



**BITS** Pilani  
Pilani Campus

Semester-II notes 2018-19

# bitscan

Pilani Campus



# editorial

New levels of excellence and success mark the beginning of the second semester, 2018-19, yet another illustrious semester. The convocation ceremony witnessed 1481 students eligible to receive their degrees, out of which 1118 received their first degrees, 327 received their higher degrees, and 36 received their doctorate degrees. Another batch of bright young minds ventured into the much aspired BITSIAN life with 15 board toppers of their respective states.

Efforts of the faculty and the Institute to bring together scholars from across the world were visible in several conferences organized and workshops conducted such as 4<sup>th</sup> Workshop on Analytical Instruments for Chemical and Environmental Engineers (WAICEE-2019), Conference on IKER, Workshop on Team-Based Learning, 16<sup>th</sup> Theoretical Chemistry Symposium (TCS-2019) and many more.

Involvement of students in every academic and cultural activity is the hallmark of BITS Pilani. APOGEE, the annual technical festival was full of interesting and inspiring talks. Various eminent professionals (like former ISRO Chairman) and others visited the campus for delivering talks and motivating students. A plethora of activities such as paper presentations, guest lectures, quizzes, cultural events and panel discussions judging the innovation of the participants marked the essence of this scientific gathering.

The 68th Founder's Day, International Women's Day, International Yoga day witnessed a great turnout from faculty and students. Many competitions and discussions were organized during Basant Book Festival to unveil the reading spirit of BITSians.

Professors of the institute also won laurels by winning medals, visiting several reputed universities in India and abroad to broaden their areas of research and collaboration under the scheme of University Immersion. Faculty also attended and presented papers at several conferences of repute. Professors have also been awarded with grants from several prestigious agencies to carry out research in their respective fields.

A wonderful amalgamation of multifaceted events, visits, honors and awards, this issue archives all the stories. Hope you enjoy reading some of the achievements and milestones of the semester.

## Alumni Achievements

**Revathi Advaithi** (1986-1990 batch) has been appointed as the Chief Executive Officer (CEO) of Flex Ltd. Flex provides design, engineering, manufacturing, and supply chain services and solutions. Formerly, Ms Advaithi was President and Chief Operating Officer, Electrical Sector, of Eaton Corporation plc.



**Mr Sanjay Ramabhadran**, (1988-1992 batch) has been appointed as the President of Texas Lyceum, a nonprofit organization that works to identify the next generation of top leaders. Sanjay is the first immigrant and Indian American president of Texas Lyceum.



**Prof S.P. Kothari**, a distinguished Alumnus awardee has been elevated to the position of Chief Economist and Director of the Division of Economic and Risk Analysis (DERA) of US Securities and Exchange Commission (SEC). He is a Professor of accounting and finance and recently ended a six-year term as Deputy Dean of MIT Sloan School of Management.

**Mr Manu Sawhney** (1984-1988 batch) has been appointed as the CEO of International Cricket Council.



## Alumni meet

The Alumni meet was organized on February 23, 2019, for the batch of 1974-79. It was an event for old relationships to be cherished, refreshed and new ones to be formed, reflecting and recollecting the good old times and memories.

Batch of 1974-79.



## Indo-French Research workshop

A seven-day Indo-French Research workshop on "Theory and Simulation of Hyperbolic PDEs" arising in Mathematical Biology and Fluid Flow (TSHPDE-2019) was organized by the Department of Mathematics from January 5-11, 2019. Dr Rajesh Kumar, convener from BITS Pilani welcomed all the guests and participants. Prof Youcef Mammeri, convener from France spoke about the workshop and discussed the possible collaboration between BITS Pilani and French institutions for various joint projects.

Prof B. K. Sharma, Head, Department of Mathematics informed the participants about the opportunity for collaboration and research in interdisciplinary areas. Director, Prof Ashoke K. Sarkar, spoke about the foundation of the institute and suggested the participants to explore the possibility of interaction with national and foreign experts on various disciplines of Mathematics. Prof Fernando da Costa, Chief Guest of the conference highlighted the significance of mathematics in real-life applications and also about the importance of this workshop. There were 6 international and 2 national speakers from various disciplines and 54 participants, of which 3 were from the University of Laos.

Prof Fernando da Costa



#### India-France Research Workshop on

**Theory & Simulation of Hypothetic PDFs arising in Mathematical Biology & Fluid Flow**

Organized by Department of Mathematics, BITS Pilani-Govt Campus

January 18-19, 2019

#### National Workshop on Power Electronics Applications

Department of Electrical and Electronics Engineering, BITS Pilani, had organized a two-day National workshop on "Power

Electronics Applications and Real-time Implementation" during January 18-19, 2019. Prof Hari Om Bansal, the convener introduced the theme of the workshop. Prof V. K. Chaubey, Head, Department of Electrical and Electronics Engineering informed the participants about the opportunity for collaboration and research in relevant areas. Prof S. K. Verma, Dean, Administration, suggested the participants about exploring the possibility of interaction/ collaboration with national and foreign experts on various areas of power electronics. Chief Guest, Prof Jamil Akhtar, highlighted the significance of recent trends in device modelling in power electronics. Prof Chandra Shekhar, Senior Professor Emeritus briefly introduced the recent advances in the control algorithms and their application into this domain. There were 60 participants from different parts of the country and 5 lecture sessions from experts out of which 2 were through tele-presence and 6 were demonstration sessions.

#### National Workshop on Power Electronics Applications



#### National Workshop on

**Power Electronics Applications and Real-time Implementation**

Organized by Department of Electrical and Electronics Engineering, BITS Pilani, Pilani Campus

January 18-19, 2019

#### Founder's Day celebration

Birla Institute of Technology and Science, Pilani celebrated its 68th Founders Day on February 9, 2019. This year the program spanned over the entire day and a large number of students and faculties participated in the different events.

Prof Souvik Bhattacharyya, Vice-chancellor, Prof Ashoke K. Sarkar, Director, began the auspicious day by lighting the lamp and offering the floral tributes at the statue of the founder chairman, Late Shri Ghanshyam Das Birla. Thyagaraja Aradhana Program was organized by Ragamalika-student association group, where thirty-five students recited beautiful classical Krithis originally composed by Saint Thyagaraja followed by the final

grand cultural event wherein there were musical performances by students of seventeen regional societies, exhibiting the diversity in culture, colour, fragrance, and flavour of different states of India. During the ceremony, 11 non-teaching staff were felicitated by the distinguished guests. In addition, 17 awards were given to selected non-teaching staff for their outstanding achievements in their field of work.



## Conference on IKER

The Interdisciplinarity of Knowledge, Education and Research (IKER)'s, a two-day conference was organized during February 8-9, 2019. It aimed to bring academics, industry professionals and practitioners under one umbrella to deliberate on the relationship between various sciences and examine the theoretical and practical aspects of interdisciplinary of knowledge. The Chief Guest for the inaugural function was Prof Furqan Qamar, Secretary-General, Association of Indian Universities and the Guest of Honour was Prof Robin Shields, Associate Professor, International Centre for Higher Education Management, University of Bath, UK.

### Conference on IKER



The Director, Prof Ashoke K. Sarkar, highlighted the importance of interdisciplinarity in today's education. Prof. Furqan Qamar spoke about the transition of single discipline to interdisciplinary in today's field of education; he also added that this transition is very important for educational institutions. The Guest of Honor Prof Robin Shields added that this transition will indeed be a game-changer in the field of education for both India and UK. The keynote speaker Prof Bijoy Boruah spoke about the importance of interdisciplinarity in today's economic world. This was followed by an official release of the conference abstract and edited book by the members sitting on the dais. Vote of thanks was proposed by Dr Tanu Shukla, Department of Humanities and Social Sciences, BITS Pilani.

## Theoretical Chemistry Symposium

The 16<sup>th</sup> Theoretical Chemistry Symposium (TCS-2019) was organized by the Department of Chemistry at BITS Pilani, during February 13-16, 2019. Over 320 external delegates comprising over 100 faculty delegates (including 4 foreign delegates) 3 industry delegates and over 220 students had gathered for the same. The three-and-a-half day symposium had witnessed about 24 keynote lectures, 52 invited talks and about 221 poster presentations. Held biennially, TCS has been the largest platform for theoretical and computational chemistry community in India. Vice-Chancellor, Prof Souvik Bhattacharyya, emphasized on the key role of theoretical and computational sciences in

strengthening the ties with other areas of science and technology. Director, Prof Ashoke K. Sarkar, briefed about Pilani Campus. Prof Saumi Ray, Head, Department of Chemistry presented research highlights of the department. Prof Shridhar R. Gadre, Distinguished Professor at Savitribai Phule Pune University and the Guest of Honour for the inaugural function presented a brief history of the symposium series and highlighted how the idea of TCS has evolved over the years, since its conception in 1986. Dr Paritosh Shukla anchored the inaugural function and Dr Prashant Uday Manohar, Co-convener, TCS 2019 proposed the vote of thanks.

### Inauguration of 16<sup>th</sup> Theoretical Chemistry Symposium



## Basant Book Festival 2019

The Basant Book Festival - 2019 was inaugurated by Vice-Chancellor Prof Souvik Bhattacharyya, on February 4, 2019 in presence of the Director Prof Ashoke K. Sarkar and many esteemed Faculty members, Staff and students of BITS Pilani.

### Basant Book Festival - 2019



Over 25000 books, covering areas such as Science, Technology, Engineering, History, Social Sciences, Literature, Biography, Fiction, Dictionaries, Encyclopedias, Children's Books, and books on general readings were on display in the book festival by five different publishers: Narendra Publishing House, Cambridge University Press, Usha Book Distributors, Technical Bureau India Pvt. Ltd. Orient Black Swan, Technical Books International. Apart from books on paper, e-books were also available from Elsevier and Taylor and Francis.

On the second day of the festival, BITS Pilani Library organized a Panel discussion on Print Books vs e-books in which prominent academicians and students from literary and poetry club participated in a discussion chaired by Senior Professor Emeritus, Prof Chandra Shekhar.

#### Panel discussion on Print Books vs. E-Books



#### Workshop on Institutional Digital Repository

BITS Pilani Library in collaboration with National Digital Library of India, IIT Kharagpur organized a two-day workshop on Institutional Digital Repositories from February 25-26, 2019. During the Inaugural session, Prof P.P. Das, Joint Principal Investigator, NDLI Project (initiated by IIT Kharagpur with support from MHRD, Govt. of India) introduced the project and the various technical requirements.

#### Chief guest addressing the gathering



The project already has over 2 crore digital resources which are most versatile and can serve right from the school children to the research scholars on wide-ranging subjects. Dr Sutradhar, Librarian, IIT Kharagpur talked about how librarians can contribute to the NDLI project by digitizing the contents of their institution, universities, colleges and how NDLI can help the librarians to set up the Institutional Digital Repositories by using open source software such as D-Space and share their content with NDLI. Vice-Chancellor, Prof Souvik Bhattacharyya, congratulated BITS Pilani library and IIT Kharagpur for conducting the workshop for the benefit of librarians and also for their institutions.

He encouraged the participants to implement IDR in their respective libraries. The National Digital Library of India will be used to serve learning content of various types including developed e-content, e-books, e-journals, scanned books, research papers, thesis, etc.

#### Workshop on Institutional Digital Repository



#### Study India Program for Hiroshima University

The Study India Program is a cultural interface between India and Japan that provides an opportunity to the young learners to observe, interact and participate in each other's culture both in academic as well as in co-curricular sense. It was a 10-day long program organized by the Department of Humanities and Social Sciences, BITS Pilani for the Hiroshima University, Japan from February 25 - March 07, 2019. The program helped in raising the participant's awareness of multi-cultural and multi-ethnic diversity. Prof G.S. Chauhan, coordinator of the program, in the inaugural ceremony emphasized on the importance of such programs that promote international peaceful co-existence, universal harmony and sustainable development. Prof S. K. Choudhary, Head, Department of Humanities and Social Sciences, spoke about the different activities and plans of the department and also introduced faculty members of BITS and their areas of expertise to the audience.

#### Study India Program for Hiroshima University



Vice-Chancellor, Prof Souvik Bhattacharyya formally welcomed the guests and shared his views on the importance of cultural exchange programmes, need for international collaboration in knowledge sharing, education and research. The event concluded with the vote of thanks proposed by Prof Sangeeta Sharma expressing her heartfelt gratitude to all the delegates, resource persons, faculty, research scholars and support staff for extending their help and cooperation to make the event a grand success.

## International Women's Day Celebration

International Women's Day was celebrated at BITS Pilani on March 8, 2019. Around 45 women participated in various cultural activities such as Dance, Music, Songs, Games and Fashion Show on varied themes ranging from age-old classics to contemporary non-fiction and the key-literary pieces. Around 150 Women and Girls from BITS Pilani were present to celebrate this occasion with a lot of enthusiasm and passion. Prof Sangeeta Sharma organized and Prof Sushila Shekhawat anchored the event.

International Women's Day Celebration



## TLC Workshop

The Teaching-Learning Centre of BITS Pilani, had organized a two-day workshop on Team-Based Learning during March 8-9, 2019. The resource person, Dr Preman Rajalingam, is an Assistant Dean, Educational Development and a Senior Lecturer, Medical Education in Nanyang Technological University, Singapore. He introduced the concept of "Team-based Learning" (TBL) and "Problem-based Learning" (PBL) to the participants and offered hands-on exercises and discussion on student-centred approaches to learning in three consecutive sessions. The workshop was well-attended by BITS Pilani faculty members, totaling 42, with 4 from Goa campus and 1 from Hyderabad campus.

TLC Workshop



## WAICEE-2019

4<sup>th</sup> Workshop on Analytical Instruments for Chemical and Environmental Engineers (WAICEE-2019) was organized by the Department of Chemical Engineering, BITS Pilani and Indian Institute of Chemical Engineers (IICChE), Pilani Regional Center during March 25-26, 2019. The inauguration program started with a small video presentation about the Department of Chemical Engineering followed by an introduction to the theme of the workshop by Prof Smita Raghuvanshi, the Convener. The theme of the Workshop was to enhance the understanding of principle and working of analytical equipments such as XRD, GCMS, FTIR, AAS, SEM, XPS, TGS, DSC and Particle analyzer. WAICEE-2019 attracted 50 participants in total which include 27 out-station participants from AMU, Aligarh; JNU, Jaipur; GLA, Noida; Central University, Ajmer; MNIT, Allahabad; Forensic Science Lab, Delhi and Institute of Chemical Technology, Mumbai and 23 in-station participants from Pilani campus.

Prof Smita Raghuvanshi introducing the theme of the Workshop



Vice-Chancellor, Prof Souvik Bhattacharyya in his inaugural address suggested to include more hands-on experience in the Workshop as that would develop skill sets in participants. Director, Prof Ashoke K. Sarkar, shared his thoughts on how young researchers should understand the basic philosophy about the working of machines and emphasized that the real research is to define why didn't one get the result that one aspires to get.



The Chief Guest of WAICEE-2019, Dr Goutam Ghosh, Senior Vice President, Vaccines & Biological and Technology Management, Panacea Biotec, New Delhi spoke about qualification and validation of the equipment in his inaugural speech while also emphasizing the importance of quality guidelines for venturing into analytical equipment.

### Graduating Tea Party

BITS Pilani, hosted Director's tea party on April 26, 2019, for the Graduating class of 2019. The program commenced with the address by the Vice-Chancellor, Prof Souvik Bhattacharyya, who said, "Victory without virtue is not worth chasing. Reputation for good character and judgment will be the single most important factor that determines whether you progress to positions of greater responsibility. While you all strive to do well, you must also do some good. This purpose will thrill you throughout your life."

Director, Prof Ashoke K. Sarkar advised students to experiment and be learners throughout their life. Prof Arya Kumar, Dean of Alumni Relations, encouraged students to reach out for their goals even after graduation. Prof Srikanta Routroy, Associate Dean SWD, Prof Navin Singh, Chief Warden and Prof Surekha Bhanot, Warden, Meera Bhawan also shared their thoughts.

Prof Souvik Bhattacharyya addressing the graduates



### World Book and Copyright Day

BITS Pilani Library organized a contest "First Book written and illustrated by Me" for the children in the age group 11-15 years to commemorate World Book and Copyright Day 2019. Mr Giridhar Kunkur, the librarian who conceptualized and executed this event said that it was a big challenge for children because it involved a higher level of imagination, converting their thoughts into creative writing and to illustrate what they imagined to go with the flow of the story. Also, children had to put what they wrote on word document with right formatting. A panel of judges consisting of Prof Surekha Bhanot, Prof Devika, Dr Rishikesh Vaidya, Mrs Navjot Kaur and Mr Syama Prasad Dutta went through these books carefully to finalize the names of the winners.

The announcement of the names of the winners and the Prize distribution ceremony for this contest was held on April 23, 2019. Director, Prof Ashoke K. Sarkar was the Chief Guest on the occasion. Prof Chandra Shekhar, Senior Professor Emeritus spoke on the "Joy of Reading". Mrs. Seema Sinha, Bursar of Birla Balika Vidyapeeth, Pilani, mentioned how she was influenced by the poetic writings of Ramdhari Singh Dinkar since her childhood. She advised everyone to make books their close friends. Mr Pawan Vashishtha, Principal, Birla Shishu Vihar enlightened everyone about the importance of reading. The first prize went to Renuka Kadian, the Second Prize was bagged by Isha Goyal and the third prize was given to Taruna Kumari.



### Defence Officers' Reunion

25 serving and retired alumni from the defence services visited BITS Pilani for the 1st BITS Defense Officers' Reunion during April 5-7, 2019. The two-day event saw alumni across batches renewing friendships and reliving their time on the campus, alongside conversations, interactions, and entertainment. The alumni also had some informative and engaging discussions with the students about their experiences, joys and challenges of defence as a career. Welcoming the alumni, Vice-Chancellor, Prof Souvik Bhattacharyya said, "We are immensely proud of the great accomplishments of our alumni."

Defence Officers' Reunion



These officers have not only made their institute proud but the entire nation with their selfless and dedicated contributions. Director, Prof Ashoke K. Sarkar welcomed the Alumni and also said that their experience and talent are valuable both for the students and Institute's growth. Speaking on the occasion, Prof Arya Kumar, the Dean, Alumni Relations showed gratitude to the officers for their selfless contribution to the nation.

Back on the campus after a long gap, the alumni were brimming with emotions. Rear Admiral Arun Saxena stated that BITS is an institution that has contributed a lot to defence services and BITSians from defence services would be eager to contribute in promoting research and other teaching initiatives in their Alma mater to take it to great heights.

### New Research Zone at BITS Pilani Library

A new state of the art Research Zone in BITS Pilani Library was inaugurated on April 23, 2019, to commemorate World Book and Copyright Day. Director, Prof Ashoke K. Sarkar, was the Chief Guest on the occasion. Mr Giridhar Kunkur, the librarian, in his welcome address said that the new facility will be a gateway to high-quality information relevant to research. The Research Zone will provide access to a huge range of specialist information resources including a Digital Library of over 39,000 electronic journals, millions of e-books through library portal. The Research Scholars and Faculty members will now have a dedicated space where Research Presentations, Seminars, Webinars talks and discussions can be organized on a regular basis. The event was attended by Prof Ajit Pratap Sirigh, Prof S. K. Choudhary, Prof G. S. Chauhan, Prof Jitendra Panwar and many others including Research Scholars and staff members.

#### Inauguration of New Research Zone



### Workshop on Academic Writing

Workshop on academic writing was organized by the Department of Humanities and Social Sciences during April 5-12, 2019. The workshop was inaugurated by Vice-Chancellor, Prof Souvik Bhattacharyya, Director, Prof Ashoke K. Sarkar and Head, Humanities and Social Sciences Department, Prof S.K. Choudhary and Convener of the Workshop, Prof Pushp Lata. The workshop aimed at training the research scholars on how to "Write an Academic Paper and get published", was conceptualized and

shaped by a team consisting of Prof Pushp Lata, Dr Kumar Sankar Bhattacharya, Dr Sailaja Nandigama and Prof Devika. 46 research scholars from various disciplines and departments registered in this workshop and 13 experts from varied disciplines like Civil Engineering, Mechanical Engineering, Chemistry, Mathematics, Economics and Finance, Management and Humanities and Social Sciences were on board as resource persons. In this workshop, the participants got an opportunity to produce quality research papers by using convincing contents through the effective use of language and clear organization of material. To this effect, participants were provided hands-on 'learning by doing' practice sessions on a daily basis.

#### Workshop on Academic Writing



### Asian Society for Engineering Education

The Asian Society for Engineering Education (AsiaSEE) was officially launched at the University of Hong Kong (HKU) on May 8, 2019, which marked the establishment of the first Asian regional network of higher educational institutions to improve engineering education. More than 40 guests and founding members of the society, who all hold important positions as Presidents, Deans, and Professors in Asian universities, were present at the Launching Ceremony.

Dr Kaushar Vaidya, signed the declaration of commitment.



The Founding President of AsiaSEE, Dr. Cecilia Chan from the Centre for the Enhancement of Teaching and Learning at HKU, and the Vice President of AsiaSEE, Prof Haydn Chen from Taiwan National Chiao Tung University, delivered the officiating address

and introduced how the idea of developing an engineering education network finally came into reality through joint efforts of different parties. Over 20 founding members from universities across Asia including Hong Kong, Singapore, Korea, China, Thailand, India, Philippines, Taiwan, Malaysia, Macau, Vietnam and UAE signed a declaration of commitment to join AsiaSEE to work together for the advancement of engineering education. Dr Kaushar Vaidya, Faculty in-charge, Teaching Learning Centre, BITS Pilani, attended the launch event and signed the declaration of commitment as a founding member of the society.

### International Yoga Day

The 5th International Yoga Day was celebrated on June 21, 2019, with great enthusiasm and vigour. About 80 participants took part in the event. Director, Prof Ashoke K. Sarkar Prof S. K. Verma, Dean Administration, BITS Pilani with Officers, Faculty members, students, staff and their family members also participated in the event. The Yoga session started with Omkar chanting followed by

systematic practice of different Asanas, Pranayam and Meditation smoothly changing in succession under the instructions of Yoga teacher. The session concluded with the vote of thanks by Dr Bhavesh Verma (PEDI).

#### International Yoga Day



## Convocation

Convocation ceremony for the graduating students who have completed the eligibility requirements in the Second Semester 2018-19 in First Degree, Higher Degree and PhD Programs was held on July 21, 2019. In this Convocation, out of 1481 students who were eligible to receive their degrees 1118 received their first degrees, 327 received their higher degrees, and 36 received their doctorate degrees. Mr Rajat Jain (2015A7PS0549P) received the Gold Medal, Mr Vignesh Nanda Kumar (2015A7PS0355P) received the Silver Medal and Mr Harsh Kanodia (2014A1B10525P) received the Bronze Medal.

The Chief Guest on this occasion was Mr Sonam Wangchuk - a Mechanical Engineer who has been mostly working in the field of education reform for more than 27 years. The Chief Guest in his address to the audience applauded the faculty members and students for academic excellence in various fields and congratulated BITS, Pilani for attaining the status of Institute of Eminence. He called upon the audience, especially the students to work and find solutions to the problems faced by people in the country in their day-to-day living. Vice-Chancellor, Prof Souvik Bhattacharyya in his address said "BITS Pilani offers the best in class graduates to the nation and the world". He informed the audience, "You are aware of BITS Pilani's pioneering role in offering UG, PG and Certificate programs to over 19,960 working industry professionals. This year 5,540 students are graduating from our Off-Campus programs having 23.5% female students".



## Session with Distinguished Alumni Award Winners

This year's Distinguished Alumni Awards were given to eleven of BITS, Pilani for their outstanding and exemplary contribution towards Academia, Corporate Leadership, Entrepreneurship, Public Life and Philanthropy on July 20, 2019. The eleven awardees were the following: Manu Sawhney (1988 batch), Amitabh Chaudhry (1985 batch), Veerendra Raj Mehta (1953 batch), Akila Krishna Kumar (1983 batch), Sanjay Jalona (1990 batch), Arun Abraham Ross (1996 batch), Arun Kumar Sharma (1986 batch), Bir Bhanu (1974 batch), Ramanan Laxminarayan (1992 batch), Umesh Garg (1974 batch) and B P Agarwal (1968 batch). They shared their experiences and wonderful memories with the audience and also promised that they will continue their active participation in the development and upliftment of their alma mater. Vice-Chancellor, Prof Souvik Bhattacharyya admired the success of Alumni in different fields and talked about the research agenda of the institute wherein the institute would love to have the participation of Alumni. He stated that in the ongoing strategic exercise for the growth of the institute, alumni engagement has been identified as one of the key pillars and the first Dean, Alumni Relations has been appointed to have a deeper engagement with Alumni. During the interaction with Alumni, Director, Prof Ashoke K. Sarkar, talked about the academic, research and infrastructure developments in Pilani campus. He said that he wants the commitment from Alumni that they should spend at least a semester or a month in Pilani Campus to interact with students and faculty for the holistic benefit of everyone.



## Academia: a confluence of ideas

### Seminars/Conferences

### Workshops/Training Programs

### Enriching the Learning Experience: Visits by Faculty

**Dr Monika Gupta, Department of Economics and Finance**, presented a paper titled "Environmental and Economic Implications of British Columbia's Carbon Tax for India" at 27th EBES International Conference organized by the Eurasia Business and Economics Society (EBES) and Faculty of Economics and Business, Universitas Sebelas Maret (FEB-UNS) in Indonesia with the support of the Istanbul Economic Research Association in January, 2019.

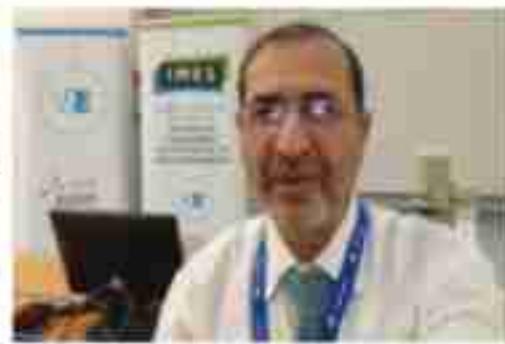


**Prof Pushp Lata, Department of Humanities and Social Sciences**, presented a paper titled "Digital Training for Language Teachers: An Exploration into Online Writing Tutorials" at Oxford Education Research Symposium Spring Meeting, a peer-reviewed conference during March 20-22, 2019, at Green Templeton College in the University of Oxford.

**Prof Manoj Kumar Soni, Department of Mechanical Engineering**, presented two papers titled "Analysis of Course Content Development using Pedagogic Framework – A Case Study" and "Design and Development of Game-Based Evaluation and Learning (GABEL) for Applied Thermodynamics course for Active Learning", co-authored by Dr. Tamali Bhattacharyya, in an International Conference on Industrial Engineering and Operations Management, at Bangkok, Thailand, during March 5-7, 2019.



Prof Arya Kumar, Department of Economics & Finance, presented a paper titled "Factors Affecting Entrepreneurial Intent Among Students-Initial Findings from India" in the 7th International Conference IMES-2019 on Innovation Management, Entrepreneurship, and Sustainability held at Prague, the Czech Republic during May 30-31, 2019.



Prof P. Srinivasan, Department of Mechanical Engineering and Prof Navneet Goyal, Department of Computer Science & Information Systems were invited to the TECHNOCONNECT event organized by Johnson Controls India (JCI) limited to present a technical proposal on "Fault Detection and Diagnosis for the roof top HVAC units" to the senior leadership of JCI and the employees for possible industry sponsored consultancy assignment. The mega event was held at Sahara star hotel in Mumbai during May 28-29, 2019.



Prof Sangeeta Sharma, Department of Humanities and Social Sciences, attended the 5th International Conference on Media and Mass communication organized by The International Institute of Knowledge Management and presented a paper titled "Innovation in Advertising Campaigns: New Orientation" at Kuala Lumpur, Malaysia during April 5-7, 2019. She, under the aegis of the University Exposure Abroad (UEA) programme by BITS, Pilani, India for summer of 2019, was also invited as a 'Visiting Scholar' at the Southampton Business School, University of Southampton, UK in June-July, 2019.



Prof Sushila Shekhawat, Department of Humanities and Social Sciences attended the 5th World International conference on Media and Mass Communication organized by The International Institute of Knowledge Management and presented a paper titled "Fictional Narratives and Question of Ethics in Indian Hindi Films" at Kuala Lumpur, Malaysia during April 5-7, 2019.



Prof Kumar Neeraj Sachdev, Department of Humanities and Social Sciences, attended the 2nd Malaysia - International Conference on Social Sciences & Humanities (ICSSH) organized by Eurasia Research and presented a paper titled "A Virtue-theoretic Analysis of Objectivity in News Media," at Universiti Teknologi Malaysia (UTM), Kuala Lumpur, Malaysia during June 26-27, 2019.



Dr Rajesh Kumar, Department of Mathematics, visited University of Picardie Jules Verne Amiens, France as 'Visiting Researcher' for Research collaborations during June 23-July 7, 2019.

Dr Neetu Yadav, Department of Management, attended the Faculty Development Program on "Case Pedagogy and Research Methods" at Indian Institute of Management, Ahmedabad from May 15 - June 29, 2019.

Dr Shibani Khanra Jha, Department of Civil Engineering, participated in the three months certification program on Corporate Leadership Training Program Certified by Iron Lady and Tata Institute of Social Sciences (TISS) at Bangalore Centre from June 21 to September 7, 2019.



## Distinguished Lectures

- Dr Sriram Rajamani, Distinguished Scientist and Managing Director, Microsoft Research India Lab, delivered a lecture on "Artificial Intelligence: Will Machines Take Over?" at the Department of Computer Science & Information Systems, BITS Pilani on February 16, 2019.
- Madhurjya Banerjee, Global Brand Leader, Unilever, delivered a talk on "Building a brand using Social Media" at the department of Humanities and Social Science, BITS Pilani on April 15, 2019.

## Invited Lectures by Faculty

**Prof Sangeeta Sharma, Department of Humanities and Social Sciences**, conducted one day session on "Excellence in Managerial Communication", in the Management Development Programme on "Innovative Techniques for Corporate Excellence" for middle and first level managers of Rajasthan Electronics and Instrumentation Limited (REIL), Jaipur, on February 19, 2019.

She also delivered an invited talk on "How to be a Better Communicator" at MNIT, Jaipur on March 11, 2019. A talk on "Role of Paralanguage in Public Speeches" in SKIT, Jaipur on March 11, 2019 and a talk on "Building confidence in Professional Presentations" at Prestige Institute of Management, Gwalior on March 16, 2019. Prof Sharma was also invited to give a key note lecture on "Role of online media in sustainability of brand" in the International Conference at Prestige Institute of Management, Gwalior on Digital Strategies for Organizational Success during January 5-7, 2019. She also delivered a talk on "Marketing in Digital India: Trends, opportunities and Challenges" and presented a paper titled "Building Brands through IMC: A case study of Maggie" at the 3rd National Marketing Seminar on March 16, 2019.

**Prof Manoj Kumar Soni, Department of Mechanical Engineering**, delivered an invited talk on "Education in the 21st Century: Challenges & Opportunities in International Convention" at Akhil Bharatvarshiya Maheshwari Mahasabha, Maheshwari



Global Convention (MGC 2019) organized at Jodhpur during January 5-6, 2019. He also delivered an invited talk on "Spiritual Thermodynamics" at Government College of

Engineering, Ajmer on April 18, 2019 and also delivered a keynote address in the "National Seminar on Recent Trends in Energy Systems" at Mody University of Science and Technology, Sikar, Rajasthan, on April 19, 2019.

**Prof Sushila Shekhawat, Department of Humanities and Social Sciences** conducted a session on Communication Skills and Group Discussions for the Employees of REIL India, at MNIT, Jaipur on February 19, 2019. Prof Shekhawat also conducted a one-day workshop on Technical communication and Soft Skills at MNIT Jaipur on June 4, 2019.

**Prof Navneet Gupta, Department of Electrical and Electronics Engineering**, delivered a talk on "Recent Trends in Antenna Design for Wireless Communication" at B.K. Birla Institute of Engineering And Technology, Pilani on January 23, 2019. He also delivered a talk on "Analysis of the Carbon Nanotube Field Effect Transistors (CNFETs)" using different high-k gate dielectric material at Amity University, Kolkata, on July 6, 2019.

**Prof Arya Kumar, Department of Economics and Finance**, delivered a key note talk on "Enhancing Entrepreneurial Climate in Educational Institutions" in the XIII International conference on the Business and Entrepreneurial Practices for Global Prosperity and Happiness organized by PIMR, Indore on February 9-10, 2019. Prof Kumar was also a panel member in the discussion on "Entrepreneurship opportunities and Challenges in the Manufacturing 4.0 era" organized in the Entrepreneurship Conclave on March 30, 2019.



**Prof S.B. Singh, Department of Civil Engineering**, delivered a keynote lecture at UKIERI Concrete Congress at NIT Jalandhar on March 6, 2019. Prof Singh was also the convener in National Conference on Structural Health Assessment and Rehabilitation, at Mumbai.

**Dr Pushp Lata, Department of Humanities and Social Sciences**, conducted a workshop on Essentials of Communication in a TEQIP-III sponsored Short-Term Course on "Empowering Engineers through Communication Skills: A Comprehensive Approach" jointly organized by the Department of Chemical Engineering and Department of Humanities and Social Sciences, MNIT, Jaipur during July 29-August 2, 2019. She was also invited to conduct a workshop on 'How to crack Job Interviews' at BKBIET, Pilani on 22 July 2019 as a part of seven-day long workshop for final year students.



**Dr Rajesh Kumar, Department of Mathematics**, delivered an invited talk on "Tensor Train Approximation for High-dimensional PDEs with Gaussian Source Terms" at colloquium on Micro-Macro-Interactions of Structured Media and Particle Systems held at Otto-von-Guericke University Magdeburg, Germany from June 20-22, 2019.

**Prof P. Srinivasan, Department of Mechanical Engineering** was invited to deliver two lectures on "Technical Education and Skill Development under Higher Education" and "Use of Information Technology in Higher Education" for the officers of Indian Audit and accounts program on "Auditing Higher Education with special reference to Sustainable Development Goal" sponsored by the Ministry of Environment and Forest and organized by The International Centre for Environment Audit and Sustainable Development (ICED), Jaipur during May 21-22, 2019. He was also



invited to deliver a session on "E-Learning technology, E-content development and MOOCs" in the seven day workshop organized by M.D. University Rohtak on February 21, 2019.

**Prof Raj Kumar Gupta, Department of Physics**, delivered an invited talk on "Surface plasmon resonance of ultrathin films and applications" in National Conference on light-matter interaction at nanoscale-2019 held in IGCAR, Kalpakkam, Tamil Nadu during July 15-17, 2019. He also visited SUSTech, Shenzhen, China for delivering an invited talk titled as "Sensing applications of soft ultrathin films of mesogenic and nanomaterials" in the 4<sup>th</sup> Asian Conference on Liquid Crystals held during January 17-18, 2019.

**Dr Amit Jain, Department of Chemical Engineering**, delivered a talk on "Matlab and Simulink for Process Engineers" at the Sant Longowal Institute of Engineering & Technology (SLIET), Longowal, India on April 26, 2019. He also delivered a talk on "Decentralized Multiloop Control: Relative Gain Array Analysis", at Bundelkhand Institute of Engineering and Technology (BIET), Jhansi, India on July 28, 2019.

## Accolades and Achievements: Academic attainments of faculty

**Department of Computer Science & Information Systems** has received United States-India Educational Fund (USIEF) to host a Fulbright scholar in the area of Computer Science under the Fulbright-Nehru Specialist Program. Prof Arun Somani, BITS Distinguished Alumni Awardee 2017, Distinguished Professor of Electrical & Computer Engineering, Iowa State University will be visiting the department for six weeks from January, 2020.

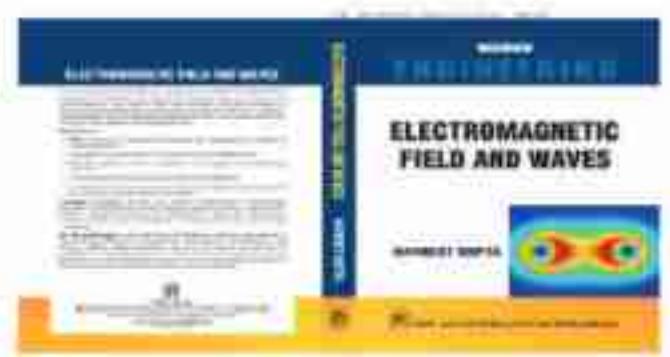
**Dr Paul Atish Tulshiram, Department of Pharmacy**, was bestowed upon the "Best Professor in Pharmacy Studies" award at the 11<sup>th</sup> Innovative Education Leadership Awards 2019 presented by DNA [Zee News] and Stars of the Industry Group at Mumbai on February 16, 2019.



**Dr Manoj Kumar Soni, Department of Mechanical Engineering**, was awarded the prestigious Dr. Shirin Gadhia Sustainability Award 2019 from Eco Center ICNEER in a function held at Vadodara on June 19, 2019.



**Prof Navneet Gupta, Department of Electrical and Electronics Engineering**, published book titled Electromagnetic Field and Waves: New Age International Publishers, New Delhi, 2019.



## Significant projects

S.No	Principal Investigator and Name of the Department	Title of the Project	Funding Agency	Amount and Duration
1.	Prof Paul Atish Tulshiram Department of Pharmacy	Design, Synthesis, Biological Evaluation and Molecular Modeling Studies of Indolyl Oxoacetamide Quinazolinone Based Hybrid Analogs as Potential Pancreatic Lipase Inhibitors for Obesity Treatment.	DST	INR 35 Lakhs (3 years)
2.	Dr Sandeep Sundriyal Department of Pharmacy	Computational design, synthesis and screening of non-hydroxamate lipophilic DXR inhibitors as potential antibacterial/antimalarial/anti-TB agents.	DST-SERB	INR 30.46 Lakhs (3 years)
3.	Prof Shamsher Bahadur Singh Department of Civil Engineering	Study of Post buckling Response, Failure and Strength of Functionally Graded Composite Plates with and without Cutouts	CSIR, New Delhi	INR 18.45 Lakhs (3 years)
4.	Dr Sundaresan Raman Department of Computer Science and Information Systems	Mobile App for Assisting Indian Farmer in Improving Yield by Automatic Identification of Plant Diseases (Rice & Tomato)	DST	INR 17.73 Lakhs (3 years)
5.	Prof Shamsher Bahadur Singh Department of Civil Engineering	Structural Health Assessment and Rehabilitation Framework based on Cyber Physical System	DST, New Delhi	INR 15.543 Lakhs (3 years)
6.	Prof Navneet Gupta Department of Electrical and Electronics Engineering	Design and Analysis of Metamaterial Based Antenna for Wearable Applications	DST, New Delhi	INR 11.22 Lakhs (2 years)
7.	Dr Jayashree Mahesh Department of Management	Designing a Futuristic Learning Framework for Post Millennial Generation Students of Higher Education Institutions in India	ICSSR - IMPRESS	INR 8.90 Lakhs (2 years)

## Student round-up



Vatsal Jignesh Badami (2016A7PS0071P) presented a paper titled "In-Loop Simulation of Attitude Control of a Nanosatellite" as the main author at IEEE Aerospace Conference 2019 held in Big Sky, Montana, USA during March 2-9, 2019. The paper was written based on the work done as a part of Team Anant, the student nanosatellite team of BITS Pilani and was reviewed by experts from IEEE and NASA.

Shruti Kumari (2017B2A11052P) presented a paper titled "Water-Splitting with  $\text{g-C}_3\text{N}_4/\text{MoS}_2$  using Ni/Pd as Cocatalyst" and got first position in the Department of Chemistry, BITS Pilani, at Apogee during March 28-31, 2019.

### Chitrath Dagar Memorial Award Ceremony

The Mechanical Engineering Department along with Mechanical Engineering Association of BITS Pilani, organized Chitrath Dagar Memorial Award Ceremony on April 23, 2019. The parents of Chitrath were present to reward the meritorious students with 'Chitrath Dagar Scholarship'. Ms. Divya Rathore (2015B5A40758P) was adjudged the all-round "Best Outgoing

Student in Mechanical Engineering" while the music award went to Ms. Radhika Narang (2015B2A40823P), for her significant involvement and contribution towards Gurukul.



Ms. Divya Rathore



Ms. Radhika Narang

Sashakt Tripathi (2017A7PS0052P), Ahmad Faraaz (2017B4A70558P), Shubham Gupta (2017A7PS0126P) and Harshit Awasthi (2017B2A10952P) won India Innovation Growth Programme 2.0 (IIGP 2.0) organized by the Department of Science and Technology, TATA Trust and Lockheed Martin. Their startup Elixar Systems was selected among the top ten which got a research grant of 10 lakhs and startup mentorship from IIM, Ahmedabad.



The students in the startup worked upon Augmented Reality in areas related to pedagogical methods. They have also recently appeared on DD National to discuss about the technology-enabled academic benefits of their startup. The finale of IIGP 2.0 was held at IIT Bombay on July 3, 2019 and the award ceremony on July 17, 2019.

BITS Pilani students awarded at IIGP 2.0

## INDIA INNOVATION GROWTH PROGRAMME 2.0



Unnikrishnan. P. M (2015PHXF0103P) attended 3<sup>rd</sup> International conference on 'Evidence based management' (IICBM 2019) and presented the paper titled "Evidence based and data driven management practices in manufacturing industry: A case study". He got the best paper award in the industry vertical 'Manufacturing' at BITS Pilani during February 1-2, 2019.



Shrey Agarwal (2018B2A4PS0707P) and Raghav Raman Garg(2018A7PS0312P) got the first prize in Pravega's IBM Hackathon conducted at IISc Bangalore on January 18, 2019.

The problem statement of this hackathon was – "Binary Classification of News". They won in the least error/most accurate code section of the event which involved the use of Machine Learning blended with NLP and neural networks aimed to classify news articles into fake or real.



Ms. Divya Rathore (2015B5A40758P), a fourth-year undergraduate student of Mechanical Engineering at BITS Pilani was selected as a Student Representative to the first Regional Conference of WePOWER - Women in Power Sector conference. The conference was organized by the World Bank Group along

with Asian Development Bank, Australian Aid and Energy Sector Management Assistance Program in Kathmandu, Nepal on February 20-21, 2019. The goal of WePOWER is to support greater participation of women in energy projects and utilities and promote normative change regarding women in Science, Technology, Engineering, and Math (STEM) education.

Mayank Bhutani (2015B2A30836P) and Koustubh Gupta (2015B4A20684P) a team "VR Bros" were selected for the Best Demo Award on VR Demo Day, February 23, 2019, organised in Bangalore for "Virtual Reality Program" under "School of Innovation India" by Facebook and SV.CO. The project was Bails Down, a VR Cricket Game which is an immersive VR experience of a Street Cricket player becoming a successful and famous cricketer.



Vima Gupta(2014A3PS246P) and Lokesh Kumar Verma(2013A3PS253P) presented papers titled "Performance Analysis of a Visible Light Vehicle-To-Vehicle Wireless Communication System" and "Design of Frequency Reconfigurable Hexagonal Antennas for WLAN Applications" respectively, co-authored by Dr Rahul Singhal, Assistant Professor, Department of Electrical and Electronics Engineering, BITS, Pilani in International Conference on Microwave Integrated Circuits, Photonics and Wireless Networks (IMICPW-2019). Vima's paper received the 'Best Paper Award' in IMICPW-2019 held at National Institute of Technology, Tiruchirappalli during May 22 - 24, 2019.



Rohit K Bharadwaj (2017B4A70633P), Sparsh Jain (2017B5A40892P), Nayan Khanna (2017B4A70636P), Keshav Sethi (2017B3A30657P), Anushka Jain (2017B1A70975P) and Chinmay Hebbar (2017B4A80448P) the team Cicada Crackers from BITS Pilani won in the Complex Category of Smart India Hackathon held at Guwahati, Assam with a prize of Rs 1,00,000. The team of students built a Tsunami Alert System using Android and Web portal. It had participants from all over India with their novel ideas to respond to



various challenging problems presented by different ministries of Government of India.

Shivam Soni (2017D2TS1238P) and Subham Kumar Dash (2017A7PS0004P) secured second position among 38 innovations selected across India in Michelin Mobility Innovation Challenge – 2019. The innovation titled "Urban Stack" aims to provide the next generation of public transit experience to the commuters. It was conducted by MICHELIN India Private Limited, Pune on July 26, 2019.



## APOGEE 2019

The 37th edition of APOGEE brought about a full technical experience during March 28-31, 2019 rolling around the theme "The Reality Roulette" through lots of events, exhibitions, guest lectures and many more. The Chief Guest for the inauguration event was, Padma Shri A.S. Kiran Kumar, a former ISRO Chairman. During his interview at the event, he encouraged students to set ambitious targets and motivated them to exploit the opportunities space exploration has to offer. He was also impressed by the work done in the field of satellite research by the students of BITS Pilani's team Anant.

There was also a very pleasant surprise ensued in the form of a video message from renowned astronaut Sunita Williams, wishing BITS Pilani and APOGEE the best. Later, there was curtain raiser for APOGEE, created by the Department of Visual Media, showcasing a humanoid robot in multiple alternate realities, one of which was the iconic clock tower and rotunda scene.

The CoSTAAAns were then introduced, and the Director, The Vice Chancellor, the Chief Guest and Guest of Honour joined them on stage for the lighting of lamp. Among the dance and mime performances, there was also a demonstration of equipment gallery, latest technology and capabilities by a 45-member team from the National Disaster Response Force (NDRF) under the supervision of Prof Suresh Kumar on March 29, 2019.



## IAF displays flight simulator to students

The Indian Air Force (IAF) demonstrated its Induction Publicity Exhibition Vehicle (IPEV) at BITS Pilani campus on the occasion of 1st BITS Defence Officers' Reunion. As a part of the exhibition, the IAF brought a modified bus to the campus with a flight simulator of IAF's cargo and fighter aircraft. Scale models of crewless aerial vehicles (UAV), Mirage 2000, MiG 29, Rafale and a gravity suit were also on display represented by Wing Commander AMS Joseph and his staff. The demonstration was given on April 6, 2019.



## NSS

NSS BITS Pilani organized the 38th edition of its blood donation camp on February 2-3, 2019 at the old SAC. The blood bank partner for this camp was the Indian Red Cross Society (IRCS), New Delhi. Around 20 doctors from IRCS were present to supervise the process. Several competitions and awareness programs were organized to promote Blood Donation Camp. NSS, BITS Pilani 2019 concluded with a collection of 748 units of blood which can save more than 2200 lives.

## Nirmaan

Nirmaan an NGO founded by a group of students of BITS Pilani, organized a workshop on Menstrual Hygiene Awareness on April 4, 2019 conducted by experts from Niine foundation. In this workshop women were educated about the importance of proper diet, doing yoga and exercises, hygiene, use of sanitary napkins during menstruation, with the use of proper charts.



**Enactus**, created in 2018, is a group of motivated, socially driven people, who want to bring a positive change in the lives of the poor and underprivileged, with the help of entrepreneurial action. Their first project was undertaken in September 2018, which aimed at providing the skills of financial independence and business sustainability to the women in the rural village of Jherli, Rajasthan. The other project currently in the ideation phase is Platemate which aims to manufacture plate using discarded paper, by recycling and using solar power to achieve this target. Enactus also won the second prize at Aspire B-plan competition for the project Platemate, held at NSUT Delhi on February 9, 2019.



## **BITS Pilani Students Win Hilti IT Innovation Competition**

2019, Team "Ranch-o" of five students from BITS Pilani won the Hilti IT Innovation Competition 2019 held at Hilti Asia IT services office in Kuala Lumpur. They came up with the innovative solution to analyze conversations, provide summaries, schedules and other insights to take Hilti's customer interaction to the next level using an AI based virtual assistant 'Kaya'.



## **Vignesh Nagarajan**

(2016A8PS0264P), one of the 15 Indian students was selected for the Indo-US Science and Technology Forum(IUSSTF) - Viterbi Summer Program for internship at the Mixed Signal IC Design Group under Professor Dr Mike Shuo Wei Chen. The project was titled - "A new Down-conversion Receiver leveraging VCRO - PLL for mm wave RF signals" at USC Viterbi School of Engineering, University of Southern California, Los Angeles, USA during May 22 - July 15, 2019.



## **Introducing new faculty**

S.No.	Name	Designation	Discipline	
1.	Dr Muhammed Puthusseri	Assistant Professor	Humanities and Social Sciences	
2.	Dr Anirudh Rana	Assistant Professor	Mathematics	
3.	Dr Faizan Mohammad Rashid	Assistant Professor	Mechanical Engineering	
4.	Dr Deepak Sharma	Assistant Professor	Mechanical Engineering	
5.	Dr Jagat Sesh Challa	Assistant Professor	Computer Science and Information Systems	
6.	Dr Rajesh Kumar	Assistant Professor	Computer Science and Information Systems	
7.	Dr Akash Agarwal	Assistant Professor	Electrical & Electronics Engineering	
8.	Dr Rahul Arora	Assistant Professor	Economics & Finance	
9.	Dr Abhishek S. Dhoble	Assistant Professor	Chemical Engineering	

# Editorial team

**Editor:** Prof (Ms) Sushila Shekhawat

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

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THE INDIAN EXPRESS, FRIDAY, AUGUST 30, 2019

**MoU signed between BITS Pilani & Alicorn Pvt.Ltd. Technology Transfer of product Insta Derm**

Alicorn Medical Private Limited signed the technology transfer agreement with BITS-Pilani. Alicorn Medical Private Limited is a biotech company focusing on developing advanced biomaterials from nature for providing innovative medical, dental, veterinary and cosmetic products.

**hindustantimes**  
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**hindustantimes**  
Birla Institute of Technology and Science Pilani (BITS) has celebrated its 45th anniversary on 27th February, 2019.

**Business Standard**  
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