Chemistry	Co-Editor: Special Issue – Frontiers in Chemistry: "Solvation Effects of Organic Reactions in Ionic Liquids, Deep Eutectic Solvents, and Conventional Solvents". Committee Member - Statistical Mechanics and Thermodynamics Group (STMG), Royal Society Of Chemistry Reviewed Research Papers published by: • Journal of Molecular Liquids • Journal of Chemical Thermodynamics • International Journal of Biological Macromolecules • Chemical Data Collections • Heliyon • Taiwan Institute Of Chemical Engineers

Introducing new faculty

Name	Department	Designation	Area of Research Interest
Dr. Diptendu Chatterjee	CS & IS	Visiting Faculty	Computer Science
Prof. M. Thamban Nair	Mathematics	Visiting Professor	Functional Analysis (Operator Equations, Inverse & Ill-posed Problems)
Dr. Harikrishnan N.B.	CS & IS	Visiting Faculty	Machine Learning, Information Theory, Chaos Theory, Linear Algebra
Dr. Ramappagari Leshma Manogna	Economics & Finance	Assistant Professor, Gr-I	Financial Econometrics, Corporate Finance, Agricultural Commodity Markets
Dr. Mrunalini Kawaduji Gaydhane	Chem Engg.	Assistant Professor, Gr-I	Chemical Engineering, Polymer Science, Nanoscience & Nanotechnology
Dr. Debolina Ghatak	Mathematics	Assistant Professor, Gr-I	Probability Theory, Statistical Inference, Stochastic Processes

Durga Puja Celebration in BITS Pilani K K Birla Goa Campus (October 1st - 5th, 2022)

Durga Puja is the annual celebration of the Hindu goddess Durga - called Sarbojanin Utsav or a festival that is for all. It, one of India's grandest festivals which reflects the nation's cultural heritage and the harmonious co-existence of every citizen of our motherland, is celebrated with great zeal and enthusiasm throughout the country. It spreads for 5 days i.e. Maha Sashthi, Maha Saptami, Maha Ashtami, Maha Navami, and Bijoya Dasami.

In BITS Pilani K K Birla Goa Campus, the campus community has been celebrating the Durga Puja, a celebration of diversity on the campus, since its inception in 2004. This year we are completing the 18th year of the Durga Puja celebration.   The puja starts on Maha Sashthi - through Devi Bodhan. Then it enters into its main phases - Maha Saptami, Maha Ashtami, Maha Navami, and finally into the Bijoya Dasami.

On each of these four days, other than usual puja rituals & prasad distribution, we have cultural events/activities spread over. Among the cultural events, we had a fancy dress competition for the campus children, drawing competition for kids, SRIJAN- An exhibition of handicraft items, and performance arts like dance, music, and musical instruments by campus children, faculty members, and their Spouses. Other events included - a culinary (competition for ladies), and rangoli-making competition. Bihu dance, solo dance performances, Carnatic & Hindustani classical performances, modern song (solo & duet), gymnastics, performances by BITS students, and a game of Musical Chairs were enjoyed by all. We also had a drama performance on Navami titled - The Eviction Notice - performed by faculty members.

On the day of Navami, there was a prize distribution. Prof. Suman Kundu, the campus Director gave the prizes to winners in several categories of cultural event competitions.

Finally, on 5th Oct 2022, the Visarjan Ceremony of Maa Durga - we all went to Hollant beach, near Bogmalo for the Idol Visarjan of Maa Durga.

Devi Maa Durga - who resides as Power and Peace, Knowledge and Love, appears as a daughter figure who returns home once every year during the five days of Durga Puja with her four children.

Students, teaching and non-teaching staff members, and the entire BITS Pilani K K Birla Goa Campus community members enjoy this festival, a festival as the victory of good over evil, every year with a lot of enthusiasm and happiness.

BITS Pilani Durga Puja website: https://www.sites.google.com/view/bitsgoadurgapuja/home.

Sursangam Carnatic Concert

Srutilaya - the Classical Artforms club of BITS Goa presented the annual Sursangam 2022 an annual Classical Music concert in the loving memory of its founder, Late Professor Suresh Ramaswamy on 9th Oct 2022. Celebrated Carnatic Vidhwan Ramakrishna Murthy of Chennai, known for his effortless style and prodigious creativity, performed in the concert. He was accompanied by Vittala Rangan Bilvam on the Violin and NC Bharadwaj on the Mridangam. BITS alumnus Sukrut Tamhankar also presented a Hindustani Vocals performance, along with two accompanists on the Harmonium and Tabla.

Editorial board

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Cover Photo (Left to Right):
BITS Pilani officials & Chief Guest on the dais during Convocation 2022 Col S Chakraborty (Retd), Registrar, BITS Pilani Prof. Souvik Bhattacharyya, Vice Chancellor, BITS Pilani Dr. Rajesh S. Gokhale, Secretary, Department of Biotechnology, Government of India Dr. Kumar Mangalam Birla, Chancellor, BITS Pilani Prof. Suman Kundu, Director, BITS Pilani - K K Birla Goa Campus.

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semester I notes 2022-23   **bitscan**, **BITS** Pilani K.K. Birla Goa Campus   ani K K Birla Goa Campus