



**BITS Pilani**  
Pilani Campus

Semester-II notes 2017-18

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Pilani Campus





# editorial

New levels of excellence and success marked the beginning of the first semester 2018-19, yet another crucial semester. Commencing with the convocation ceremony of 1307 graduating students and the admission of 12 board toppers of their respective states, it was a wonderful amalgamation of multifaceted events, visits, honors and awards. BITS, Pilani's journey towards excellence being conferred the title of an 'Institute of Eminence' by the Ministry of Human Resource Development; Government of India is one of the significant achievements.



Efforts of the faculty and the institute to bring together scholars from across the country and the world were visible in their efforts to organize several conferences and workshops such as the National Workshop on Improving Synergy between Teaching and Research in Indian Academia (ISTRIA-2018), the Workshop on "Condition Monitoring & NVH", the International Conference on Media, Culture and Ethics 2018, the International Conference on Advances in Concrete, Structural & Geotechnical Engineering (ACSGE- 2018), etc.

The 67<sup>th</sup> Founder's Day, the International Yoga Day, and the World Book and Copyright Day saw the institute recognise them with events that had great turnout from faculty and students alike. The Peacock Restoration Team conducted workshops and celebrated the World Sparrow Day with several entertaining events.



Several faculty members visited national and international universities for collaborations, conferences, to deliver lectures and conduct workshops. A large number of students at various levels brought accolades to the institute. Student fests like Apogee and Interface were the occasions where several renowned professionals from various academic fields delivered inspiring talks. The unflinching desire of the students to work for the society through their NSS and NIRMAAN activities is yet another dimension that deserves mention.



Hence, it was an eventful semester keeping up the legacy of excellence in academic as well as non-academic activities. Hope you enjoy reading some of the achievements and milestones of the semester.

## Convocation - 2018

The Convocation Ceremony was organized on July 25, 2018 in which 1,307 students received their degrees, comprising of 1,044 First Degree, 243 Higher Degree, and 20 Ph.D. Mr Murtaza Haidary (B.E. Hons. Chemical Engineering) received the Gold medal, Mr Anirudh Kumar Bansal (B.E. Hons. Computer Science) received the Silver medal and Mr Siddharth K (B.E. Hons. EEE) received the Bronze medal.

► Convocation 2018



The Distinguished Alumnus Award ceremony was also held during the convocation. This year's winners were Prof Arun K Somani (Anson Martin Distinguished Professor of Electrical and Computer Engineering, Iowa State University, USA), Mr Anupendra Sharma (Global VP of Growth and Business Development at Siemens Healthneers within Enterprise Services, USA) and Mr Tushar Jain (Founder Automat Irrigations and Founder Automat Foundation Trust).

The Vice-Chancellor, Prof Souvik Bhattacharyya in his address, mentioned that BITS Pilani offers the best in class graduates to the nation and the world. He also emphasized that the success of students is at the forefront of everything and that the nation trusts the institute's ability to create and mentor the country's best industry professionals, entrepreneurs, and researchers. The Director, Prof Ashoke K. Sarkar, presented a detailed report of BITS Pilani campus and said that in any university, teaching and research goes hand in hand. The Dean Administration, Prof S.K. Verma delivered the vote of thanks to wrap up the poignant occasion.

► Prof Souvik Bhattacharyya addressing the graduates



## Interaction with Distinguished Alumni Award Winners 2018

BITS Pilani organized an interactive session with Distinguished Alumni Award winners - 2018 on July 24, 2018. The event was hosted by the Dean of Alumni Affairs Prof Arya Kumar, Vice-Chancellor, Prof Souvik Bhattacharyya and Director, Prof Ashoke K. Sarkar graced the occasion. Prof Arya Kumar shared stories of how the winners were an inspiration for generations to come. Prof Bhattacharyya said that BITS Pilani had remarkable alumni across the globe and emphasized that the alumni ought to establish a concrete leadership to help the institute. Prof Ashoke K. Sarkar expressed the joy he got when he saw students of BITS doing well. He went on to say that to achieve certain goals, it is imperative that alumni share their ideas and suggestions with the institute.

One of the three aforementioned winners, Prof Arun K Somani came to BITS in 1968 as an engineering student. He is now associated with the Iowa State



Prof. Arun K Somani

Mr. Anupendra Sharma

Mr. Tushar Jain

University, where he teaches courses such as Digital Audit Design. Mr Anupendra Sharma, the founding member of BITSAA, and the Center for Entrepreneurial Leadership (CEL) fell in love with economics at BITS and joined Manchester Business School in the UK. Mr Tushar Jain, currently working in a project under the Modi Government, said he wanted to be an investment banker, but ended up an entrepreneur. He recollected his experiences at BITS and said the institute gave a holistic education which aims for academic excellence, leadership qualities, and empathy.

## 67<sup>th</sup> Founder's Day

BITS Pilani celebrated its 67<sup>th</sup> Founder's Day on January 22, 2018. Held on Basant Panchami since 1954, the event lasted an entire day, and saw large student and faculty turnout. The Vice-Chancellor, Prof Souvik Bhattacharyya, the Director, Prof Ashoke K. Sarkar, and the Dean Administration, Prof Sivasubramanian began the event with floral tributes at the founder's statue.





Ragamalika organized the Thyagaraja Aradhana Program, reciting beautiful classical Krithis of Saint Thyagaraja's and the cultural event in the evening. This was followed by musical performances by seventeen different regional associations, exhibiting the diversity of different states of India. Five non-teaching staff, who were to retire this year, were felicitated. In addition, 16 awards were given to select non-teaching staff for their outstanding achievements and significant contributions.

► Thyagaraja Aradhana Program



## Orientation 2018

The Orientation Program for newly admitted students was held on July 31, 2018. The Vice-Chancellor, Prof Souvik Bhattacharyya spoke on how the day was all about students who "have come to BITS to excel, to develop as a complete individual, to innovate, to contribute to the nation and above all to make a difference as a good human being". The Director, Prof Ashoke K. Sarkar welcomed the students and their parents, whom he encouraged to think innovatively to help their wards succeed and develop as a bright future of the nation.

The Dean Academic Undergraduate Studies, Prof Ajit Pratap Singh spoke on teaching and learning at BITS, while the Acting Registrar, Prof S.C. Sivasubramanian gave insights into the Academic Processes at BITS. Prof P. Srinivasan, Associate Dean, Practice School Division addressed the students on the importance of the institute's renowned Practice School system. The Chief Warden, Prof Shibasish Chowdhury and Prof Devika spoke about Balancing Academics with Extracurricular Life. The respective Associate Deans of ARCD and ID, Prof B.K. Rout and Prof S. Routroy gave information about registration and the time table.

► Vice-chancellor's address



## International Yoga Day

The 4<sup>th</sup> International Yoga Day was celebrated at BITS Pilani on June 21, 2018. The Director, Prof Ashoke K. Sarkar, several eminent professors, students, staff and their families participated in the event. Mr Dinesh Kumar, a PhD scholar who is well known for his expertise in Yoga, conducted a yoga session and spoke about the benefits of yoga. Participants were given certificates for their attendance. An online essay competition was earlier organized for students on the "Effects of Yoga on Physical and Mental Health" and three students were given certificates.

► International Yoga Day



## Peacock Restoration Team

The Peacock Restoration Team organized workshops titled "First Aid for Birds and Preparation and Installation of Bird Nest Boxes" on January 22-23, 2018. The President of the Indian Biodiversity Conservation Society, Dr Sonika Khushwaha and the Secretary Dr Akhilesh Kumar conducted the workshops. The speakers took a bird walk around the campus and appreciated the biodiversity of birds.

A Nest Box making workshop for children of staff was organised on February 17, 2018, and witnessed approximately 25 children preparing nest boxes for sparrows. Dr Pankaj Kumar Sharma, Department of Biological Sciences recited the little enthusiasts an interesting bird story, after which they took the nest boxes home.

► Peacock Restoration & First Aid for Birds



Events were organized on *The World Sparrow Day* on March 20, 2018. Creative performances by young children from class 1 to 10 such as skits, dances and songs were conducted. A storytelling competition on the theme of sparrows and a few



games were also a part of the event. The event concluded with a bird origami workshop. Gifts and, prizes including books and earthen nest boxes for sparrows, were distributed to children.

► World Sparrow Day



The team, supported by the Director, Prof Ashoke K. Sarkar has been working on the “Birds @BITS” webpage, which contains basic information about all the birds that can be found on campus.

### Koffee with Profs – An ACC event

The Academic Counselling Cell (ACC) organized the 4<sup>th</sup> edition of Koffee with Profs on March 27, 2018, which had the participation of about 150 students. A new fun event called "Ask your Prof" was introduced, wherein Professors were asked interesting and fun questions which they had to answer, but not necessarily in earnest. The Vice-Chancellor and the Director shared stories that amused the gathering.

► Koffee with Profs



### IPCD, BITS Pilani

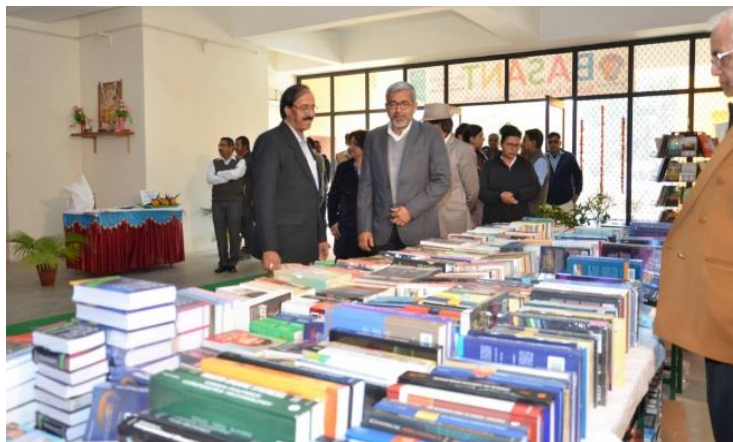


Making further inroads in terms of collaborative participation in research and teaching, a Memorandum of Understanding was signed on February 23, 2018 with Trinity College Dublin, Ireland aiming to strengthen educational and research linkages, and the exchange of faculty and students with the aim of achieving state-of-the-art infrastructure facilities in various fields of engineering and science.

### Basant Book Festival 2018

The Basant Book Festival - 2018 was organised on January 29, 2018. The event was inaugurated by the Director, Prof Ashoke K. Sarkar and organized under the supervision of Mr Giridhar Kunkur, Librarian and Chief, Publications and Media Relations Unit.

► Basant Book Festival



The Dean Academic Research, Prof S.K. Verma, the Estate Manager Col. Bhataya, Prof Surekha Bhanot, and several students attended the event. Nearly 26000 books, covering areas such as Science, Technology, Engineering, History, Social Sciences, Literature, Biography, Fiction, Dictionaries, Encyclopedias, Children’s Books, and on General Readings were on display in the book festival. A musical program was also organized by Gurukul during the event.

### World Book and Copyright Day

The World Book and Copyright Day on the 23<sup>rd</sup> of every April (to signify the passing of Shakespeare and Cervantes) is a celebration of authors, illustrators, books and the joys of reading. This year’s edition was entitled “READING, it’s my right” and its purpose was to encourage everyone to access books.

► World Book and Copyright Day



To celebrate this day, the BITS Library planned a series of events including a fancy-dress event for children, a discussion platform for BITSians to think out of box and come out with their



ideas, and a reading challenge that spanned a month's time. In order to raise awareness about Indian Literature, the Library also organized a display gallery in the lobby with Gyanpeeth awardees and their famous works on display. Alongside, a collection of rare books was on display.

## National Workshop on Improving Synergy between Teaching and Research in Indian Academia (ISTRIA-2018)

The Teaching Learning Centre (TLC) at BITS Pilani organized a Two-Day National Workshop on "Improving Synergy between Teaching and Research in Indian Academia" with an aim to provide a platform where academicians can share their research-based experiences on how to synergize teaching and research and also to listen to and interact with leading experts in this area.

► ISTRIA-2018



During the inauguration, the Vice-Chancellor, Prof Souvik Bhattacharyya gave insights on the various perspectives of teaching and scholarships. The Director, Prof Ashoke K. Sarkar talked about the purpose of conducting such workshops.

He said teaching and research are two verticals lines and one has to develop a technique to get research in classrooms. The faculty-in-charge of the TLC, Prof Sanjiv Kumar Choudhary spoke to the audience on the theme of the workshop.

In the keynote address, Dr Mangala Sunder Krishnan, of the Department of Chemistry, spoke on "Technology in Teaching and Learning" i.e. Online Education, e-Learning and Massive resources.



He mentioned how technology helped actively design machine tools and online courses for reaching out to students and shared his experiences in learning and teaching using electronic media. The convener of the workshop, Dr Rajiv Sakhuja, delivered the vote of thanks at the end.

## Workshop on Condition Monitoring & NVH

The Department of Mechanical Engineering organized a two-day workshop on "Condition Monitoring & NVH" [CMNVH 2018] during February 14-15, 2018. The Head of the Department, Prof P. Srinivasan delivered the welcome address and highlighted the theme of the workshop. The Chief Guest Prof Chandramouli P. (IIT Madras) inaugurated the workshop. The Vice-Chancellor, Prof Souvik Bhattacharyya highlighted the importance of Condition Monitoring of automobiles particularly with regard to comfort of passengers, while the Director, Prof Ashoke K. Sarkar emphasized on the significance of Condition Monitoring of the roads. Dr Lokesh Agrawal, Vice-President (R&D), NBC Bearings, Jaipur stressed on the importance of the cost associated with Condition Monitoring in industries, while the Dean of Administration, Prof S.C. Sivasubramanian talked about the noise in spectroscopy in his address to the audience.

► Workshop on Condition Monitoring & NVH



## International Conference on Media, Culture, and Ethics (MCE- 2018)

The International Conference on Media, Culture, and Ethics was held during February 8-9, 2018. The Director of IIMC, Mr Sunit Tandon was the Chief Guest, and the founder of the Pickle Jar Platform, Ms. Vasanthi Hariprakash was the Guest of Honor. The Director, Prof Ashoke K. Sarkar and the Head, Department of Humanities and Social Sciences, Prof Gajendra Singh Chauhan presided over the inaugural ceremony.

► MCE - 2018



The conference was convened by Prof Sangeeta Sharma, who introduced the theme, media, culture and ethics to the audience. Prof Ashoke K. Sarkar emphasized on how the media as a means of communication reflects and creates culture. The inaugural ceremony concluded with the release of the abstract book and the conference proceedings.

The first plenary session was based on clarity, consistency and constancy: “Does brand communication really matter?” The speakers for this session were Professors Falguni Oza, Paurav Shukla and Hemant Gaule. Another plenary session on “Media and its role in Shaping Narratives and Public Agenda” saw Ms. Vasanthi Hariprakash, speaking about the evolution of journalism and the extinction of proof reading, with the advancement of technologies. It was followed by a panel discussion on “Media and Communication” courses for Engineering Students: Opportunities & Challenges.

A session on the “Role of Communication in Creating Compelling Corporations & Communities” was organized, with Professors Sangeeta Bharadwaj, Ravindran, and Sankar Srinivasan. The technical sessions included Films and Literature; Journalism & Political Communication and Organizational Communication.

▶ MCE - 2018



During the valedictory ceremony, Prof Nirupama Prakash, Director Amity Institute of Social Sciences spoke about the role of media, culture and ethics in today’s society. Prof Sangeeta Sharma, convener of the conference thanked all the delegates and team members who had worked for the conference. The Director, Prof Ashoke K. Sarkar appreciated the conference and expressed his desire to see more such events in the future.

## International Conference on Advances in Concrete, Structural & Geotechnical Engineering (ACSGE - 2018)

The second International Conference on “Advances in Concrete, Structural, and Geotechnical engineering” was organized by the Department of Civil Engineering during February 26-28, 2018. The three-day conference had 17 technical sessions with the participation of about 140 delegates in total including 25 keynote speakers. In the inaugural session, the Vice-Chancellor, Prof Souvik Bhattacharyya was the Chief Guest. The Director, Prof Ashoke K. Sarkar, Pilani campus and Prof Ravindra K. Dhir,

Order of British Empire (OBE) and Honorary Professor at University of Birmingham, UK were Guests of Honor.

▶ ACSGE – 2018



## Prof L.K. Maheshwari Foundation Distinguished Alumnus Award Ceremony

Prof L.K. Maheshwari Distinguished Alumnus Award ceremony was held on January 31, 2018. The award was conferred on Prof Arun K. Somani, Distinguished Professor, Dept. of ECE, Iowa State University, Ames, IA, USA for his outstanding contribution in Electrical & Instrumentation Engineering. The Director, Prof Ashoke A. Kumar was the Chief Guest of the ceremony. Prof Navneet Gupta, the Secretary of LKM Foundation and the Head of EEE Department welcomed the guests and informed the audience about the activities of Prof L.K. Maheshwari Foundation Trust.

▶ Prof Arun K. Somani





## BITS Pilani bags Rajasthan IT Day Prize

Rajasthan IT Day was conducted by Rajasthan Government during March 18-21, 2018 in Rajasthan University Campus, Jaipur. As a part of this series, one of the events was EduHack on March 19, 2018. This event gave a unique platform to teachers, professors, lecturers and educationists of Rajasthan state wherein they can demonstrate their path-breaking solutions to improve the education system. Dr Vishal Gupta and Dr Ashutosh Bhatia from Computer Science and Information Systems Department, Pilani Campus participated as a team and received second runner up prize. The title of their presentation was "Blended Learning Model with Flipped Classroom Teaching Pedagogy". They demonstrated a model based on digital technology used by BITS Pilani to improve teaching and learning pedagogy.

► BITS Pilani bags Rajasthan IT Day Prize



## Faculty Excellence Award (BITSAA)

BITS Pilani Alumni Association (BITSAA) gives two awards annually to any full-time faculty member with experience of at least three years of BITS Pilani campuses; Prof S Venkateswaran Award, (INR 1, 00,000) instituted by Mr Karthik Krishna (1993 Batch) in the name Prof S. Venkateswaran, former Director & Vice Chancellor of BITS Pilani to encourage and develop faculty; Prof I.J Nagrath Award, (INR 1, 00,000) in the memory of Prof I.J Nagrath, retired as the Deputy Director after serving at BITS in various roles.

Prof Anil Kumar, Department of Chemistry, Pilani Campus and Prof Srinivas Krishnaswamy, Department of Chemical Engineering, KK Birla Goa Campus have been selected for Prof S Venkateswaran Faculty Excellence Award and Prof I.J Nagrath Faculty Excellence Award, respectively, for the academic year 2017-2018.



Prof Anil Kumar



Prof Srinivas Krishnaswamy

# Academia: a confluence of ideas

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

Prof K.K. Gupta, Department of Electrical and Electronics Engineering, attended a "Symposium on Frontiers of Development in Kigali, Rwanda" fully funded by Royal Academy of Engineering (RAEng), UK during February 12-14, 2018.



Dr Anupam Yadav, Department of Humanities & Social Sciences, attended the 7th ICADA conference on Social Sciences and Interdisciplinary Studies and presented a paper titled "Ecology of Knowledges and Social Justice" at National Institute of Development Administration, Bangkok during May 31 - June 2, 2018.

Dr Ishappa C Bandi, Librarian, attended a National Conference on "Modern Librarianship" (NCML 2018) and presented a paper titled "Productivity Accelerator for Library and Information Professionals: A Model" at National Institute of Fashion Technology (NIFT), Mumbai during June 8-9, 2018.





**Dr Monika Gupta, Department of Economics and Finance,** attended a workshop on Energy and Environmental CGE Modeling with GAMS organised by EcoMod Modeling School in cooperation with the Singapore Institute of Statistics during January 15-19, 2018 and also presented a paper entitled as "Measuring Effectiveness of Carbon Tax on Indian Road Passenger Transport: A System Dynamics Approach" at 41<sup>st</sup> IAEE International Conference in Groningen, Netherlands during June 10-13, 2018.



**Prof Arya Kumar, Department of Economics and Finance,** presented a paper titled 'Global Energy, Environment and Transportation Sector—Issues, Challenges and Future Prospects' which was awarded "Distinguished Research Award in recognition of ingenuity and ground-breaking research" in the International Conference on Business and Economics (ICBE2018) and the same in KODISA International conference in Seoul National University, Seoul, South Korea during June 25-27, 2018.

**Dr Gaurav Dwivedi, Department of Mathematics,** attended the "12<sup>th</sup> AIMS Conference on Dynamical Systems, Differential Equations and Applications" and presented a paper titled "Existence of a solution to a singular semilinear polyharmonic equation with exponential nonlinearity" at National Taiwan University, Taipei City, Taiwan during July 4-9, 2018.

**Prof Abhijit Asati, Department of Electrical and Electronics Engineering,** visited HPLP (High Performance Low Power) Laboratory, Electrical and Computer Engineering Department, University of Virginia (UVa), Charlottesville, USA, as 'Visiting Assistant Professor' and worked on 'Semi-Automated Power Intent VLSI Design Tool' during May 20, 2018 to July 20, 2018.



**Dr. Amit Jain, Department of Chemical Engineering,** attended an International Conference on Chemical and Process Plant Engineering and presented a paper titled "Studies on Closed-loop Interaction in a Multiloop Control System" at Petaling Jaya, Malaysia on July 26, 2018.

**Prof Tamali Bhattacharya from TLC and Prof Manoj Soni, Department of Mechanical Engineering,** conducted ISTE Approved Two-Days Faculty Development Programme on

"Pedagogy for Effective Teaching and Learning" at BRCM College of Engineering & Technology, Bhiwani on April 23-24, 2018.



**Dr. Kamlesh Tiwari, Department of CSIS,** organized an International Workshop on Applied Machine Learning (IWAML-2018) and delivered a series of talks on "Machine Learning" at National Institute of Technical Teacher's Training and Research, Kolkata during February 19-23, 2018 and also attended Microsoft Imagine Cup India Final 2018 as a jury member and Participated in Panel Discussion on "Innovation and Entrepreneurship Centered Around Student" at New Delhi during April 19-20, 2018. He also organized an International Workshop on Applied Deep Learning (IWADL-2018) and delivered a series of talks on "Deep Reinforcement Learning" at Indian Institute of Technology Mandi, Himachal Pradesh during July 16-20, 2018.



**Prof P. Srinivasan, Department of Mechanical Engineering,** conducted two-day training program on "Fatigue, Creep and Fracture related failure of Industrial components and Residual Life assessment" at Hirmi Cements, Raipur during July 21-23, 2018.

## Invited Lectures by Faculty

**Prof S. Murugesan, Department of Pharmacy,** delivered a talk on "Design and study of novel HIV-1 RT inhibitors as anti-HIV agents" at International Conference on Biotechnology: Towards Sustainable Future, organized by Department of Biotechnology, P.S.R. Engineering College, Tamil Nadu on February 1, 2018.

**Prof S.B. Singh, Department of Civil Engineering,** delivered a lecture on "Application of ECC for Masonry Structures" at SVNIT Surat on May 10, 2018 and also delivered lecture at Symposium organized by Team Moments of Civil Engineering Association of NIT Tiruchirappaly, Tamilnadu on March 17, 2018.



**Prof Arya Kumar, Department of Economics and Finance**, delivered expert talk on "Academia Industry Linkage – Need for Strategic R&D and IPR's" in the National Conference on Intellectual Property and Entrepreneurship (NCIPE-2018) organized by IPR Chair, IIT Roorkee on March 19, 2018



**Prof R.K. Gupta, Department of Physics**, delivered an invited talk on "Ultrathin films of nanomaterials and application" and also chaired a session on LEDs in Third International Conference on Nanomaterials in Mahatma Gandhi University, Kottayam on May 11-13, 2018.

**Prof Manjuladevi. V, Department of Physics**, delivered an invited talk on "Nanocomposites of Liquid crystals" and also chaired sessions on Nano for Sensors and Nano for medicines in Third International Conference on Nanomaterials, Mahatma Gandhi University, Kottayam on May 11-13, 2018.

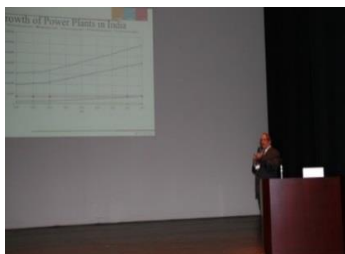


**Dr Kamlesh Tiwari, Department of CSIS** delivered a series of talks on "Machine Learning and Applications" during a Faculty Development Program on "Big Data and Machine Learning" at Biyani Institute of Science and Management, Jaipur, Rajasthan on May 18, 2018.



**Prof P. Srinivasan, Department of Mechanical Engineering**,

delivered a talk on " Internalising the external cost of Power generation from Coal based power plants in India-An approach to promote Renewable based power generation" at the International Symposium on Fuel and Energy (ISFE2018) in Hiroshima University, Japan during July 2-4, 2018.



**Dr Rajesh Kumar, Department of Mathematics**, delivered a Talk on "Numerical Analysis of Finite Volume Schemes for Population Balance Equations" at the National Meeting of the Portuguese Society of Mathematics held at Polytechnic Institute of Braganca, Braganca, Portugal during July 9-11, 2018.

## Accolades and Achievements

**Prof Dalip Kumar, Department of Chemistry** was bestowed upon ISCB Best Teacher Award in Chemical Sciences for year 2018. The award was received by Prof Kumar in the "24th ISCB International Conference (ISCBC-2018) on Frontier Research in Chemistry & Biology Interface, organized by Manipal University Jaipur during January 11-13, 2018.



**Dr Monika Gupta, Department of Economics and Finance** was awarded with Ecomod Scholarship Award (\$1500) to attend EcoMod Modeling School organized by EcoMod Modeling School in cooperation with National University of Singapore (NUS) during January 15-19, 2018.



**Prof Dalip Kumar, Department of Chemistry** was bestowed upon Platinum Jubilee Award Lecture in the Section of Chemical Sciences at 105<sup>th</sup> Session of Indian Science Congress Association (ISCA) held from March 16-20, 2018 at Manipur University, Imphal. The Platinum Jubilee Lectures are organized in each section. These were initiated in the year 1998 to commemorate the Platinum Jubilee of the Indian Science Congress Association.





**Prof Kumar Neeraj Sachdev, Department of Humanities and Social Sciences**, was awarded Best Paper titled “Modern Age

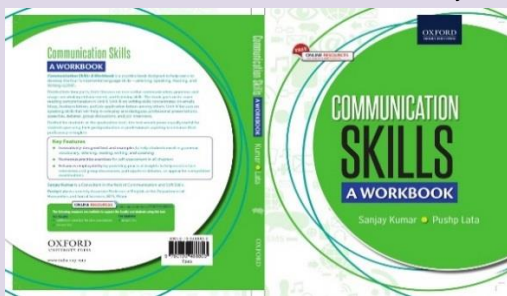
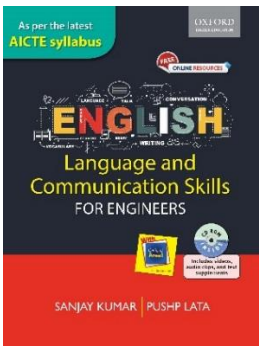
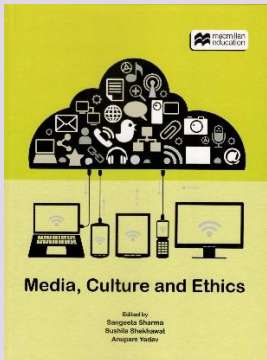


Interventions in Business and Economy: Catches and Keys” in an International Conference on Research in Business (ICRB 2018) held at India International Centre, New Delhi, India on May 20, 2018.

**Prof A.P. Singh, Department of Civil Engineering**, was appointed as one of the experts in the Selection Committee for recruitment of Civil Engineers by Himachal Pradesh Public Service Commission. He was also nominated in the Expert Selection Committee (ESC) for recruitment of Scientists in the Ministry of Environment, Forest and Climate Change. Rajasthan Government has nominated him as a Jury Member for evaluation of R & D projects submitted at Green-a-Thon, July 26-27, 2018.

**Prof Shamsher Bahadur Singh, Department of Civil Engineering** has been selected as Evaluators of Technical Institutions, 2018 by NBA (National Board of Accreditation) and appointed as Editor-in-Chief of Journal of Structural Engineering and Management on May 17, 2018.

## academic attainments of faculty

S.No	Name	Journal / member details
1.	Prof Pushp Lata Department of Humanities and Social Sciences	Published a book titled Communication Skills: Oxford University Press, New Delhi, 2018 
2.	Prof Pushp Lata Department of Humanities and Social Sciences	Published a book titled Language and Communication Skills For Engineers: Oxford University Press, New Delhi, 2018 
3.	Prof Sangeeta Sharma, Prof Sushila Shekhawat and Dr Anupam Yadav Department of Humanities and Social Sciences	Published a book titled Media, Culture and Ethics: MACMILLAN Publishers India, Chennai, 2018 



# Distinguished lectures at BITS Pilani

- Prof Debjyoti Banerjee, Mechanical Engineering Department and Petroleum Engineering Department at Texas A&M University, USA delivered talks on the topic “Nano-Manufacturing for Enhanced Thermal Energy Storage” and “Engineering Education in The Realm of Ethics & Entrepreneurship” on January 3, 2018.
- Dr Debmalya Roy, Additional Director, DRDO Kanpur delivered a lecture on “Nanomaterial development activities at DRDO Kanpur” at the Department of Chemistry, on January 09, 2018.
- Dr Alan M Punnoose, Assistant Professor from Centre for Regenerative Medicine and Stem Cell Research Central Research Facility, Sri Ramachandra Medical College and Research Institute, Porur, Chennai delivered a talk on "Tissue Engineering in the Cardiovascular System - Mending a broken heart" at Department of Biological Sciences, on January 15, 2018.
- Dr. Swati Sharma, leader Advanced Carbon Materials and Devices research group at the Institute of Microstructure Technology, Germany delivered a talk on "Pyrolysis of Polymers: From MEMS/ NEMS to Waste Treatment" at Department of Chemical Engineering on February 5, 2018.
- Prof Santanu Mukherjee, Department of Organic Chemistry, Indian Institute of Science, Bangalore, delivered a lecture on “Hydrogen Bonding – A Simple Solution to Challenging Problems” at the Department of Chemistry on February 26, 2018.
- Prof Deshdeep Sahdev, Prof IIT Kanpur and CEO Quazar Tech Solutions delivered a talk on "Was our Cosmic Dawn Extra - Dimensional?" at Department of Physics on March 26, 2018.
- Mr Ganpati Kamble, Technical Head, Josts Engineering Com Ltd, delivered a talk on the topic “latest Fluid Dynamic imaging techniques used in research and industry” at Department of Chemical Engineering on April 4, 2018.
- Prof Debashis Ghoshal (JNU) and Prof Patrick Das Gupta (DU) delivered a talk on "Rendezvous with Black holes: The Legacy of Stephen Hawking" at Department of Physics on April 7, 2018.
- Dr Dhileep Krishnamurthy, Chief Scientific Officer, Zhejiang NHU Co. Ltd. delivered a lecture on “Importance of Process Research in API industry” at the Department of Chemistry on July 27, 2018.
- Dr Indrashis Bhattacharya, Assistant Professor, Garhwal University delivered a lecture titled “Pubertal Orchestration of Hormones and Testis: Lessons from Rodents to Primates” at Department of Biological Sciences, Rajasthan on July 31, 2018.

## Significant Projects

S.No.	Principal Investigator and Name of the Department	Title of the Project	Funding Agency	Amount and Duration
1.	Prof Shamsher Bahadur Singh (Co-PI) Department of Civil Engineering	Structural Health Assessment and Rehabilitation Framework based on Cyber Physical System, (Multi-institutional and multi-disciplinary project)	DST, New Delhi	INR 70 Lakhs (3 years)
2.	Prof. S. Murugesan, Department of Pharmacy	Development of novel anti-leishmanial analogues loaded with novel nano-formulations	DBT	INR 60 Lakhs (2 Years)
3.	Dr Anupama Mittal Department of Pharmacy	Umbilical cord mesenchymal stem cells derived exosomes as biogenic nanocarriers of miRNA and chemotherapeutic drug for reversal of chemoresistance in breast cancer	DST-NANOMISSION	INR 56.44 Lakhs (3 years)
4.	Prof Deepak Chitkara (PI) Prof Anil Gaikwad (Co-PI) Department of Pharmacy	Peptide-decorated pH-sensitive nano-conjugate hybrid micelles for co-delivery of temozolomide and an autophagy inducer, rapamycin, for treatment of glioblastoma multiforme	DBT-Nanobiotechnology	INR 38.326 Lakhs (3 years)
5.	Prof Deepak Chitkara (PI) Department of Pharmacy Prof Rajdeep Chowdhury (Co-PI) Department of Biological Sciences	Actively targeted nano-formulations for co-delivery of a taxane and antioxidant molecule, alpha lipoic acid, for treating breast cancer	DST-Rajasthan	INR 11.136 Lakhs (3 years)

# Student round-up

**Joy Mukherjee (2015B5A70394P)** was selected as the winner of Hackathon Easy Ride - Bonjour India on the theme of smart and sustainable mobility, a flagship program by the French Embassy. The program was graced by H.E Mr Alexandre Ziegler, Ambassador of France to India, along with the Lieutenant Governor of Pondicherry, Ms. Kiran Bedi and Chief Secretary Mr Ashwani Kumar. The competition took place in VelTech University, Chennai during January 22-23, 2018. Joy Mukherjee is awarded the first prize with incubation support and a prize money of Rs. 30,000 for his work on smart and connected urban transportation systems.



## Healthcare Startup Wins IIT Khargapur Business Model Competition

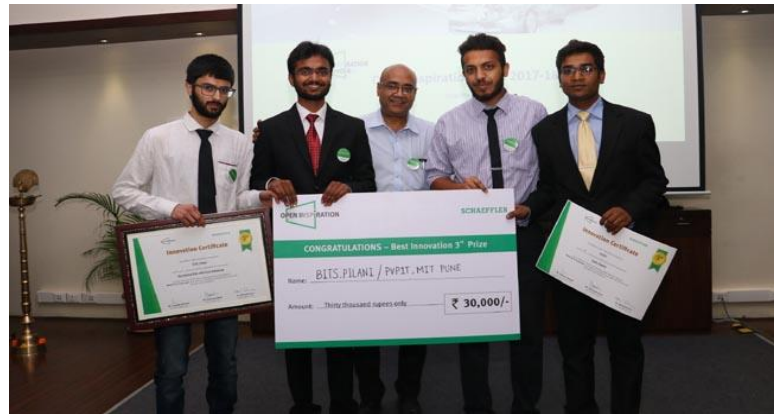
GnomikX, a healthcare startup from BITS Pilani Campus, was selected winner of the 2018 edition of Empersario, an internationally popular business model competition that was held annually by IIT Kharagpur and was awarded Rs. 2 lakhs. The finale of the competition took place at Ambuja Neotia, Kolkata on February 4, 2018. Surbhit Johri (2014B1A30284P), Raja Shukla (2014B5A30850P) and Aditya Chauhan (2014B1A70408P) (all of whom are dual-degree students in BITS Pilani Campus) and Dr Attya Omer, a scientist at MIT, USA are the founder members of GnomikX. GnomikX also made it to the Nexus incubation programme, which is an ongoing collaboration between the U.S. Embassy and IC2 Institute of Technology, Texas.



## Automated Bike in Schaeffler India 'Open Inspiration' challenge

**Animesh Jain (2015B1A40694P)** and **Satyam Bhaskar (2015B5A30420P)** secured the second runner-up position and were awarded with Rs. 30,000 in Schaeffler India, Open Inspiration Challenge. They showcased their prototype design and idea for Autonomous Bike under the topic "Urban Mobility".

Schaeffler India, a leading industrial and automotive supplier, announced the 'Open Inspiration India' program last year, visiting 26 colleges across India over the past few months, involving 300 students and gathering a total of 114 entries for the event.



## YES Future Ready Scholarship

**Chhagar Rohnit Singh (2017H1060201P)**, M.E. Mechanical has been awarded the prestigious *YES Future Ready Scholarship*. It is a scholarship program for empowering future business leaders. The initiative seeks to identify 30 exemplary scholars, from over 20 select business and engineering campuses, and provide them with a scholarship of Rs. 2 lakhs.





## Google Summer of Code 2018 Scholarship Program

Google Summer of Code (GSoC) is a prestigious global program wherein students from all over the globe come together for open source software development. This year, a total of 25,873 students from 147 countries registered for the program out of which 1,268 students from 613 universities received acceptance. BITS Pilani secured third position in terms of student selections in the program all over the globe, thus representing the strength of coding culture in the institute. The overall count of BITSians (from all three Indian Campuses) who have been offered GSoC stands at 53.

## First Prize at Mercedes-Benz Research and Development India Hackathon

More than 50 programming and car enthusiastic 'hackers' participated at the Daimler Hackathon in Bangalore and developed digital prototypes. In total, more than 350 teams from India applied for the Hackathon. The top 11 teams were made to create convincing solutions within 24 hours. The first winners, team 'V1' from BITS Pilani comprising: Aadi Jain (2015A7PS0104P), Anmol Singhal (2015A7PS0069P), Saurabh Manish Raje (2015A7PS0045P) and Nischay Singh (2015A7PS0059P) developed a prototype that helps vehicles to detect pedestrians with infrared light. The team 'V1' now has the possibility to present their idea to increase road safety at the Mobile World Congress 2018 in Barcelona. Furthermore, this winning team was rewarded with a cash prize of Rs 1.5 lakhs.



## Indian representation at Microsoft Build, Seattle, WA

**Palash Dhakar (2016B3A40462)** was selected to represent India at Microsoft Build, which is an annual conference conducted by Microsoft, aimed towards software engineers and web developers using Microsoft technologies. This year, the conference was held in

Seattle, WA during May 7-9, 2018. In addition to the workshops and expos, the conference had keynotes by Microsoft CEO Satya Nadella and other visionaries behind the Intelligent Cloud and Intelligent Edge.

## Chitrath Dagar Memorial Award Ceremony

The Mechanical Engineering Department and Mechanical Engineering Association of BITS, Pilani, Pilani Campus organized Chitrath Dagar Memorial Award Ceremony on April 23, 2018 in the memory of Chitrath Dagar. The parents of Chitrath were present to reward the meritorious students with 'Chitrath Dagar Scholarship'.

**Sishir Suresh Mohammed (2015A4PS0136P)** was adjudged the all-round "Best Outgoing Student in Mechanical Engineering".

► Chitrath Dagar Memorial Award Ceremony



## First 100% Ethanol (E-100) fuelled car in India

Team BITS is a collegiate team from BITS Pilani with a vision of making fuel efficient cars with zero emissions.



The team participated in a fuel efficiency challenge, Shell Eco Marathon Asia which is one of the world's leading energy efficient competitions with 120+ teams from 18 countries. It has made the first Indian car to run on 100% Ethanol which has been presented at Changi Exhibition Centre, Singapore during March 8-11, 2018. The mission of the team for 2019 is to increase the efficiency of the

100% Ethanol-fuelled car and the development of a highly efficient electric vehicle. The contemporary team thrives on the geniuses of its 35 talented members from various fields and stages of Engineering and Sciences and has grown into structural organization with subsystems for powertrain, design and aerodynamics, vehicles dynamics and operations.

## Case Study Challenge 2018 in Indian Road Safety Campaign

BITS Pilani Students' team "Umang" comprising of Paresh Deshmukh (2016A4PS0412P), Neil Sarkar (2017B2A40997P), Shaily Bhatt (2017A7PS0040P) and Siddhant Dwivedi (2016B3A40315P) won the Case Study Challenge 2018 in the prestigious Indian Road Safety Campaign bagging a cash prize of Rs. 25,000 and goodies.

Indian Road Safety Campaign in collaboration with the Ministry of Road Transport and Highways, Government of India and Technex, IIT BHU Varanasi organized the event on March, 2018 which was graced by the presence of Shri Swatantra Dev Singh, Transport Minister, Uttar Pradesh.

► BITS Pilani Students' team "Umang"



## World Finalists at Hilti IT Competition 2018

BITS Pilani students' team comprising of Rishank Pandey (2016A1PS0399), Himanshu Goyal (2016A1PS0629) and Ruddhi Prasad (2016A7PS0021) was selected as one of the Top 5 International Teams in the World Finals of Hilti IT Competition 2018. The team was offered an all-paid trip to Hilti Asia Headquarters, Kuala Lumpur, Malaysia to participate in the competition during March 28-30, 2018 to present their prototype on-site, where they won the People's Choice Award.

Attracting over 400,000 students from 60 countries, the 2018 competition revolved around two major themes: Implementation of Internet of Things and Augmented

Reality in the Construction Industry and Digitization of Customer Interaction. Other finalists included the teams from Carnegie Mellon, National University of Singapore and Hong Kong University of Science and Technology.

► Team selected in the World Finals Hilti IT Competition 2018



## National Social Summit, IIT Roorkee

NSS BITS Pilani participated in the National Social Summit organised by NSS IIT Roorkee in which over 25 colleges participated in more than 10 events spread across 3 days during February 3-5, 2018 the theme of the summit being 'Women Empowerment and Child Care'. Siddhant Dwivedi (2016B3A40315P) presented their work in the event "Innovision", for which NSS BITS Pilani bagged the 1<sup>st</sup> position. In "Vaad Vivaad", a debating event related to social issues prevalent in the society, team of 3 students from NSS BITS Pilani Srishti Jain (2016A1PS0583P), Vishal Kumar Jha (2017A1PS0756P) and Sanyam Jain (2017A7PS0014P) also bagged the 1<sup>st</sup> position.



SIDDHANT DWIVEDI

SANYAM JAIN



**Piyush Sharda (2013B5A30440P)** was involved in multiple research projects in Astrophysics as part of his summer internships, Off Campus Thesis - Physics and Off Campus Thesis - EEE and joined the Australian National University in Canberra for his PhD in Astrophysics. He worked on the most luminous supernova remnant in a satellite galaxy of the Milky Way. This paper was presented at the 231st



Annual Meeting of the American Astronomical Society, held at Maryland (USA) during January 8-12, 2018. For his Off Campus Thesis in EEE at the Australian National University, Canberra, he worked on testing star formation laws at sub-kiloparsec scales in a high redshift galaxy. For his Off Campus Thesis in Physics at the University of Exeter, UK, he worked on creating a new analytic model of viscous accretion around young T Tauri Stars.

The Harvard-led project in which he's a Co-Investigator, was approved by NASA and the Chandra Space Mission Directorate recently, and has received a funding of \$211220 (INR 1,48,19,892) from NASA/CXC. He was made a lifetime Fellow of the Royal Astronomical Society (FRAS) in July 2018, thus being one of the youngest Indians to be made an FRAS. He was also made a Student Member of the European Astronomical Society in April 2018 and is one of the only 3 Indian members of the Society.

**Sanya Khanna (2017H1490348P)** participated in 'Interview Question of the year 2018' contest organised by PInterview and won the award titled "Winner of interview question of the year 2018" during July 13-25, 2018.



# Creative zone

## APOGEE 2018

APOGEE 2018 brought about a full technical experience during February 21-25, rolling around the theme of 'A Cybernetic Vision' through lots of events, exhibitions, guest lectures and many more. The Inauguration Ceremony kicked off with a series of songs performed by Music Club after which, the world's most advanced commercial robot MITRA was brought on stage for a while. The Director Prof Ashoke K. Sarkar gave a short speech thanking the Indian Navy for their exhibitions this APOGEE, and the Chief Guest Commodore Indrajit Dasgupta, for finding time despite his busy schedule. Commodore Indrajit Dasgupta, Head of the premier electrical training establishment of the Indian Navy spoke at length about the Indian Defense and Navy.

Later, the Mitra bot was introduced to ask questions from the chief guest where in it asked if it were likely that AI would surpass human intelligence and creativity. When prompted to repeat the question, the bot slowly turned away. The Commodore simply laughed and stated that its response was an adequate answer to the question. A series of scintillating performances by Dance Club and Mime Club followed. The performances included hip-hop dances, a rap battle and even a parody of the BITSian registration process.

► Apogee 2018



## INTERFACE-2018

Interface, the 41-year old pan-India management fiesta of Department of Management, BITS-Pilani was held during March 23-25, 2018. The session saw motivating talks by Prof Leela Rani (HOD, Department of Management), and the guests including Prof Ashoke K. Sarkar (Director, Pilani Campus), Mr Gaurang Mehta (Executive Director of



Axis Capital Ltd), and Mr Vineet Sehgal (senior director, Human capital – PWC). Doing justice to the theme 'Into the Future', the event lived up to its tradition of innovation and mind-stimulating discussions.

There were registrations from more than 600 participants with close to 160 of them being invited to be a part of on-campus events. Also, the fest witnessed a lively and fun-filled evening of the comedy Prof Show, LOL'D, with Urooj Ashfaq, Sapan Verma and Kunal Rao. The other distinguished speakers were Mr Saurabh Nigam (Key Accounting Manager, Ericsson India), and Mr K.V. Rao (Co-founder, Epicenter technologies Ltd.)

► Interface 2018



## NIRMAAN

Nirmaan is a NGO founded by a group of students of BITS Pilani which is currently working for the welfare of people in and around Pilani. It also provides scholarships to meritorious and needy students, provides career counseling and works for the overall development of the community. In collaboration with Mahadeo Singhi Eye Hospital and Sightsavers, an eye checkup camp was organized on February 25, 2018. Nirmaan also collaborated with Research Society for the Study of Diabetes in India (RSSDI), to conduct blood sugar test for diabetes. The camp was inaugurated by the honorable director of BITS Pilani campus, Prof Ashoke K. Sarkar, Prof Roger P West (Trinity College, Dublin) and other distinguished guests. All these guests also visited the Women Empowerment centre of Nirmaan in Baas.

Nirmaan also conducted a Reflective Solar Cooker Camp in Khedla Ka Baas Village, Rajasthan on April 1, 2018 under the supervision of Prof Manoj Soni, Department of Mechanical Engineering, BITS Pilani. Thirty-three women and 15 kids from the village participated in the camp and learned to make reflective solar cookers, which they took back with themselves for use at home.

► Nirmaan



► Reflective Solar Cooker Camp in Khedla





## Blood Donation Camp, NSS

NSS BITS Pilani organized its 37<sup>th</sup> Blood Donation camp in collaboration with Indian Red Cross Society at the Students' Activity Center of BITS Pilani, Pilani campus during

February 17-18, 2018. Inaugurated by the Director BITS Pilani, Pilani campus, Prof. Ashoke K Sarkar, this camp is organized annually and gets a huge response from the citizens of Pilani. Around 1100 hundred people participated this year and they successfully donated 808 units of blood.



## Ragamalika





Ragamalika started off the second semester of 2017-18 with the TAP (Thyagaraja Aradhana) workshop. The event closed with the traditional Founder's Day performance, with club members and workshop participants performing the five songs to an open audience. Sangamam 2018, featuring a dance drama depicting Charles Dickens' "A Christmas Carol", was performed on March 27, 2018. The club adapted the story of miserly Ebenezer Scrooge and his life-altering encounters with specters into a

classical show. The last major events for the semester were the Pseni Concerts of the graduating members of the club. Interspersed among all these larger tasks were frequent chamber concerts, intended for a small audience and with a frequency of about one or two in a month. There was also a unique lecture-demonstration on melharmony in music, delivered by an alumnus. On the whole, it was a fruitful semester of Ragamalika.





# Introducing new faculty

S.No.	Name	Designation	Discipline	
1.	Sandeep Sundriyal	Assistant Professor	Pharmacy	
2.	Syed Mohammad Zafaruddin	Assistant Professor	Electrical and Electronics Engineering	
3.	Gaurav Dwivedi	Assistant Professor	Mathematics	
4.	Meetha.V.Shenoy	Assistant Professor	Electrical and Electronics Engineering	

## Editorial team



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**Student Members:** Mr Arihant Jain, Mr Kumar Utkarsh, Mr Archit Murlu

**Special Thanks:** Mr Ramesh Sharma, Publications and Media Relations





**BITS Pilani**  
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