



**BITS Pilani**  
Pilani Campus

Semester-II notes 2019-20

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Pilani Campus



# Editorial

The second semester of 2019-2020 had a mix of both online and on-campus events due to the onset of the pandemic. Major highlights of the semester included Republic Day, Founder's Day, Basant book festival, Golden Jubilee Celebration of the batch of 1965-70 which proved to be an amazing experience wherein the alumni recreated their journey through interactive light and sound show on the iconic clock tower. Batch of 1970-75 also celebrated Golden jubilee reunion on the campus.

BITS Pilani announced Distinguished Alumnus Awards, 2020 to twelve of its eminent alumni who have made extraordinary contributions in their respective domains of Academia & Research, Corporate & Leadership, Public Life, etc. The prestigious Prof SSR Memorial Teaching Excellence Award for the year 2019 was conferred upon Prof Vinod Kumar Chaubey, Head, Electrical and Electronics Engineering Department.

Students involvement in the various societal initiatives was evident from their efforts to conduct 39th Annual blood donation camp, sports day, etc. Nirmaan, a voluntary organization by the students organized various activities like martial arts workshop for girls, water conservation drive for school going kids, awareness drives on youth employment, etc. On the academic front, both the faculty and students kept on adding laurels to the institute. Many faculty members have received distinguished awards and received several sponsored research projects by agencies like DST-SERB, ICMR, DBT, DRDO, etc.

Due to COVID-19 pandemic, a lot of events/talks were held online like Virtual conference on Chemistry, International webinar on smart cities, etc. BITS Pilani Library helped BITSians in fighting the tough times by providing Teaching and Research Aids Alert Service and various other facilities to make library resources available online. Campus sanitization, developing mouth sanitizer to prevent COVID-19 were some of the strategic responses undertaken by BITS. Despite all odds it was an enriching semester, setting new milestones irrespective of the challenges posed by the rampant pandemic.



## Alumni Achievements



**Mr Hari Menon (1979 Batch)** has been conferred with the Start-up of the Year award-2019 by Business Standard. He is the founder of BigBasket which is India's largest online grocery company and the latest entrant in the Unicorn club. They have crossed Rs.3200 crore in sales by growing over 60% during the year. BigBasket was launched back in 2011 and in 2020, it has over 10 million registered customers. Which process more than 1 Lakh orders per day across 25 Indian cities.



**Prof Seshadri Vasam (1991 Batch)** BE-Chemical Engineering, got a major breakthrough in developing a vaccine for coronavirus (2019-nCoV). The Dangerous Pathogens team of the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Australia, headed by Prof Vasam has grown the first batch of coronavirus outside China. His team has grown the virus in sufficient quantity needed to conduct preclinical studies. This development has brought the world closer to a coronavirus vaccine. A former McKinsey consultant and Rhodes scholar, he is also an Adjunct Professor of Preventive and Social Medicine at Jawaharlal Institute of Postgraduate Medical Education & Research, Government of India.



**Mr Aravind Yarlagadda (1996 Batch)** BE-Electronics & Instrumentation, has been appointed as the Chief Digital Officer and Executive Vice President of Eaton. He has over 20 years of experience in product management, sales, marketing, business development, mergers, acquisitions, and integration. He has also served in several senior leadership roles at Itron, Schneider Electric, Invensys and Tyco.



**Mr Reep Hazarika (1985 Batch)** BE-Chemical Engineering, has been appointed as the Managing Director of Brahmaputra Cracker and Polymer Limited-a Government of India Enterprise under the Ministry of Chemicals and Fertilizers. He will be the fourth incumbent to the top post of BCPL with over 30 years of experience in the oil refining and petrochemical industry, He has worked in Indian Oil Corporation Limited, Numaligarh Refinery Limited and Bharat Oman Refineries Limited.

**Prof S.P. Kothari**, a distinguished Alumnus awardee has been honored with the Padma Shri award 2020 by the Government of India for his outstanding global contributions made to Literature and Education. Prof Kothari is the Gordon Y Billard Professor of Accounting and Finance at the MIT Sloan School of Management. He has recently been appointed as the chief economist and director of the Division of Economic and Risk Analysis (DERA) at the U.S. Securities and Exchange Commission.



## Distinguished Alumnus Awards 2020

BITS Pilani announced the Distinguished Alumnus Award (DAA) 2020 to twelve of its eminent alumni who have made extraordinary and outstanding contributions in their domains. BITS Pilani bestows these awards annually to recognize excellence and meaningful contribution globally by its alumni in the areas of Academia & Research, Corporate Leadership, Entrepreneurship, Public Life & Philanthropy.

Distinguished Alumnus Awards for 2020



This year, those awarded by their alma mater are - Miss Revathi Advaiti (CEO, Flex), Mr Rakesh Verma (Founder, MapmyIndia), Mr Kishore Rajvanshy (Managing Director, Fleet Management Company), Mr Anurag Jain (Managing Partner, Perot Jain LP), Mr Jayan Ramankutty (Investor and Entrepreneur), Mr Subhash Malhotra (Founder, Claridge Homes), Mr Sunil Nanda (Founder, Pilani Atmanirbhar Centre), Prof Milind Tambe (Professor, Harvard University), Prof Gerard George (Dean, Singapore Management University), Prof Aditya P. Mathur (Emeritus Professor, Purdue University), Prof Krishnan Balasubramanian (Emeritus Professor, Arizona State University), and Prof Madan Pillutla (Professor, London Business School).

The winners were selected by a selection panel chaired by Mr Deepak S. Parekh, Chairman HDFC Ltd., with members that included Mr Harish Bhat, Brand Custodian, Tata Sons, Mr Matthew Cherian, Former CEO HelpAge India, Mr D. Bhattacharyya, Vice Chairman, Hindalco, ABG, Vice-Chancellor, Prof Souvik Bhattacharyya, and Dean Alumni Relations, Prof Arya Kumar. Vice-Chancellor Prof Souvik Bhattacharyya, remarked that "It is an extremely difficult task to select a few distinguished BITSians from a long list of achievers, but we are pleased to learn that so many of our alumni are doing ground-breaking work across the globe".

## Alumni Reunion

The 1965-70 batch of BITS Pilani celebrated 50 years of their graduation. The batch recreated their journey through an interactive light and sound 3-D laser show at the backdrop of the iconic clock tower, which narrated the story of alumni from 1965-70 at Pilani, then a quaint village away from urban cities. The reunion saw participation from more than 90 alumni accompanied by their spouses.

The batch proudly counts Padma Bhushan Babasaheb Kalyani, Chairman and President of Bharat Forge, as one of its members. They also pledged an amount of Rs. 2 crore to BITS Pilani for building a convention centre and a guest house.

Vice-Chancellor Prof. Souvik Bhattacharyya, said, "It is heartening to see the love and joy from our alumni even after 50 years. It feels gratifying to be able to provide education to young students who go on to become leaders, contribute in building society, corporations and most importantly, the nation."

Golden Jubilee Reunion for the batch of 1965-70



## Golden Jubilee Reunion for the batch of 1970-74/75

The batch of 1970-74/75 celebrated their Golden Jubilee on February 8, 2019. More than 110 alumni arrived at the campus from across the world to celebrate their reunion and recall fond memories. One of the major highlights of the event was Gurudakshina. It was organized by the BITS-75 trust to felicitate 10 prominent teachers who had taught, inspired and encouraged them at Pilani. Starting from 2009, they have honoured 40 faculty members under Guru Dakshina and the number has touched 50 faculty members after Gurudakshina 2019.

Golden Jubilee Reunion



## International Webinar on Smart Cities: Beyond the Pandemic.

A Webinar on the theme of "International Webinar on Smart Cities: Beyond the Pandemic" was organized by the institute and was coordinated by Prof Shamsher Bahadur Singh. The webinar highlighted the use of technology and innovative solutions for the concept of smart cities to cope-up with the COVID-19 pandemic. The inaugural session was addressed by the Vice-Chancellor, Prof Souvik Bhattacharyya, urging participants to propose smart cities solutions that involve intelligent strategies which can be locally adapted to lead a sustainable future. The Director, Prof Sudhirkumar Barai enlightened the participants with a message of turning the hardships faced during the pandemic into an excellent opportunity to create a smarter world with novel technologies and ideas.

The Gurus were honored with a citation, a shawl and Rs. 1 lakh as a token of appreciation by the BITS- 75 Trust. Vice-Chancellor Prof Souvik Bhattacharyya, welcomed the alumni and shared the developments of the institute. Prof Bhattacharyya also shared that a new and distinct impetus is given to connect with the Alumni so as to strengthen the ties for growth and development of the institute. Dean Alumni Relations, Prof Arya Kumar, applauded the effort of honouring the gurus and contributing back to their alma mater.

## Virtual Conference on Chemistry

The Department of Chemistry, organized a half-day virtual conference in June 24, 2020, in association with Indian Society of Chemists and Biologists (ISCB) Lucknow on "Cross-cutting Edge Research in Organic and Medicinal Chemistry". The event was virtually inaugurated by the Vice-Chancellor, Prof Souvik Bhattacharyya and the Director Prof Sudhirkumar Barai. Dr. PMS Chauhan, General Secretary ISCB welcomed the speakers and participants. The keynote lecture was delivered by Padma Shri Prof Goverdhan Mehta, a distinguished alumnus award winner. Prof Mehta in his presentation stressed on the need of organic synthesis and medicinal chemistry synergy post COVID-19 era. The keynote address was followed by four invited lectures by Dr. D. Srinivasa Reddy (NCL Pune), Prof Suvarn S. Kulkarni (IIT Mumbai), Prof Asit K. Chakraborti (IIT Ropar) and Prof Ashok K. Prasad (University of Delhi). Around 300 participants attended the

conference through WebEx and benefited from the experience of eminent speakers.

### **BITS Pilani team develops Mouth Sanitizer to prevent Covid-19 spread**

A team at the institute, led by Prof Suman Kapur, has developed a phyto-constituent, molecular medicine-based formulation that can be used as a mouthwash by Covid-19 patients and their care-givers, to prevent the spread of the infection. Three lots of the natural product-based mouthwash have been prepared and tested for use in humans based on an in-vitro cytotoxicity and inhibition of viral infectivity specific assays. The team is now initiating clinical validation case control studies to measure the viral load in subjects post use of the mouthwash, and will soon embark on commercial production with strategic partner companies.

According to Prof Kapur, the mouthwash has been tested by a third-party internationally accredited lab, and found to completely inhibit the infectivity of virus particles into cultured cells. Also, the formulation was completely non-toxic to cultured cells over a period of up to 72 hours.

### **Strategic Response to COVID-19**

Some extremely vital changes have redefined the entire dynamics of the educational system and processes due to the COVID-19 pandemic. In this context, a booklet titled "Strategic Response to COVID 19" has been brought out, consolidating actions taken at the Pilani campus and initiatives taken by BITS Pilani alumni across the globe. The Flipbook of the booklet was released by the Vice-Chancellor, Prof Souvik Bhattacharyya, the Director Prof Sudhirkumar Barai and the Dean Alumni Relations, Prof Arya Kumar.

Booklet titled "Strategic Response to COVID 19"



### **Prof. SSR Memorial Teaching Excellence Award**

In a virtual function organized by Alumni Relations Division of the institute on June 02, 2020, Prof S. S. Ranganathan Memorial Teaching Excellence Award for the year 2019

was conferred upon Prof Vinod Kumar Chaubey, Head of the Department, Electrical & Electronics Engineering. The award was constituted by a group of alumni from 1978-83 batch in the memory of their beloved teacher, popularly known as SSR, and was third in the series. Faculty members from the four BITS campuses and alumni across the globe participated in the function.



The award with a certificate and a cheque of Rs. 1 Lakh was handed to Prof Vinod Kumar Chaubey in recognition of his excellence and high standard of teaching. Ms Poonkuzhali – Prof Ranganathan's daughter shared about her father's commitment towards teaching and his love, affection and care for the students. Prof Ranganathan's students Mr. E. R. Chadramouli, Mr. N. Ramkumar, Mr. D. R. Seetharaman shared their experiences and incidents to highlight Prof Ranganathan's gentle personality and their deep respect for him.

### **Prof L.K. Maheshwari Distinguished Alumnus Award - 2019**

Prof L.K. Maheshwari Distinguished Alumnus Award - 2019 ceremony was held on March 12, 2020. The award was conferred upon Prof Ramesh Harjani, E.F. Johnson Professor of Electronic Communications, Department of Electrical & Computer Engineering, the University of Minnesota for his outstanding contribution in Electrical & Instrumentation Engineering.

Prof L.K. Maheshwari Distinguished Alumnus Award - 2019



As part of the award ceremonies, Prof Ramesh Harjani delivered a lecture on his current research. He explained the Analog/RF Circuits for High-Speed Communications. The award is presented every other year by the LK Maheshwari Foundation to an alumnus of BITS Pilani working in the areas of Electrical and Electronics Engineering and Instrumentation. The foundation was established in 2010 to promote education and research in engineering. Prof Harjani earned his bachelor's degree from the Pilani campus in 1982. He co-founded Bermai, Inc, a startup company developing CMOS chips for wireless LAN applications.

### Reflections on The Touchstone of Sexual Violence and #MeToo: A talk by Prof Mary E John

"If we wish to eliminate the atrocities against women altogether, we should start fixing the issue at the grass-root level. It is essential to sensitize the young generation so that they develop empathy towards the opposite gender since the beginning which will help us to become better as a society..." said Prof Mary E John, a Senior Fellow at the Centre for Women's Development Studies (CWDS), New Delhi, India during a talk entitled "Reflections on the Touchstone of Sexual Violence and #MeToo" organized by the Internal Complaints Committee of the institute on February 1, 2020. The talk was graced by the Director, Prof Sudhirkumar Barai, faculty, students and campus

residents. Besides this, teams of school students from Birla Balika Vidyapeeth and Birla Public School also attended the talk.

Prof John stressed on the various facets of sexual violence in India. She also emphasized on the importance of the role played by higher educational institutions in sensitizing students and campus population in general and instilling a safe and emotionally healthy work environment. Prof Mary has been the Director of CWDS from 2006-2012. She has brought out the Saksham report on the issues of sexual harassment on the Indian campuses as a co-chair of the task force by UGC. The talk was concluded with the felicitation of Prof Mary by Prof S.C. Sivasubramaniam.



### FitBITS, in collaboration with the Renewable Energy Club

FitBITS, in collaboration with the Renewable Energy Club, organized the 'BITS Pilani Green Run'-a 3 km run on February 23, 2020. This was organized under the aegis of the 'Green Week', a part of APOGEE. Green Week is aimed at increasing awareness among the BITSian populace regarding the issues of sustainability, climate change, and reforestation. The aim of this event was to ensure that BITSians come together and not only learn more about these pertinent issues but also take fitness seriously. The event enjoyed a turnout of 85 people including Prof Sangeeta Sharma, Department of Humanities and Social Sciences. The runners ran a route from the Clock Tower, circumscribed the campus and finally ended at the GymG grounds. The Renewable Energy Club decided that for every individual who completed the 3 km run, they would plant a sapling on the campus grounds.

BITS Pilani Green Run'



## Founder's Day

BITS Pilani celebrated its 69th Founders Day on January 29, 2020 (Basant Panchami) in the Institute premises. In 1951, the Vidya vihar Campus of BITS Pilani was formally inaugurated by the First President of India, Dr. Rajendra Prasad on Basant Panchami, which is perennially celebrated as Founder's Day every year. The Vice-Chancellor Prof Souvik Bhattacharyya, the Director, Prof Sudhirkumar Barai, the Dean Administration Prof S.K. Verma, the Registrar Mr Ernest Samuel Ratnakumar J, and many faculty members began the auspicious day by offering floral tributes to the statue of the founder chairman, late Shri Ghanshyam Das Birla. Thereafter, Thyagaraja Aradhana Program was organized by Ragamalika-student

association group, where twenty-five students recited beautiful classical Kritis. The final grand cultural event was held in the central auditorium consisting of musical performances by students of seventeen regional societies. During the felicitation ceremony, 12 of the non-teaching staff retiring this year were honoured by the distinguished guests. In addition, 20 awards were also given to non-teaching staff. The recipients were Mr Alok Srivastava, Mr Jitendra Yadav, Ms Rashmi Nanda, Mr Sandeep Kumar Goyal, Mr Sushil Kumar, Mr Harpal, Mr Rajesh Chohan, Mr Rakesh Saini, Mr Jangvir, Mr Sumer Singh, Mr Rakesh Kumar, Smt Manju, Mr Sunil Jangir, Mr Budh Ram, Mr Lalit Singh Bisht, Mr Deb Singh, Mr. Pratap Singh Shekhawat, Shri Vinod Kumar, Shri Naveen Rawat, and Shri Sunil Kumar Saini.



## Republic Day Celebrations

The 71st Republic Day was celebrated in the institute premises. The Vice-Chancellor, Prof Souvik Bhattacharyya did the flag hoisting. Director, Prof Sudhirkumar Barai, also graced the event. The programme was attended by more than 900 students, staff members and their families. The fervor of patriotism was beautifully brought forth through the songs sung by the Gurukul students. The National Pledge, an oath of allegiance to the Republic of India, was administered by Ms. Disha Jain. The programme ended with the National Anthem.



## Mathematics Olympiad organized in BITS Pilani

The Mathematics Olympiad was organized under the aegis of the Mathematics Association of the institute. Students of Class 11 and 12 of schools Birla Balika Vidyapeeth, Birla School and Birla Shishu Vihar participated in the Olympiad. In junior category Mr. Ishaan Patial, Class 11<sup>th</sup> (Birla School) secured the first position, while the second position was secured by Miss Sonali Das (Balika Vidyapeeth). In the senior category Miss Palak, Class 12<sup>th</sup> (Birla Balika Vidyapeeth) secured first position and Miss Anushree (Birla Shishu Vihar) secured the second position. Cash prizes and certificates were awarded to the winners. The program was attended by Prof Bhupendra Kumar Sharma, Prof Balram Dubey, Prof Chandra Shekhar, Prof Keskar, members of the Mathematics Association, students and teachers of various schools. The aim of organizing the program was to increase the interest of the students in mathematics.

Mathematics Olympiad



## Events at Library

### National Science Day

The Library in association with the Department of Electrical and Electronics Engineering organized the Celebration of National Science Day was celebrated on February 28, 2020 to pay tribute to the renowned Indian Physicist Sir C V Raman - the first Indian to win the Nobel Prize in the 1930. The event started with a welcome speech by Librarian, Mr. Giridhar Kunkur, by presenting a brief note on the achievements of Sir C.V. Raman and encouragement to the present generation to follow Sir Raman's footsteps. The Director, Prof Sudhirkumar Barai graced the occasion as the Chief Guest and emphasized on the importance of academic writing and highlighted the significance of a good

writing style to communicate effectively. The Former Director CSIR CEERI Pilani, Prof. Chandrashekar presented a talk on the theme "Women Scientists of India: Past and Present" by highlighting the achievements of several women scientists in India. The event also hosted the prize distribution ceremony for the Academic Writing Competition organized by the institute's Library in association with Department of Electrical and Electronics Engineering. Prof. V. K. Chaubey, Head, Department of Electrical and Electronics Engineering, appreciated all the participants of the Academic Writing Competition. In this competition, Mr. Tejaswi Alladi won the 1st Prize, Mr. Himanshu Purohit won the Second Prize and Ms. Hema Dave won the third prize. The event witnessed an active participation from students and faculty members alike. Deputy Librarian, Dr. Ishappa Bandi and Dr. Y. Sujana, Assistant Professor, Department of Electrical and Electronics Engineering, coordinated the event.

National Science Day



### Teaching and Research Aids Alert Service - Initiative by BITS Pilani Library

A service called Teaching and Research Aids Alert Service has been set up by the Library to map the digital content of the library, covering various databases / peer- Reviewed articles from reputed international journals, to the courses taught by the faculty members as well as for the research scholars in their areas of research.

Librarian, Mr Giridhar Kunkur, mentioned that the objective is to make available a maximum of 10 articles which are latest, peer-reviewed and full-text relevant to their classroom teaching / research areas in the form of alerts on a weekly or monthly basis as per their choice. A platform has been built for this purpose. A dedicated library team is responsible for setting up the alerts for the end users. A review section is also added to preview or remove previously set alerts.

## Basant Book Festival 2020

The five-day Basant Book Festival - 2020 was inaugurated by the Vice-Chancellor, Prof. Souvik Bhattacharyya and Director, Prof. Sudhir Kumar Barai, on February 10, 2020 in the presence of many esteemed faculty members, Staff and students of BITS Pilani and Birla Balika Vidyapeeth. The event was being organized under the supervision of Librarian, Mr. Giridhar Kunkur.

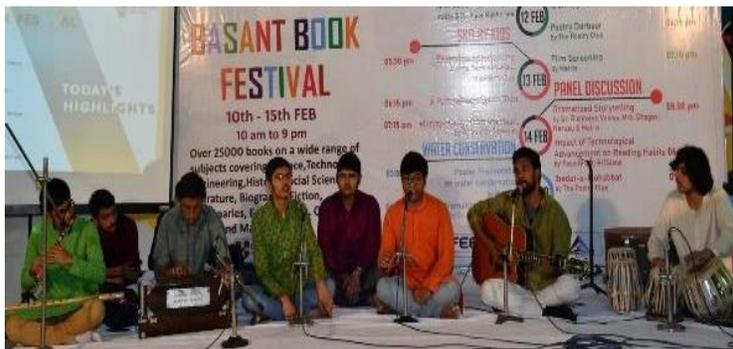
Basant Book Festival 2020 Inauguration



Over 25000 books covering over all branches of science, engineering, literature, technology, biography, fiction, etc. and ten different publishers: Usha Book Distributors, Narendra Publishing House, Cambridge University Press, Technical Bureau India Pvt. Ltd, Indica, Feel Books, Viva Books and SPD were present. Apart from books on paper, e-books were also available from Pearson and Wiley.

The book festival also conducted events and talks like Panel Discussion on Impact of Technological advancement on Reading Habits, Poster Presentation on Water Conservation and Talk on Writers. Daily Dramatized Story Telling Sessions, Literary Events by Poetry and Matrix Clubs, Sur Sandhya - a musical evening by Gurukul and Faculty members, etc. were also organized.

Sur Sandhya - a musical evening by Gurukul



The Poster Presentation on “Water Conservation and reuse: Implementable ideas in Rural Scenario” was

organized as a part of Basant Book Festival-2020. There were six poster presentations by BITSians and all presented their innovative ideas to save “drinking water”. Nearby villagers were welcomed to witness this event and take away the ideas to implement in their respective villages to overcome the acute shortage of drinking water.



## ACC Activities

Academic Counselling Cell organized various activities in the second semester of 2019-2020. A two-day training was provided to all ACC members on various topics focusing on a few aspects of Mental Health and Counselling during January 18-19, 2020. A small interactive session against Day Scholar Students, members of ACC, and professional counselor (Mr. Emerson Scott) was conducted to promote bonding between the day scholar students and the faculty on February 16, 2020. An event was organized in the presence of newly appointed Director Prof. Sudhir Kumar Barai which included a musical performance by twin brothers Mr. Sagar Verma and Mr. Srijan Verma on February 9, 2020. During the pandemic, ACC conducted a webinar on July 13, 2020 to interact and answer all the queries of Ph.D. students.

## Symposium on LaTeX and MATLAB

A one-day symposium on LaTeX and MATLAB was organized on February 02, 2020 by the Department of Mathematics. Prof Devendra Kumar and Dr Sangita Yadav were the resource persons for the session on LaTeX, while Dr Shivi Agarwal and Dr Trilok Mathur were the resource persons for the session on MATLAB. LaTeX is the principle standard typesetting package for producing professional quality articles, thesis, books, etc while MATLAB can be used as a computing tool for several real world applications.

# Academia: a confluence of ideas

Seminars/Conferences

Workshops/Training Programs

Enriching the Learning Experience:

Visits by Faculty

**Dr Rahul Arora, Department of Economics & Finance**, attended a workshop on “Basics of Data Science using Python” held in a virtual mode by FsCongress International Congress on Social Science, Ankara, Turkey and Blue Forskning International Research Society, India during June 15-21, 2020.

**Prof Sangeeta Sharma, Department of Humanities and Social Sciences**, presented a paper titled, "Creativity in Advertising: Developing a model for willingness and believability" in the International Conference on Technology and Business Management (ICTBM-20) in Los Angeles, USA, held during June 12-13, 2020 and also presented a paper on "Depiction of culture through advertising" in 13th Global Studies Conference at Concordia University, Montreal, Canada, during June 4-5, 2020.

**Dr Sunil Kumar Dubey, Department of Pharmacy**, conducted a workshop on “PKPD Modelling and Simulation”, UGC-SAP (DRS-II) Sponsored International Seminar-Cum-Workshop on “New Paradigms in Drug Discovery and Delivery Research” in Punjabi University, Patiala during February 26-27, 2020.

**Dr Rajesh Kumar, Department of Computer Science and Information systems**, presented a paper titled, "SecSafe: A model based safety-security risk analysis framework for interconnected architectures" at the 14th International Conference on Critical Infrastructures, SRI International, Arlington, Virginia, USA during March 16-17, 2020.

**Prof Pushp Lata, Department of Humanities & Social Sciences**, took part as a panelist in an online Panel Discussion on “English for Engineers: Curriculum Redesigning for ELTAI webinar Session 3” on May 10, 2020. She also conducted an online webinar as a resource person for online FDP on ICT and Innovative Teaching Strategies at Amity Institute of English Studies and Research, Amity University, Noida on May 12, 2020. Apart from that, she conducted an online webinar on “Assessment Literacy: Challenges and Innovations”

for ELTAI -Coimbatore Chapter for the International Faculty Development Program held during 18-20 June 2020 at PSG College of Technology, Coimbatore. She also conducted an online webinar on English for Career Development on July 8, 2020 as a part of Faculty Development Program on “Creating a Paradigm Shift: Strategies and Adaptations to Encourage Quality Teaching” organized by the Department of English, Saranathan College of Engineering, Trichy during July 6-8, 2020.

## Invited Lectures by Faculty

**Dr S. Murugesan, Department of Pharmacy**, delivered an invited talk on “Computational approaches for the identification of potential inhibitor for the SARS – CoV2 from the Natural product databases” at AICTE Sponsored One-week Short Term Training Programme (STTP) on “Recent advances in Drug Discovery, Development and Lead Optimization” through virtual media organized by the Department of Pharmaceutical Chemistry, JSS College of Pharmacy, Ooty, Tamil Nadu, India during August 10-15, 2020. Prof Murugesan also delivered an invited talk on “Applications of molecular modeling tools in preliminary investigation of anti-leishmanial drug discovery” at DBT, IEE, EMB sponsored three days e-Workshop on “Docking, QSAR and Molecular Dynamics” organized by Ramaiah Institute of Technology, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Ramaiah University of Applied Sciences, Bengaluru, Karnataka during July 29-31, 2020.

**Dr Saikishor Jangiti, Department of Computer Science and Information Systems**, delivered a talk on "Recent trends in Reinforcement Learning" at SRM Institute of Science and Technology, Kattankulathur, Chennai on July 24, 2020.

**Prof Poonam Goyal, Department of Computer Science and Information Systems**, delivered a keynote in a session on “Tomorrow’s threats today, the future of cybersecurity” at Rajasthan CyberComm 2020, Jaipur on January 28, 2020.

**Prof Navin Singh, Department of Physics**, delivered a webinar talk on “The DNA molecule: A physicist’s perspective” organized by Department of Physics, IIT(ISM) Dhanbad on July 13, 2020 and also delivered a talk on “Peyrard Bishop model and DNA melting” at the Department of Physics, Banaras Hindu University, Varanasi on February 15, 2020.

**Prof Shamsher Bahadur Singh, Department of Civil Engineering**, delivered an expert talk on “FRP and Engineered Cementitious Composites for Resilient and Efficient Framed Structures for Smart City Development,” during July 10-11, 2020 and also delivered an expert lecture on “Application of Advanced Composite Materials for Structures,” at the Webinar conducted by Enliven Archive on April 28, 2020. Prof Singh also delivered a keynote lecture at 3rd International Conference on Innovative Technologies for Clean and Sustainable Development at NITTR Chandigarh held during February 19-21, 2020.

**Prof Sangeeta Sharma, Department of Humanities and Social Sciences**, delivered a talk on “Gender bias and stereotyping, Gender equality and women’s rights.” This guest lecture was organized by MNIT Jaipur and IIIT Kota’s Women cell on June 17, 2020. She also delivered a talk on “Improving Communication Competence through Soft Skills” at MNIT Jaipur on February 20, 2020.

**Dr Sunil Kumar Dubey, Department of Pharmacy**, delivered an industrial talk on the topic “Role of Liquid Chromatography Mass Spectrometry in Drug Discovery and Drug Development” at CEG Test and Research Centre Jaipur on February 6, 2020 and a talk on the topic “Pharmacokinetic and Pharmacodynamic Modelling and Simulation” at Babaria Institute of Technology, Vadodara on January 22, 2020. He also delivered a talk on the topic of “BCS and In-vitro In-vivo correlation (IVIVC)” in a two-day workshop on Pharmacokinetics and Pharmacodynamics Modeling and Simulation, at BITS Pilani in collaboration with University of Maryland School of Pharmacy during February 24-25, 2020.

He was also invited as a resource person for “Pharmacokinetics: A key player in personalized medicine”, in an International Conference on “Personalized Medicine: Concept and Role Players” Era University, Lucknow during February 9-20, 2020 and as a resource person for “Faculty Development Programme” sponsored by All India Council for Technical Education, New Delhi, Technocrats Institute of Technology-Pharmacy, Bhopal on January 24, 2020.

**Dr. J. Jennifer Ranjani, Department of Computer Science and Information Systems**, delivered a webinar titled, “LaTeX and Overleaf – Powerful tools for writing Research Articles” organized by Ramco Institute of Technology in association with RIT-ISTE & IIC on June 8, 2020 and also delivered a webinar titled, “Manuscript Preparation using Smart Tools -s and Overleaf” organized

by Sathyabama Institute of Science and technology on May 26, 2020.

**Dr Amit Jain, Department of Chemical Engineering**, delivered a talk on "Biosurfactant production by *Pseudomonas aeruginosa* using EPA priority pollutant Waste Engine Oil as substrate and its oil recovery application" at the Department of Chemical Engineering, Motilal Nehru National Institute of Technology (MNNIT), Allahabad, India on February 15, 2020.

**Dr Rahul Arora, Department of Economics & Finance**, delivered three lectures on “CGE Models in International Economic Analysis” in a short-term course for the faculty members on Advanced Techniques in Economics Research conducted by Department of Economics, Panjab University, Chandigarh during January 15-21, 2020.

**Dr Sailaja Nandigama Department of Humanities and Social Sciences**, delivered a keynote speech at the National Seminar on "Tribal Development" at the School of Social Sciences, Jaipur National University, Jaipur on January 11, 2020.

**Prof Raj Kumar Gupta, Department of Physics**, has delivered an invited lecture, as a Chief guest, titled, "Scanning Probe Microscope: Imaging and Beyond" in Advanced Functional Materials, Characterization and applications", held at MNIT, Jaipur, TEQIP-III Programme on February 29, 2020. He also delivered an online invited lecture titled "Selected Topics in Modern Optics" conducted by Mody University, Lakshmangarh on June 22, 2020.



**Prof V. Manjuladevi, Department of Physics**, delivered an online invited talk titled, "Electro-optic response of Liquid crystal doped with nanomaterials" in Online 7 Days FDP on Recent Trends in Materials Science and Engineering, organized by Department of Physics, School of Basic Sciences and Research, Sharda University Greater Noida during 25-31 May, 2020.

## Accolades and Achievements: Academic attainments of faculty

**Dr. J. Jennifer Ranjani, Department of Computer Science and Information Systems and Sreelakshmi K.K (2018H1030130P)**, received the Springer sponsored Best Paper Award for their paper titled, “A Non-Invasive approach for Driver Drowsiness Detection using Convolutional Neural Networks”, presented at the 8th International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA 2020), at NIT Surathkal during January 4-5, 2020.

**Dr Sunil Kumar Dubey, Department of Pharmacy**, was designated as Bentham Ambassador for the Year 2020-2021. Their research work titled, “Design, Synthesis and Neuroprotective Potency of Self-Assembling Memantine-Docosahexaenoic Acid Conjugate Nanomedicine for the Effective Treatment of Alzheimer’s Disease” was selected in ISTAART Student Science Spotlight program in Alzheimer’s Association of International Conference (AAIC) a virtual conference during July 27-31, 2020.

**Prof Suresh Kumar, Department of Mathematics**, has been selected as a Visiting Associate at IUCAA, Pune for a period of three years during August 1, 2020 to July 31, 2023.

**Prof Shamsheer Bahadur Singh, Department of Civil Engineering**, along with PhD Scholars **Himanshu Chawla(2010PH43412P)**, and **Sudhir Vummadiseti**

**(2014PHXF0409P)** has received a patent titled, “A Loading Test Apparatus and Method Thereof”. The patent deals with fabrication of a test apparatus for conducting testing on a thin composite plate under in-plane shear load conditions and/or combined in-plane shear and uni-axial compression loads. Through this apparatus, researchers will be able to experimentally predict the buckling load, post-buckling strength, and post-buckling response under in-plane shear and/or combined in-plane shear and uni-axial compression loads with in-plane shear load at one edge only. He was also selected as a Member of Sectional Committee as Reviewer of MHRD Scheme, Global Initiative on Academic Network (GIAN) on January 01, 2020.

**Prof Kumar Neeraj Sachdev, Department of Humanities and Social Sciences**, won the best paper award for the paper titled, “An Analysis of an Ethical Conflict in Seller-Buyer Relationship in the Marketplace: A Philosophical Perspective” in the International Conference on Research in Business (ICRB 2020) on Together towards Tomorrow: Tapping the Tempo held at India International Centre, New Delhi, India on February 16, 2020.



## Distinguished Lectures

- Mr. Kundan Kanskar, Founder Save Child Beggars, delivered a lecture on "Role of Youth in Nation Building" in the Department of Humanities and Social Sciences on January 12, 2020.
- Mr. Shashank Murali, CEO and Co-founder Tap Chief, delivered a lecture on "Team building in a Start-up" in the Department of Management on April 20, 2020.
- Mr. K. S. Vishwanathan, Vice President - Industry Initiatives, NASSCOM, delivered a lecture on "Reimagining the Sales function in New Normal" in the Department of Management on June 19, 2020.
- Dr. Kanak Madrecha, Principal Consultant/ Managing Director (Dr Kanak Madrecha & Associates FZ LLE), delivered a lecture on "Making Organizations world class using Excellence Award Models" in the Department of Management on July 4, 2020.
- Mr. Prashant Gahlan, Manager, KPMG. delivered a lecture on "Trade, Customs Regulatory Processes, Ports infrastructure Development and Logistics", in the Department of Management on July 11, 2020.
- Mr. Parag Agarwal, Head of Global Marketing & NPD at Hero MotoCorp Ltd., delivered a lecture on "Motoring ahead during the Crises" in the Department of Management on July 18, 2020.
- Mr. Sunil Bharadwaj, DGM (Strategy and Supply Chain Management), Raymond Limited, delivered a lecture on "Impact of COVID 19 on Supply Chain Management", in the Department of Management on July 19, 2020.
- Mr. Jayant Sewak, Knowledge Expert – Product Development & Procurement Practice at McKinsey & Company, Chicago, delivered a lecture on "Management Consulting and effective use of 2 years' time during MBA", in the Department of Management on July 25, 2020.
- Mr. Rohith Ananth, Business Analyst at Bombardier, delivered a lecture on "Adapting to changes due to COVID-19 & skill sets required", in the Department of Management on July 26, 2020.
- Mr. Deepak Gadhia, Chairman, Sunrise CSP Pvt. Ltd. delivered series of lectures on "Development of Concentrating Solar Thermal Collector" in the Department of Mechanical Engineering during February, 17- 21, 2020.
- Dr. David James, MD Labosport, UK, delivered a lecture on "Application of Technology in sports performance" in the Department of Mechanical Engineering on June 20, 2020.
- Mr. Anil Kumar, MD Great Sportstech Ltd. India, delivered a talk on "Quality assessment of synthetic sports flooring" in the Department of Mechanical Engineering on June 20, 2020.
- Mr. Rishi Gupta, Application Scientist for Characterization division at Anton Paar India Pvt. Ltd., delivered a lecture on "Basics of Gas Sorption Analysis (BET surface area analysis and Catalyst characterization)" in the Department of Chemical Engineering on May 20, 2020.

## Significant projects

| PI/Co-PI and Name of Department   | Title of the Project   | Funding Agency  | Amount          | Duration (Months) |
|---|--|---|-----------------|-------------------|
| Prof. S.B. Singh<br>Department of Civil Engineering   | Fire Resistance Guidelines for Hybrid FRP Structural Components made of Cellulose Fibers Derived from Agricultural Waste;  | Sponsored by University of Nebraska at Omaha: Partnership-2020 for Enhancing US-India Collaboration between Michigan State University (MSU), BITS Pilani, and IIT Delhi | US\$1,36,878.03 | 16                |
| Prof A K Das - PI<br>Biological Sciences ,BITS Pilani<br>K K Birla Goa Campus-Co-PI<br>BITS Pilani Hyderabad Campus-Co-PI<br>Medical College & Hospital, Kolkata-<br>Collaborator | 28S Ribosomal RNA capture assay for the sensitive detection of plasmodium vivax  | ICMR  | 80,02,556.00    | 36                |
| Dr. Vankatesh Kadbur Prabhakar Rao-PI<br>Dr. Sujan Yunuganti-Co-PI  | Design and Development of MEMS gyroscope for naval applications  | DRDO (NRB)  | 46,69,000.00    | 36                |
| Prof R K Roy<br>Department of Chemistry   | Investigating the correlation between thermodynamic and kinetic parameters through density functional reactivity theory (DFRT) based approach                                  | SERB-CRG  | 41,28,885.00    | 36                |
| Dr Rajeev Taliyan-PI<br>Dr Sunil Kumar Dubey, Co-PI<br>Department of Pharmacy   | Exploring the mechanism(s) of gut microbiota link to Parkinson Disease pathology and its reversal based on fibroblast growth factor 21 gene delivery through lentivirus system | ICMR  | 41,00,000.00    | 36                |
| Dr Anupama Mittal<br>Department of Pharmacy   | Peptide-tethered multifunctional cationic nanocomplexes for delivery of IL-1 receptor antagonist for treatment of type 2 diabetes mellitus                                     | SERB-CRG  | 40,46,950.00    | 36                |
| Dr Meetha V. Shenoy-PI<br>Dr Nitin Chaturvedi-Co-PI<br>Department of EEE  | Design and Development of Soft robotic system for selective harvesting of coffee cherries  | DST-SYST  | 39,77,600.00    | 36                |
| Dr Syamantak Majumder-PI<br>Dr. Shibasish Chowdhury-Co-PI<br>Department of Biological Sciences  | Enhancer of Zeste Homolog-2 role in Glomerular endothelial Dysfunction during Diabetic nephropathy   | DBT   | 33,47,120.00    | 24                |
| Prof K.S. Sangwan<br>Department of Mechanical Engineering   | Skill Development Project  | Mitutoyo South Asia Pvt. Ltd - Under CSR Initiative   | 33,00,000.00    | 48                |
| Dr Aakash Chand Rai<br>Department of Mechanical Engineering   | Development of a reliable, low-cost, portable, IOT-enabled optical device for measuring PM2.5 concentration in air   | DST-TDP   | 26,99,645.00    | 24                |
| Dr Somak Chaterjee-PI<br>Dr Etika Krishna Chaitanya-Co-PI<br>Department of Chemical Engineering   | Design and Development of inline sensor for lead Ion Detection   | MKS Vision USA  | 26,17,000.00    | 12                |
| Dr Pratik Kala<br>Department of Mechanical Engineering  | Development of Conductive FDM based rapid tooling for EDM electrode fabrication: Application in Medical implant Manufacturing  | SERB-CRG  | 21,69,101.00    | 36                |
| Dr Devendra Kumar<br>Department of Mathematics  | Development of Uniformly Convergent methods for two-parameter singularly perturbed boundary value problems   | SERB-CRG  | 16,87,400.00    | 36                |
| Dr Aniruddha Roy<br>Department of Pharmacy  | Development of a Triggered Release Nano-Formulation for Combined Chemo-Immunotherapy of Cancer   | Shastri Institutional Collaborative Research Grant (SICRG)  | 10,00,000.00    | 24                |
| Prof Anil Kumar<br>Department of Chemistry  | Targeting the RNA-dependent RNA polymerase (RdRp) of SARS-COV2 for the development of inhibitors   | SERB  | 5,77,500.00     | 12                |

# Student Events

## Nirmaan

Nirmaan, a voluntary organization initiated by BITS, Pilani students in 2005 works in the areas of education, livelihoods and social leadership. Nirmaan organized various activities for social upliftment in the second semester 2019-2020. Some of the notable ones include admission of six kids to private schools, formerly studying in government schools, was facilitated through the Right to Education Act. Nirmaan also organized a martial arts workshop for girls at National Public School, Baas village. The workshop covered topics on women empowerment, women's rights, etc.

During the lockdown, women beneficiaries of Unnati stitching centre were offered financial assistance for their family's primary livelihood. The voluntary organization conducted awareness drives on Youth Employment through which four candidates from the local community were selected. They were trained in Hotel Management virtually with the help of Pratham, a pioneer in the field of NGOs. A water conservation drive for school going kids was conducted in Baas village, as a part of Pre-Apogee Events. Apart from this, Survey and Mapping, of Natt Basti, was done. The survey collected information on occupation, family size and education levels of the residents. Ayushman Bharat Yojna, which provides free healthcare facilities, and the proper documentation required to avail its benefits.



## Blood donation Camp 2020

The 39th Annual Blood donation Camp 2020 was jointly organized by NSS BITS Pilani & Indian Red Cross Society, during February 8-9, 2020. The camp was inaugurated by the Vice-Chancellor, Prof Souvik Bhattacharyya and the Director, Prof Sudhirkumar Barai. The camp received an overwhelming response from faculty and student community as well as the residents of Pilani. The camp had a participation of more than 150 volunteers and saw a footfall of more than 1000 willing donors which eventually led to a total of 641 units being collected, which had the potential of saving 1923 lives.

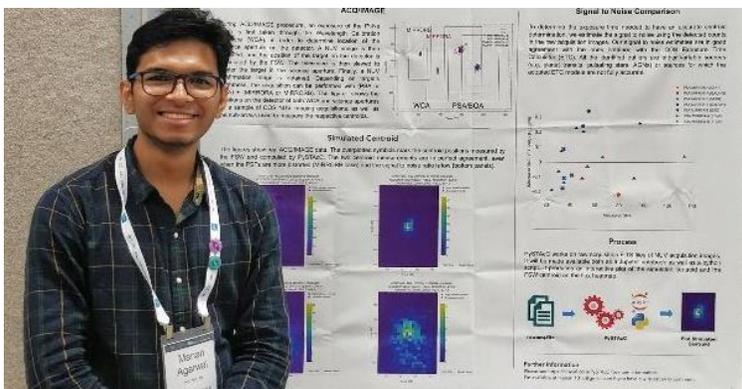


## Sports Day

NSS organized Sports Day for the students of NSS School and EPD on January 19, 2020. A lot of recreation activities along with sports and games were organized. The games included football, lemon spoon race, long jump, basketball, sack race, 100m race and many more events for the various classes of the students to make the event inclusive and enjoyable for all. The event concluded with distribution of certificates to the winners and participants by Prof. Chandra Shekhar and Dr Krishnendra Shekhawat.



**Manan Agarwal (2016B5A70607P)** presented a Scientific Poster in the American Astronomical Society (AAS) 235th Conference in Honolulu, Hawaii, USA on January 7, 2020.



**Vishnupriya Srivastava (2017ABPS0325P)** has been awarded the Student Scholarship to attend the Grace

Hopper Celebration of Women in Computing India(GHCI)'20 conference.



**Abhinav Sanjay Swami (2018B5A30943P)**, speaker at the ISRO Webinar on "Unlocking India's potential in the Space Sector" represented BITS Pilani on August 20, 2020.

**Anirudh Srinivasan Chakravarthy(2017A7TS1195P), Honnesh Rohmetra (2016B2A70770P), Divyam Goel(2017A7TS1196P), Harshan Baskar(2018A7PS0166P) and Prateek Garg(2018A3PS0412P)** of Sally Robotics, is a student lead research group working at the Centre for Robotics and Intelligent Systems (CRIS), BITS Pilani on all facets of autonomous driving under the guidance of faculty

members. This year, the team published a research paper titled "Complete Scene Parsing for Autonomous Navigation in Unstructured Environments" at the IEEE International Conference on Intelligent Autonomous Systems at NTU, Singapore examining the applicability of Computer Vision networks for unstructured Indian environments.

**Shalvi Shukla (2017B2A40590P), Anirudh Srinivasan Chakravarthy (2017A7PS1195P)** were the winners of



Schneider Electric's Go Green 2020 Global Competition. They were selected as winners for the Greater India Region. Their idea SmartEye, is an AI and Computer Vision based technology platform for making buildings smarter and energy neutral. They competed with more than 1000 teams from all the top universities.

**Arihant Jain,(2017B3A30695P)**, was recognized as one of India's brightest engineering minds by Economic Times in ET Campus Stars for their 2019-20 edition during September 2019 to March 2020 across India. The 6-months long and 4-phase competition provided a quantifiable way of assessing over 49,000+ applicants from over 2000+ engineering colleges across India. The final phase of the program was virtual face-to-face interaction with a Jury member. The Jury comprised leaders and CXOs of various esteemed organizations.



**Ms. Neelakshi sharma (2016PHXF0008P) and Ms. Gurpreet Kaur (2018PHXF0010P)** participated in an online presentation competition on the topic "Refractories, advanced ceramics and glasses" organized by Indian Ceramic Society, Jamshedpur. This competition was organized under the theme of "Aatmanirbhar Bharat Abhiyan: Challenges and opportunities for refractory industry" on July 18, 2020.

Neelakshi stood 2nd and won a cash prize of Rs. 15000 and Gurpreet featured in top ten and won a cash prize of Rs.2500.

### Prime Minister Fellowship for Doctoral Research

**Shital Patil (2018PHXF0029P)** of the Department of Mechanical Engineering has been selected for the prestigious Prime Minister Fellowship for Doctoral Research with industry partner National Engineering Industries Limited. This is a unique scholarship scheme of Science and Engineering Research Board, Department of Science and Technology, Government of India, coordinated by the Federation of Indian Chambers of Commerce and Industry (FICCI). He is the first BITSian to receive this prestigious fellowship. He is pursuing his research under the guidance of Dr Amol M Marathe and Dr Arun Kumar Jalan.

**Shivam Soni (2017D2PS1238P) and Nishtha Pareek (2019B1PS1044P)** of the startup "UrbanStack" secured 1st Runner-up in the Final Phase Competition of *Be a Road Hero Hackathon on Road Safety* organized by Indian Road Safety Campaign, Electrical Engineering Society IIT Delhi, Hero MotoCorp and Hindustan Times on February 15, 2020. The event was graced by Dr S Rajesh, Director, Niti Aayog; Mr. S.K Mishra, Road Safety Enforcement, Ministry of Road Transport and Highways, Government of India; Shri L Kuttiraja, Deputy Director, MoRTH, Government of India; Ms Shipra Gupta, Youth Development Professional, United Nations Volunteer (UNV) as esteemed Jury.

Shivam Soni (2017D2PS1238P) and Nishtha Pareek (2019B1PS1044P)



## Introducing new faculty

| S.No. | Name                 | Designation         | Discipline   |  |
|-------|----------------------|---------------------|--|--|
| 1.    | Dr Vinti Agarwal     | Assistant Professor | Department of Computer Science & Information Systems |   |
| 2     | Dr L. Rajya Lakshmi  | Assistant Professor | Department of Computer Science & Information Systems |   |
| 3     | Dr Saikishor Jangiti | Assistant Professor | Department of Computer Science & Information Systems |   |
| 4     | Dr Achint Nigam      | Assistant Professor | Department of Management                             |  |

## Editorial team

**Editor:** Prof Sushila Shekhawat

**Student Members:** Akashdeep Dwivedi and Rajdeep Basu

**Special Thanks:** Prof G.S. Chauhan, Faculty Incharge and  
Mr. Ramesh Sharma, Publications and Media Relations

# BITS Pilani Pilani Campus

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