

Semester-II notes 2016-17

# bitscan

K K Birla Goa Campus



**BITS Pilani**  
K K Birla Goa Campus

# from the editor

We are delighted to present to you the 15th issue of our semester magazine, *BITSCAN*, for our campus. The last semester has been quite eventful with a lot of happy and a few sad moments. The semester began with the good news that our student, Avidipto Chakraborty, a dual-degree student of Computer Science and Economics, topped CAT 2016 with a 100 percentile score. On the other hand, this semester also marked the end of an era as three of our senior-most and most venerated faculty members retired from service. Prof. K. E. Raman (Former Acting Director, K.K. Birla Goa Campus), Prof. Meenakshi Raman (Former Head, Department of Humanities and Social Sciences) and Prof. J. V. Rao (Former Associate Dean, Student Welfare Division) retired on superannuation this semester and have left a massive void for us to fill in. They were parental figures for us on the campus to fall back on for advice and made us feel secure with the belief that they were always there to back us in difficult situations. We miss them and we wish them the best in their future endeavors.

Other highlights of the student-achievements include the selection of BITS Pilani team in *Hyperloop Challenge* as the only team from India to develop a pod vehicle to race on SpaceX track. The start-up of our students, Drone Nation, has won the Nidhi Prayas Grant of DST to develop a drone for agriculture. Our students also brought laurels to the Institute in the sports arena. The campus football team, BITS FC won the 2<sup>nd</sup> place (Runner-up) in the Goa Football Association—3<sup>rd</sup> Division league and qualified for the 2<sup>nd</sup> division. Vatsal Tolasaria (2013B2A1684G), won the 2<sup>nd</sup> Place at the All Goa Open Major Ranking Tennis Singles Championship organized by BPS Club Margao, Goa.

As an initiative to encourage innovation and product design among students, the campus fabrication laboratory named, “Sandbox” was instated. Sandbox is available for the use of students who are selected to work in the lab. based on a rigorous evaluation of their product ideas. Some of the major attractions of the lab include a 3D Printer, 3D Scanner and a Laser Cutting Machine. The facility is available for projects in all science and engineering disciplines and is operational 24x7.

During this semester, the Teaching Learning Centre was quite active in reaching out to faculty members with workshops and lecture series. The two-day Regional Workshop on “Outcome Based Learning Using Pedagogy Framework Model, attracted participants from State and private educational institutions in Goa. The workshop was organized in collaboration with the Center for Educational Technology, IIT Kharagpur, under an MHRD sponsored project. Lectures by Prof. Anupam Basu, Dr. Tamali Bhattacharya, Dr. Tapomoy G Sarkar, and Dr. Harikrishnan Gopinandhan Nair were highly appreciated by the audience. The Department of Mathematics also organized a workshop on “Teaching

Strategies in Mathematics” for college and university faculty members.

Several departments organized international and national conferences, seminars and workshops which were highly appreciated by the intellectual community. *CALDAM 2017* organized by the Department of Mathematics created an academic platform for researchers to discuss the areas of algorithms and applied discrete mathematics. The Department of Biological Sciences organized *AttLis 2017*, an international workshop which covered the recent developments in the areas of cognitive psychology, cognitive neuroscience, psycholinguistics, Neuromarketing and Neuroeconomics. “Changing Contours of Indian Economy: Welfare Implications & Policy Responses” was the theme of the *BITS Economics Conclave 2017* organized by the Department of Economics. Padma Bhushan awardee Shri Madhav Gadgil enlightened the audience on the concept of cooperative commonwealth and sustainable development. The national conference on “New Frontiers in Chemistry—from Fundamentals to Applications,” organized by the Department of Chemistry, provided a platform for an open deliberation on the current research and developments in chemistry and allied sciences.

This semester has been marked with several academic achievements. The editors hope that we have done justice to you by covering the milestones of BITS Goa in this issue of *BITSCAN*. We, the editors of the issue, appreciate the support of the entire BITS community and thank you for your contributions in bringing out this issue.

# Adieu to Prof. K E Raman



On 22 July 2017, we bid a fond farewell to Prof. K E Raman, who retired after a long and distinguished career at BITS Pilani University. He had devoted his services to BITS for over 39 years, of which 9 years were at K K Birla Goa Campus. Prof. Raman joined BITS Pilani in 1978 as a Lecturer and was promoted to Associate Professor in 1990, Professor in 1995, and Sr. Professor in 2011.

Very well known for his administrative capabilities among faculty, staff, students and alumni, Prof Raman handled various administrative portfolios in Pilani Campus. He was a Non-Resident Warden; Group Leader (EEE); Unit Chief, Instrumentation; Unit Chief, Workshop; Dean Engineering Services and the Dy. Director (Administration).

Prof. Raman was instrumental in the planning and development of the Goa Campus, to which he moved as Acting Director in July, 2008. He nurtured the campus with his young team of administrators and faculty. Prof. Raman brought up the campus by mentoring the

administrators, encouraging the teachers and supporting the research culture that had started setting in.

Prof Raman was loved by students for his teaching capabilities and caring nature. In his honor, BITS alumni have instituted Prof. K E Raman Award for the Best Outgoing Student in Electronics & Instrumentation Engineering.

Prof Raman was also a connoisseur and patron of the arts. He was instrumental in fostering the cultural ambience in our campus, encouraging student activities including classical music and dance. A scholar of Indian scriptures, Prof Raman has been known to hold scripture classes at his residence.

Ably supported by his wife Prof Meenakshi Raman, Sir and Ma'am were literally parental figures on our campus. They will surely be missed. We wish them all the best in their future endeavours.



# a confluence of ideas academia

seminars/ conferences/ workshops/  
training programs

## National Conference on New Frontiers in Chemistry: From Fundamentals to Applications

The Department of Chemistry, BITS Pilani, KK Birla Goa Campus, had organized a two-day national conference on “New Frontiers in Chemistry: From Fundamentals to Applications” (NFCFA2017) from 28th – 29th January, 2017. It was the 2nd edition of NFCFA. The aim of the conference was to hold an open deliberation on the state-of-the-art developments in important areas of R & D of chemistry and allied sciences. It provided a forum where senior scientists/academicians and young researchers were able to interact and discuss the new frontiers in chemistry and share their current research interests. The conference covered broad areas of chemistry such as Synthetic Methodologies, Green Chemistry, Environmental Science, Natural Products, Drug Discovery, Chemical Biology, Bioinorganic Chemistry, Heterocyclic Chemistry, Catalysis, Materials Chemistry, Supramolecular Chemistry, Analytical Chemistry, Computational and Theoretical Chemistry. More than 200 participants from across India had participated in the conference. The conference was hosted with the help of generous financial support from govt. funding agencies like SERB, DRDO and BRNS. Pharma giants like Syngenta Bioscience Pvt. Ltd. and Unichem Laboratories Ltd. had actively participated in the event. The conference was inaugurated by the chief guest, Dr. Dhananjay Sathe of Unichem, and by the Director of BITS Pilani, K K Birla Goa Campus, Prof. Raghurama G. In his address, Prof. Raghurama, remarked on the necessity of interdisciplinary research. He said that a clear distinction among various sub-disciplines of chemistry like “Organic Chemistry” or “Physical Chemistry” no longer exists but has completely amalgamated with related fields like Biology and Material Science. Dr. Sathe shared his views on tethering basic development in chemistry with industrial application. He shared his experience on how a small change in condition does wonders in drug development.

The Convener of NFCFA 2017, Prof. Mainak Banerjee, shared his aspiration of making it a regular event of chemistry in Goa, every alternate year. The event concluded with 40 papers and 150 poster presentations. Internationally renowned chemical scientists such as Prof. Uday Moitra of IISc and Prof. Sourav Pal of IIT Bombay were the key-note speakers. The key attraction of the event was the NFCFA-RSC poster contest. The best 11 posters were awarded prizes.



## CALDAM Indo-German Pre-Conference School on Algorithms and Combinatorics

The Department of Mathematics, BITS Pilani, K K Birla Goa Campus, hosted a 2-day workshop on “**CALDAM Indo-German Pre-Conference School on Algorithms and Combinatorics**” on 13th and 14th of February, 2017. The school was designed for Ph.D. scholars and teachers in computer science and discrete mathematics organized jointly by BITS Pilani, K K Birla Goa Campus and RKM Vivekananda University, Belur, West Bengal and Karlsruhe Institute of Technology, Germany.

The school was aimed at fulfilling two purposes: (i) as a pre-conference school for CALDAM 2017, (ii) as an Indo-German School on Algorithms and Combinatorics. The following mathematicians were the resource persons:

- Prof. Dr. Alexander Wolff, Lehrstuhl für Informatik, Universität Würzburg, Germany
- Prof. Martin Skutella, Einstein-Professor für Mathematik und Informatik, Technische Universität Berlin, Germany

- Prof. Günter Rote, Fachbereich Mathematik und Informatik ,Freie Universität Berlin, Germany
- Prof. Dr. Dorothea Wagner, Karlsruher Institut für Technologie (KIT)  
Institut für Theoretische Informatik, Germany
- Dr. Ignaz Rutter, Karlsruher Institut für Technologie (KIT), Institut für Theoretische Informatik, Germany
- Prof. Max Klimm, Mathematik und Naturwissenschaften, Institut für Mathematik, Sekr, Technische Universität Berlin, Germany
- Prof. Anil Maheshwari, School of Computer Science, Carleton University, Canada
- Dr. Narayanan N, Department of Mathematics, IIT Madras, India
- Swathy Prabhu, RKM Vivekananda University , Belur, West Bengal, India
- Dr Bodhayan Roy Department of Computer Science and Engineering , Indian Institute of Technology Bombay

Participants from various parts of India attended the workshop. Prof. Tarkeshwar Singh was the convener of the event. Dr. Anil Kumar and Dr. Dhanumjaya were in charge of the logistics.

## Conference on Algorithms and Discrete Applied Mathematics



The 3rd International Conference on Algorithms and Discrete Applied Mathematics (CALDAM) was intended to bring together researchers working in the areas of algorithms and applied discrete mathematics and to provide a high-quality forum for the dissemination and discussion of research results in these broad areas. CALDAM originated from the ongoing efforts for promoting research in Algorithms and Discrete Mathematics.

Prof. Sumit Ganguly, IIT Kanpur, and Prof. Guenter Rote, Freie Universität, Berlin, Germany, invited speakers of the conference, were sponsored by Google, while, Prof. Martin C Golumbic, University of Haifa, Haifa, Israel, and Prof. Ola Svensson, EPFL, Lausanne, Switzerland were sponsored by Microsoft Research.

The proceedings of accepted papers of the conference were published in the Lecture Notes in Computer Science by Springer and a special issue of Discrete Applied Mathematics (DAM).

Three research Scholars, I. Vinod Reddy, IIT Gandhinagar, India, Lars Rohwedder, University of Kiel, Germany and Sai Sandeep, IIT Bombay, were conferred with LNCS Springer best paper awards. Prof. Satish Govindarajan (IISc. Bangalore), Prof. N.S. Narayanswamy (IIT Madras) and Prof. Patha Pratim Goswami (University of Calcutta) were the committee members who selected the best papers.

Sixty five delegates from India and other countries like, Germany, Canada, USA and Switzerland participated in the conference. Prof. Tarkeshwar Singh was the conference chair, Prof. Daya Gaur, University of Lethbridge, Canada, and Prof. N. S. Narayanswamy, IIT Madras, were the Co-chairs, Prof. Prasanna Kumar N, Dr. Anil Kumar, Dr. P. Dhanumjaya and Santosh Bhal, Adarsh Handa, Aloysius Godonho, Ashish Kumar, Ravi Shankar, Parth Shah and Pabitra Kumar P. arranged the logistics of the conference.

## Regional Workshop On Outcome Based Learning Using Pedagogy Framework Model

The Teaching Learning Centre, BITS Pilani, KK Birla Goa Campus, organized a two-day Regional Workshop On "Outcome Based Learning Using Pedagogy Framework Model" in collaboration with Centre for Educational Technology (CET), Indian Institute of Technology (IIT), Kharagpur, under the MHRD Government of India funded project, "Developing suitable pedagogical methods for various classes, intellectual calibers and research in e-learning (Main Phase)" at BITS Pilani, KK Birla Goa Campus, on 10th and 11th of February, 2017. 43 participants from various institutions in and around Goa participated in the event.

The event was inaugurated by Prof. G. Raghurama, Director, BITS Pilani, K K Birla Goa Campus, along with Prof. K. E. Raman, Professor Emeritus, Department of EEE, BITS Pilani, K K Birla Goa Campus. Dr. Varinder Singh, faculty-in-charge, Teaching Learning Centre, in his welcome address highlighted the need and importance of the workshop. Prof. Raghurama highlighted the importance of outcome driven approach to higher education. Prof. K.E. Raman observed the importance of continuous learning in the life of a faculty member.

Several lectures were organized during the workshops addressing topics related to Outcome Based Education and Instructional Objectives, Outcome-based Curriculum Design and Software, Assessment and Evaluation. The sessions highlighted the need to recognize different cognitive ability of the students and encouragement of the learning process in the classroom, preparing balanced question papers. The resource persons included prominent faculty members of IIT, Kharagpur as well as BITS Pilani namely Prof. Anupam Basu, Chairman, Centre for Educational Technology, IIT Kharagpur. Dr. Tamali Bhattacharya, CET, IIT Kharagpur, Dr. Tapomoy G Sarkar, Department of Physics, BITS Pilani and Dr. Harikrishnan Gopinandhan Nair, Department of HSS, BITS Pilani.



## Recent Trends in Chemistry: Students' Meet 2017

A Students' meet was organized by the Department of Chemistry on the occasion of the Department Day Celebration for the M.Sc. Chemistry students from the institutions in Goa on 26 February 2017. Students were invited for oral and poster presentations. Prizes were awarded to the best presentations (oral and posters) and certificates were given to all the participants.

This event also included a lab. visit session and lunch for the participants.

### Recent Trends in Chemistry: Students' Meet 2017



## A Two-day workshop on "Use of Unit-Level Data of NSS, ASI and Economic Census"

The Department of Economics organized a workshop on empirical analysis using unit-level data of National Sample Survey, Annual Survey of Industries and Economic Census on 2-3 March, 2017. The invited speakers were Mr. Anil Chopra and Mr. J R Majumdar, Joint Director(s), Ministry of Statistics, Planning and Implementation (MOSPI). The workshop was attended and acclaimed by the faculty, research scholars and students.

### Workshop on "Essential workflows of ArcGIS Desktop"

The Department of Economics, under the initiative of Dr. Aswini Mishra, organized a workshop on essential workflows of ArcGIS on 29-30 November, 2016. Mr. Sailesh Chintalapudi from Esri India Technologies Ltd., Bangalore, was the invited resource person.

## Workshop on Mathematica

The Department of Mathematics, BITS Pilani, K K Birla Goa Campus, organized a 1-day workshop on "Introduction to MATHEMATICA" on 03 March 2017. The workshop was designed for educating undergraduate students, Ph.D. scholars and teachers of BITS-Goa in MATHEMATICA. The workshop was jointly organized by the Department of Mathematics, BITS Pilani, K K Birla Goa Campus, and Wolfram technologies, USA. The workshop was aimed at bringing more awareness on the computational software, MATHEMATICA, in the campus amongst students, researchers and faculty members.



Dr. Aravind Hanasoge, Technology Consultant, Wolfram Research Inc., USA, was the trainer for the workshop. He introduced the basic strengths of MATHEMATICA, Numerical Computation—what makes MATHEMATICA the best, Symbolic Computation, Dynamic Interactivity and CDF, Probability & Statistics, Image Processing, Wavelets, Compilation, Parallelization, Linking to C, GPU programming, What is New in V11—Time Series Analysis, Machine Learning, 3D Image processing and Graphs in 3D.

25 participants including the faculty members and research scholars of the department participated in the workshop. Dr. Dhanumjaya was the convener and Dr. Anil Kumar was the co-convener of the event.

## **Fourth International Workshop on multi-modal cognition: AttLis 2017**

AttLis 2017: ATTENTIVE LISTENER IN THE VISUAL WORLD, the fourth International workshop on multi-modal cognition was organized by the Cognitive Neuroscience Lab, Department of Biological Sciences, BITS Pilani, K K Birla Goa Campus, from 3rd to 4th of March, 2017. The workshop's theme was multi-modal cognition with an emphasis on the interaction between language and vision. Core areas of the workshop were the (non)-intentionality of language-vision interactions, the nature of competition, selective processing, learning and development. They suggest that the investigation of language-vision interactions by means of methods such as eye-tracking offers a window into the mechanisms of how high level representations involved in language and memory interact with visual input. The workshop encouraged discussions on how research in this field can affect our understanding of consumer psychology and consumer neuroscience.

The inaugural ceremony of the event was held on 3rd of March, 2017 where Dr. Veeky Baths (Organizing Secretary) welcomed the speakers and guests while Prof. G. Raghurama, Director, BITS Pilani, K K Birla Goa Campus addressed the gathering and introduced the Chief Guest, Zohar Eviatar, University of Haifa, Israel. Dr. Ramesh K Mishra (Co-organizer) and Dr. Narayanan Srinivasan addressed the gathering while Prof. Judith Braganza, Head, Department of Biological Sciences, proposed the vote of thanks.

The interactive session had 10 International and 3 National invited speakers who spoke on topics such as cognitive psychology, cognitive neuroscience, psycholinguistics, Neuromarketing and Neuro-economics. Important questions such as how attentional and visual processes interact with spoken and written language processing; why are attention and vision crucial to language comprehension; whether language processing is like sensory processing (the 'embodied cognition approach') or whether cross-linguistic differences lead to permanent restructuring of cognition and perception (the 'linguistic relativity approach') were actively discussed and debated during the workshop. A total of 23 participants attended the workshop from various National and International colleges and universities.

## **Filmmaking workshop**

The Department of HSS, under the leadership of Prof. B. Geetha and Dr. Rayson K. Alex organized a Filmmaking workshop for the students of the course, Short Film and Video Production (GSF243) on 11 and 12 March 2017. Mr. Saumyananda Sahi, an award-winning cinematographer and graduate of the premiere film Institute of India, FTII, Pune, trained the participants in preparing a story to a cinematic plot, by focusing on visual story-telling, shot divisions and logical plot progression. While interacting with the participants he said, "every film, be it fiction or non-fiction, real-life or fantasy depends on the portrayal of human experiences." 35 students participated in the two-day workshop held at BITS Pilani, K.K. Birla Goa Campus.

## **BITS GOA Economics Conclave**

The BITS Goa Economics Conclave was organized by the Department of Economics, BITS Pilani, KK Birla Goa Campus, on 20th and 21st of March 2017. The theme of the event this year was "Changing Contours of Indian Economy: Welfare Implications & Policy Responses."

The event kicked off with phenomenal presentation by eminent economist Prof. Satya R. Chakravarty (ISI, Kolkata) who delivered a talk on equity and efficiency issues related to multidimensional economic inequality. He explained how policies can improve welfare and reduce economic inequality in India. This was followed an insightful talk by Prof. M.G. Chandrakanth (Director, ISEC, Bengaluru) who pointed out the dangers of unsustainable growth and overuse of resources.

Next, Dr. Sibichen K Mathew (IRS, Commissioner of Income Tax, Bengaluru) described the problems associated with tax compliance and how technology is helping to increase compliance and enforcement. Mr. G. R. Akadas (Director, MSME Development Institute, Goa) explained the problems faced by MSME sector in Goa and the role of various government initiatives to create employment and competitiveness in this vital sector. The first day of the events concluded on a high note with an address by Prof. Arun Kumar (Professor, Centre for Economic Studies and Planning, JNU, New Delhi) who explained how demonetization might not be effective in curbing the black economy in India.

The second day of the events commenced with an insightful talk by Prof. R. Nagaraj (IGIDR, Mumbai). He explained the problems of stagnant share of manufacturing sector in the national income and provided suggestions to improve economic data in India. Prof. Gopal Naik (IIM, Bengaluru) provided insights on conducting social experiments like tele-education project to address the problem of poor quality education in rural and aided schools in Karnataka. Dr. J. Dennis Rajakumar (Director, EPW Research Foundation) explained how corporate financing and investment is affecting development in India. Mr. K. Anpazhakan (Commissioner of Customs, Central Excise & Service Tax, Goa) explained the efficiency associated with GST and how automation is going to help increase tax compliance.

The Keynote Address was delivered by Padma Bhushan Shri Madhav Gadgil (Center for Ecological Sciences Indian Institute of Science, Bengaluru). Drawing from his personal experience through field visits in different parts of Goa, he illuminated the audience on the concept of “Cooperative Commonwealth” whereby he put forth the idea that sustainable development can be promoted through mutual cooperation along with respect for our natural resources.

This was followed by the Valedictory Address by Prof. G. Raghurama, Director of BITS Pilani, KK Birla Goa campus, who pointed out the importance and relevance of economic analysis towards sustainable development. Finally, the vote of thanks was proposed by Dr. Debasis Patnaik. Thus the event, which was sponsored by NABARD and SIDBI, provided an avenue for disseminating contemporary public policy research and emerging practices with special reference to India across a wide set of domains.

## BITS GOA Economics Conclave



## Inauguration of Sandbox

On 15 April, 2017, a fabrication laboratory, called Sandbox, was inaugurated in the BITS Pilani, KK Birla Goa campus. Sandbox is a campus initiative to support the students' innovative product designs. Sandbox is available for use by students who are selected based on evaluation of their product ideas. If a student has a unique product idea then no equipment hindrance can stop him/her because Sandbox has all the equipment that he/she would need to build his/her product. The faculty and student members of the Sandbox team aim to support students who have creative ideas and the faculty members will be guiding the students.



In the Lab., students will get access to work with basic workshop tools to the most advanced scientific instruments. The 3D Printer, 3D Scanner and Laser Cutting Machine are the major attractions of the lab. The Lab inventory also has advanced sensors, integrated chips and prototyping boards. The conference corner of the lab provides the facility to visualize the designs and to present it before the team members. The Sandbox also has a well-equipped mini-workshop to enable students to do cutting and welding within the lab. To safeguard the laboratory and the products built inside the Sandbox, the entry to the room is biometric and the



lab. is under complete CCTV surveillance. Sandbox offers the facility to do projects in all science and engineering disciplines and the lab. will be open to students 24x7.

Several proposals from the students of various disciplines were screened by the Sand box committee, among which eight proposals were accepted for a minimum duration of six months. The list of the products proposed to be made include a low cost incubator for the neonatals, a bipedal robot, a wireless motion sensitive security gadget etc. The students members of the Sandbox team would be guiding and training the team members in handling and working of the equipment's.

## WORKSHOP ON TEACHING STRATEGIES IN MATHEMATICS

Sponsored by: Elsevier Mathematical Sciences Sponsorship Fund-2017

Aiming to provide an intense training on teaching mathematics at undergraduate level for college and university faculty, a two-day workshop on 'Teaching Strategies in Mathematics' was held on 28-29 April 2017 at Birla Institute of Technology and Science Pilani, K K Birla Goa Campus. The Department of Mathematics, BITS Goa, was the first Indian academic institute to win the prestigious Elsevier Mathematical Sciences Sponsorship Fund – 2017.

Speaking on the occasion, Prof. G. Raghurama, Director of BITS Goa, said, “with the learning, there is a strong need to unlearn and relearn how to teach the new generation of students in this highly technological world. Teachers in this liquid society must be 'a meddler in the middle' and the process of teaching is a mutual learning process for teachers and students. We should move from the attitude of 'I do, you do' to an effective and inclusive approach of 'let's do'.” He felt that availability of all information at the clique of the mouse for the students made the 21st century teaching a very challenging one and teachers should mould themselves to the required environment. Prof. Nagaraj, IMSc, Chennai, delivered a lecture on “Groups as automorphism of sets,” Prof. Veerappa Gowda, TIFR, Bengaluru, spoke on “mathematical analysis and applications to PDEs,” Prof. V. D. Sharma, IIT Bombay, lectured on “Hyperbolic PDEs and Associated Nonlinear Wave Phenomena.” Prof. Arumugam, BITS Goa, delivered a lecture on “Methodology of teaching mathematics” and

Dr. Aravind, Wolfram Research, trained the participants on “Teaching mathematics using mathematica.” The event was basically designed to bring the teachers of mathematics in Goa on a single platform and share the information on teaching strategies needed for effective learning process in mathematics. Sixty faculty members from various parts of India participated in the workshop. Dr. Amit Setia and Dr. Manoj Kumar Pandey, assistant professors in mathematics, BITS-Goa, convened the event. The workshop was organized jointly by the Department of Mathematics, BITS-Goa and the Elsevier Publishing Company, Amsterdam, Netherlands.

### Workshop on Teaching Strategies in Mathematics



### Seminars Organised by Teaching and Learning Centre

- A Teaching Seminar was organized by the Teaching Learning Centre on 01 March, 2017. Dr. Gaurav Singh, Assistant Professor of the Department of Mechanical Engineering, spoke on "Fronts on which the BITS teaching-learning process may be improved."
- Prof. Dipankar Pal, Department of EEE and E & I spoke on "Engineering Education in India: Past, Present and Future" in 02 April, 2017.

# visits by international dignitaries

Sr No	International Delegates	Purpose of Visit	Date
1	Dr. Vijay Kumar, Director, International Academic Program, SCE, Computer Science Electrical Engineering, University of Missouri-Kansas City, USA	Discussion on Degree collaboration models, Faculty visit program, Online class possibilities, Possible involvement in your Ph.D. and M.Tech. degree programs	9th to 10th Jan., 2017
2	Prof. Sukeshi Kamra, Academic Director, Ontario India (OIN)	Interaction with Students on Students Exchange Programme	15th Feb., 2017
3	Prof. Hans Hermann Richnow, Head of the Department of Isotope Biogeochemistry, Helmholtz Centre of Environmental Research -UFZ, Germany	<ul style="list-style-type: none"> <li>Invited Talk on "Chemical Microscopy using NanoSIM and Helium ion Microscopy"</li> <li>Invited Talk on "Isotope Fractionation and Assessment of Degradation Processes"</li> </ul>	22nd Feb., 2017 23rd Feb., 2017
4	Prof Ulo Mander, Professor of Physical Geography and Landscape Ecology, Head of the Department of Geography, Institute of Ecology and Earth Sciences, University of Tartu, Estonia	Invited Talks on 1) Constructed wetlands for wastewater treatment - An Overview 2) Microbiological aspects of Nitrogen removal in treatment wetlands 3) Alternative filter materials for Phosphorus removal in constructed wetlands and 4) Constructed wetlands for treatment polluted agricultural runoff	28th to 31st March 2017
5	<ul style="list-style-type: none"> <li>Prof Folrent Chazarenc Ecole des Mines de Nantes, France</li> <li>Dr. Serdobbel Vincent, Ecole des Mines de Nantes, France</li> <li>Dr. Valerie Hequet, Ecole des Mines de Nantes, France</li> <li>Dr. L N Rao, IISC Bengaluru</li> <li>Dr. M. M. Ghangrekar, IIT Kharagpur</li> </ul>	Indo French CEFIPRA Meeting Network on Decentralised Grey / Waste water treatment	15th to 18th May 2017
6	Faculty Members from BITS Pilani Goa Campus, IITs, Various Indian and International Universities	Joint Workshop on Mobility, Employability and Internationalization of Indian Higher Education System organized by the Universidade De Santiago de Compostela and Lund University under Erasmus Mundus Namaste 2017 - Hosted by BITS Pilani, K K Birla Goa Campus	4th to 6th July 2017

# distinguished lectures

Sr No	Date	Title of Talk	Speaker's Name	Speaker's Designation
1	7th Jan., 2017	The purpose of life: Modern day Existentialism	Mr. Ojas Mehta	BITS Alumnus
2	17th Jan., 2017	Chemical Micro and Nanomachines	Prof. David Gracias	Johns Hopkins University in Baltimore, USA
3	27th Jan., 2017	Linear Algebra Proof of Fundamental Theorem of Algebra	Prof. Anant R. Shastri	Emeritus Fellow, Department of Mathematics, IIT Bombay
4	17th Jan., 2017	Chemical Micro and Nanomachines	Prof. David Gracias	Johns Hopkins University in Baltimore, USA
5	31st Jan., 2017	A Talk by Debarghya Das	Mr. Debarghya Das	BITS Alumnus
6	9th Feb., 2017	On potentials and reaction dynamics	Prof. Antonio J.C	Varandas Universidade de Coimbra, Portugal
7	17th Feb., 2017	Introduction to Maple	Mr. Deepak Garud	Binary Semantics Ltd.Mumbai
8	22nd Feb., 2017	Solvent, Time, Step and Cost Economy for Chemical Reactions - An Emerging Concept	Prof. Brindaban Chandra Ranu	IACS Kolkata
9	23rd Feb., 2017	Towards reproducible science	Dr. Larisa Soldatova	CS Department, Brunel University, London
10	8th Mar., 2017	Research Opportunities and Challenges in the area of Micro-electronics	Prof. Emeritus Chandra Shekhar	Department of EEE, BITS Pilani, Pilani Campus.
11	15th Mar., 2017	Financing your Master's abroad	Mr. Rishabh Goel	BITS Alumnus
12	18th Mar., 2017	BITS2Business School	Mr. Apoorv Bappat Mr. Anand Ramachandran Mr. Rishabh Goel	BITS Alumnus



# distinguished lectures

Sr No	Date	Title of Talk	Speaker's Name	Speaker's Designation
13	18th Mar., 2017	CAT Champs	Mr. Mohit Menon Mr. Avidipto Chakraborty Mr. Rishabh Mehra	BITS Alumnus
14	23rd Mar., 2017	Evolution of Model Specific Growth Rate: Theoretical Analysis and Application to Real Data	Dr. Amiya Ranjan Bhowmick	Assistant Professor, Department of Mathematics, ICT Mumbai
15	24th Mar., 2017	Information & Environment	Prof. Madhav Gadgil	Center for Ecological Sciences, Indian Institute of Science, Bangalore Mathematics, IIT Bombay
16	31st Mar., 2017	Artificial Intelligence	Mr. Shobhit Agarwal	BITS Alumnus
17	31st Mar., 2017	What to do in BITS to be a Successful Entrepreneur?	Mr. Raghu Rajagopal	BITS Alumnus
18	6th Apr., 2017	The purpose of Life and pursuing your passion	Mr. Ojas Mehta	BITS Alumnus
19	11th Apr., 2017	A generalized spherical mean Radon transform acting on radial functions	Prof. Brindaban Chandra Ranu	IACS Kolkata
20	13th Apr., 2017	Hardy's Inequality	Prof. S. Thangavelu	Department of Mathematics, IISc Bangalore
21	25th Apr., 2017	Prime Numbers and Cryptography	Prof. Shanta Laishram	Stat. Math Unit, Indian Statistical Institute (ISID), New Delhi
22	24th July, 2017	Thermodynamics in understanding protein folding and rational drug design	Prof. Nand Kishore Mr. Anand Ramachandran Mr. Rishabh Goel	Department of Chemistry, IIT-Bombay

# visits by faculty

## enriching the learning experience

### international visits

**Dr. Nilak Datta**, Department of HSS, presented a paper titled "Manufacturing the Marvels and Wonders of Hindoostan in the Gilded Age: The 1893 Chicago Exposition and the Parliament of Religions" at South Asian Literary Association Annual Conference 2017, held at Philadelphia, PA, USA from 2-4 January, 2017.



**Prof. S.D. Manjare**, Department of Chemical Engineering, delivered a talk on "Environmental Management Systems" at Department of Chemical Engineering, BITS Pilani, Dubai Campus, on 16 April 2017.

**Dr. Anil Kumar**, Department of Mathematics, presented a paper in the International Conference on *Computational Modelling & Simulation* (ICCMS-2017) held at University of Colombo, Sri Lanka, on 17th to 19th May, 2017. The paper was titled, "Optimal control of the velocity term in a Kirchhoff plate equation with multiplicative control."



**Dr. Rayson K. Alex**, Department of HSS, presented a paper titled, "Making Sense of People's Voices: Ecocultural Justice and the Construction of Mopa Airport in Goa" at the International Conference on Environmental Justice: Culture Resistance and Ethics at Dr. K. N. Modi University, Rajasthan, on 24th and 25th March, 2017. The conference was co-sponsored by Indian Council of Philosophical Research, New Delhi.



**Dr. Manjuri Kumar**, Department of Chemical Engineering, was invited to speak on "Study of DNA Binding and Catechol Oxidase Activity of Some Copper (II) Complexes Containing N-S Donor Ligand Using Spectroscopic Techniques" in a Session themed *Molecular Spectroscopy and Dynamics & Advanced Vibrational Spectroscopy and Applications* at the 5th International Conference of AnalytiX-2017 (AnalytiX-2017) held on March 22-24, 2017, in Fukuoka, Japan.

**Dr. P. Dhanumjaya**, Department of Mathematics, delivered an invited talk at an International Conference on *Computational Modelling & Simulation* (ICCMS 2017), on 17th to 19th May, 2017 held at University of Colombo, Sri Lanka.

**Dr. K. A. Geetha**, Department of HSS, presented a paper titled "Reading Srilankan Literature as Dalit Literature" at an International Conference held at the University of Humboldt, Berlin from 18th to 21st May, 2017.

**Dr. Ranjit S. Patil**, Department of Mechanical Engineering attended the 12th International Conference on Fluidized Bed Technology, (CFB-12) at Krakow, Poland from 23-26 May, 2017. His paper, titled “Computational Studies on Effect of Novel Accelerating Perforated Distributor on Fluid Dynamic Characteristics of Circulating Fluidized Bed Riser,” has been published in the conference proceedings. The conference is an annual event with a history of 30 years of academic engagement in the field of CFB Boilers and Fluidization.



**Dr. Anil Kumar**, Department of Mathematics, delivered an invited talk in the International Conference on Advances in *Computational Mathematics* held at University of Dhaka, Bangladesh, from 27 to 28 May, 2017. The title of the talk was “Approximate Controllability of a Class of Parabolic Differential Equations with Memory Term”.



**Prof. Ashwin Srinivasan**, Department of CS&IS, who also holds the position of visiting Professor in the Department of Computer Science, University of Oxford, visited the renowned Professor David Gavaghan, from Department of Computational Biology at Oxford for collaborative work. He also received the Best Paper Award in the 26th International Conference on *Inductive Logic Programming*. The paper was titled "Generation of Near-Optimal Solutions using ILP-Guided Sampling."

**Prof. M. Srikanth**, Department of Biological Sciences, delivered a lecture on “Waste Water Treatment for Sustainable Development” under the Erasmus Plus

Programme, at the University of Tartu, Estonia, in May 2017.

**Mr. Solano Da Silva**, Department of HSS, was invited as an external expert for a workshop in Rio de Janeiro, Brazil, from 2nd to 10th June, 2017, as part of an ongoing project on urbanisation. The study which included field visits sought to understand the dynamics of hybridity in the urban context.



**Prof. Amrita Chatterjee**, Department of Chemistry, visited Singapore from 19th to 23rd June, 2017, to deliver a talk on *Aggregation-Induced Emission Active Sensor Molecule for Heavy Metal ions, Anions and Neutral Molecules*, in the 9th International Conference on *Material Chemistry ICMAT 2017*

**Prof. Mainak Banarjee**, Department of Chemistry, visited Singapore from 19th to 23rd June, 2017, to deliver a talk in the 9th International Conference on *Material Chemistry ICMAT 2017*.

**Dr. Rayson K. Alex**, Department of HSS, presented a paper at the International Conference on *Rust/Resistance: Works of Recovery*, held at Wayne State University, Detroit, Michigan, USA, from 20th-24th June, 2017. The paper he presented was titled, “Resistance to Harmony: Indian Indigenous Stories from Ecodocumentaries.”





**Prof. Dipankar Pal**, Department of EEE, presented a research paper titled, "CCII+ Based Dual Square-Cum-Triangular Waveform Generator," in the 9th IEEE - International Conference on *Electronics, Computers and Artificial Intelligence (ECAI 2017)*, held from 29th June to 1st July, 2017, at the University of Valahia of Targoviste, Romania.

**Prof. Ranjan Dey**, Department of Chemistry, gave an invited talk in the Department of Theoretical Chemistry, Heidelberg University, Heidelberg, Germany on 13th July 2017. He also presented a paper titled "Novel Approaches for Viscometric Prediction of Binary and Higher Order Liquid Mixtures," co-authored by Ms. Piyashi Biswas and Ms. Akanksha Saini at the 6th Rostocker International Conference, Thermam 2017 (17th-18th July, 2017), co-organised by University of Rostok, Azerbaijan Technical University, Baku, and Dokuz Eylul University, Izmir, Turkey, at the Institute of Technical Thermodynamics, Rostock University, Rostock, Germany.



**Dr. Debasis Patnaik**, Department of Economics, and Prof. Basavadatta Mitra, Department of HSS, presented a joint paper on "Measuring Efficiency and Trust in Corporatized Education Model after Diversity Assessment" in the 17th International Conference on *Diversity in Organizations, Communities and Nations*, at University of Toronto from 26 to 28 July, 2017.

**Dr. Narendra Nath Ghosh** was invited as Visiting Research Professor by Department of Chemistry of University of Tennessee, Knoxville, USA. He visited University of Tennessee during 20th May 2017 to 30th July 2017 for conducting collaborating research on advanced catalysts with Prof C E. Barnes. He delivered an invited talk entitled "New Synthesis Strategies for Multi-functional Nanomaterials: Microwave Absorber, Catalysts, Fluoride Adsorbent, Sensor" on 12th July 2017.

## invited talks by faculty

**Dr. Mayank Goel**, Department of Mathematics, was invited as a resource person at IIT Madras for a short term course on "Mathematical Finance: Theory and Practice" hosted by Department of Mathematics, IIT Madras during 16th Jan 2017 to 21st Jan 2017.

**Prof. Tarkeshwar Singh**, Department of Mathematics, delivered five invited talks on Graph Labeling and its Variations in the *Two Weeks Faculty Development Program on Graph Theory: Algorithms & Applications*, organized by Department of Mathematics, BMS College of Engineering, Bengaluru (Sponsored by Technical Education Quality Improvement Program TEQIP-II) from 26 Dec., 2016 to 07 Jan., 2017.

**Prof. Pravin Singru**, Department of Mechanical Engineering, was invited at a National Conference Books to Bedside as an expert faculty to give a talk on "MEMS Based ultra-low pressure sensor in endotracheal tube" held in Nagpur from 7 to 8 January, 2017.

**Dr. Sachin Waigaonkar**, Department of Mechanical Engineering, gave an invited talk on "Testing Capabilities of BITS for Rotational Moulding Industry" in the 13th Annual conference organized by Society of Asian Rotomoulders (StAR), held between 28th and 31st of January, 2017.

**Prof. Tarkeshwar Singh**, Department of Mathematics, delivered an invited talk on "S-magincness and Integer Partitioning," in the UGC sponsored National Conference on Recent Advances in Mathematical Sciences (RAIMS-2017) at the Govt. Science College, Bengaluru, on 9th and 10th of February, 2017.

**Prof. M. K. Deshmukh**, Department of EEE, was invited as a resource person to speak on "Energy Management Options & Renewable Energy Technologies" in the Refresher Course for faculty in "Natural & Bio-sciences," at UGC-HRDC, Goa University, on 1st April, 2017.

**Prof. Ranjan Dey**, Department of Chemistry, was invited by the Department of Chemistry, University of Allahabad, on 13th April 2017, where he gave a talk on "Novel Pathways for Viscometric Prediction of Binary and Multi-Component Liquid Mixtures."

**Dr. Dhanya Ram V**, Department of Chemical Engineering. Delivered an invited talk at IIT Madras during the National Workshop on *Trends in Process Control* on 21st April 2017 on the topic "Multivariable control of unstable systems based on SSGM".

**Prof. M. K. Deshmukh**, Department of EEE, was invited to deliver the keynote address as Technical Chair, on "Energy Management Perspectives of Smart Grid Engineering" at the 2-day IEEE International Conference on Innovations in Power and Advanced Computing Technologies, at VIT Vellore on 22nd and 23rd of April, 2017.

**Prof. Ranjan Dey**, Department of Chemistry, was invited as a resource person for science workshop organized by Naval Education Society (NES), for all science teachers of classes IX to XII across India at the Navy Children School, Dabolim, Goa on 6th May, 2017.

**Dr. Vikas Chaudhari**, Department of Mechanical Engineering, chaired a session at the International Conference on *Recent Advances in Materials, Mechanical and Civil Engineering (ICRAMMCE-2017)*, organised by Marri Laxman Reddy Institute of Technology and Management, Hyderabad from 1st – 2nd JUNE 2017.



**Dr. Kiran D. Mali**, Department of Mechanical Engineering, chaired a session at the International Conference on *Recent Advances in Materials, Mechanical and Civil Engineering (ICRAMMCE-2017)*, organized at Marri Laxman Reddy Institute of Technology and Management, Hyderabad from 1st – 2nd JUNE 2017. He gave an invited talk on the topic, "Study on the Effect of the Impact Location and the Type of Hammer Tip on the Frequency Response Function (FRF) in Experimental Modal Analysis of Rectangular Plates," at the conference.

**Dr. Anil Kumar**, Department of Mathematics, delivered an invited talk during the International Conference on "*Recent Advances in PDEs: Theory, Computations and*

*Applications*" held at IIT Bombay from 8th – 10th June, 2017. The title of the talk was "Optimal control of the velocity term in plate equation with multiplicative control". Also chaired one paper presentation session.



**Dr. P. Dhanumjaya**, Department of Mathematics, delivered an invited talk at the International Conference on *Recent Advances in PDEs: Theory, Computations and Applications* held at IIT Bombay from 8th – 10th June, 2017.

**Prof. M. Srikanth**, Department of Biological Sciences, gave an Invited talk on "Waste to Energy" during the one-day seminar on *Sustainable Energy Options for the Future* on 28th July 2017 held at Don Bosco Engineering College, Goa.

## achievements

**Prof. Mainak Banerjee** and **Prof. Amrita Chatterjee**, Department of Chemistry, were appointed as Members of the Royal Society of Chemistry.

**Prof. Halan Prakash**, Department of Chemistry, was invited as a Visiting Faculty at NIREAS -International Water Research Center (IWRC), University of Cyprus, during June and July, 2017, to deliver a course on "Advanced Oxidation Process- (AOP) and Antibiotic resistance."



**Dr. Debasis Patnaik**, Department of Economics, became a member of the Education Committee in Goa Management Association (GMA) after being elected to Membership, Executive Committee, third time in a row.

**Prof. Mainak Banerjee**, Department of Chemistry, was appointed as a member of screening/selection committee for screening/promotion of teachers of Goa University as Vice-Chancellor's nominee.

**Dr. Debasis Patnaik**, Department of Economics, won the bid for hosting World Conference on Regional Science in BITS Goa from 29th May to 1st June, 2018, in a competition of 6 countries.

**Prof. Mainak Banerjee** and **Prof. Amrita Chatterjee**, Department of Chemistry, were invited as members of the jury committee for 11th T.Y. B.Sc. chemistry symposium, March 2017.

**Prof. Geetha B**, Department of HSS was one of the Jury Members of the tiNai Ecofilm Festival held on 24th and 25th March, 2017 at Dr. K. N. Modi University, Jaipur.

**Prof. Ranjan Dey**, Department of Chemistry, was awarded the Bengali Social and Cultural Association (BSCA), Maanpatra Samman and a citation on 15th April 2017 for distinction in the field of education in Allahabad, U.P.



**Dr. P. Dhanumjaya**, Department of Mathematics, was a resource person for an International Workshop on CIMPA: Summer School on Multiscale Computational Methods and Error Control, held at IIT Kanpur, from June 26 to July 21, 2017.

**Prof. Basavadatta Mitra**, Department of HSS, was nominated as a member of the Education Committee, Goa Chamber of Commerce and Industries, 7th time in a row. In the present term, she has been assigned the vertical for Industry Exposure to draw up a comparative study of the best practices followed for Industry Exposure in the top technical institutions in India and

abroad and prepare a concept note for reformation of the current internship programme offered in local technical colleges of Goa. The report will be presented to the Vice-chancellor for recommendation for implementation.

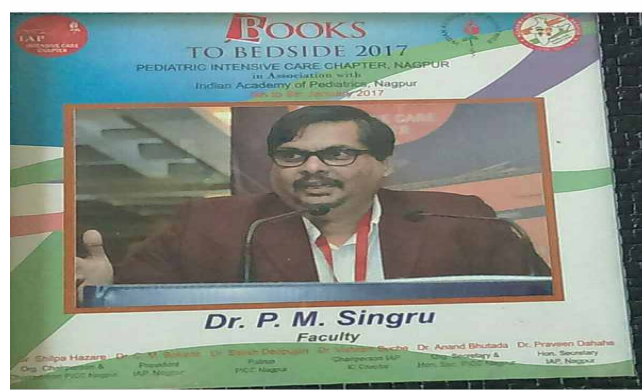
**Prof. Utpal Roy**, Department of Biological Sciences, was awarded 'Indian National Science Academy (INSA) Visiting Scientist' award to work for a month at the "Department of Medical Microbiology" PGIMER, Chandigarh, in the month of June 2017. The INS-approved project was titled "Determination of Minimum Inhibitory Concentration (MIC) of mycelial mold and preliminary pharmacokinetic study using the HPLC-purified antifungal compound from *Bacillus subtilis*."

**Prof. M. Srikanth**, Department of Biological Sciences, was appointed as the Member of State Level Advisory board to review the matters related to implementation of rules, state policy and strategy policy and strategy on solid waste management.

**Prof. Ashwin Srinivasan**, one of the 16 successful applications worldwide for the USRA/Google/NASA call on projects for the D-Wave Quantum Computer.

**Dr. Varinder Singh**, Department of Mechanical Engineering, was appointed as a member of the Program Committee for organizing 11th Indian Subcontinent Decision Sciences Institute (ISDSI) conference at IIM Trichy, in Dec 2017.

**Prof. P. M. Singru**, Department of Mechanical Engineering, along with Mr. Ayush Raizada, Mr. Vishnuvardhan Krishnakumar, Mr. Akhil Garg, won a Best Paper Award for their work on "Modeling of a Magneto-Rheological (MR) Damper using Genetic Programming" presented in 12th IPRoMM National Workshop on Industrial Problems on Machines & Mechanisms from 22nd – 23rd December, 2016, held at VNIT, Nagpur.





# Significant Projects

PRINCIPAL INVESTIGATOR & NAME OF THE DEPARTMENT	TITLE OF THE PROJECT	FUNDING AGENCY AND AMOUNT (RS. LAKH)
Dr. Prasanna Kumar Mathematics	A Study on the Bernstein- type inequalities for the polar Derivative of a Complex Polynomial.	CSIR 16.46
Dr. Gauranga Charan Samanta Mathematics	Study on dark energy, dark matter and cosmic acceleration of the Universe in modified gravity.	CSIR 16.96
Dr. M. Srikanth Biological Sciences	Demonstration of river Sal cleaning by vertical wetland and river bank filtration.	DBT (river cleaning) 50.15 (BITS share out of total 68.85)
Dr. M. Srikanth Biological Sciences	Small Scale and sustainable household wastewater recycling	DST/MHRD under IMPRINT scheme 31.92
Dr. Gaurav Singh Mechanical Engineering	Higher Overall stiffness of triangular shaped ductile/ brittle Lattice Composite Structure compared to square and hexagonal shaped structure.	SERB 44.63
Dr Varinder Singh Mechanical Engineering	Study of lubricant and application method for enhanced surface finish and reduced draw load on cold drawn steel tubes.	Tube Investments of India Ltd, Chennai (Murugappa Group) 27.44
Dr M Srikanth Biological Sciences	Sanitation, water and solid waste for development.	Agreement between EAWAG, Switzerland and BITS, Goa 7.26
Dr. Ashwin Srinivasan CS &IS	Knowledge- Rich Deep Models from Optimisation.	SERB 22.50
Dr. Raghu Nath Behera Chemistry	Computational Study of the Catalytic Mechanism Some Diaryldiselenide-based Glutathione peroxidase Mimetics.	SERB 16.42

# Significant Projects

PRINCIPAL INVESTIGATOR & NAME OF THE DEPARTMENT	TITLE OF THE PROJECT	FUNDING AGENCY AND AMOUNT (RS. LAKH)
Dr. P. Danumjaya Mathematics	Predictive Mathematical Modeling and Analysis for Effective Diagnosis and Control of Diabetes mellitus with associated Co-infections Diseases among Indians.	SERB 15.68
Dr. Anoop S. Kumar Economics	Rationality, Uncertainty and cognition if financial markets: An Experimental Approach.	IUCAE, University of Kerala 0.75
Dr. Neena Goveas CS&IS	Development of Remotely configurable Arbitrary Ramp Generator for Frequency modulated continuous Wave Reflectometry.	DAE-BRNS 28.02
Dr. Prasanna Kumar N Mathematics	A Study on the inequalities involving complex polynomials.	National Board for Higher Mathematics, DAE 13.04
Dr. P. Dhanumjaya Mathematics	Theoretical and numerical study of elliptic and parabolic partial differential equations with interfaces	National Board for Higher Mathematics, DAE 13.48
Dr. M. Srikanth Biological Sciences	Developing Bioactive Compound - Enriched Functional Food Ingredients from Dillenia indica and valorization of its pomace.	DBT, Twinning Projects for the NE-2015 16.86 (BITS share out of total cost 4215000)
Prof. Srinivas Krishnaswamy Chemical Engineering	Theoretical and experimental studies on Unmixed Steam reforming for Hydrogen application.	DST-SERB / Bharat Petroleum Corporate R&D 56.11
Prof. S. D. Manjare Chemical Engineering	Environmental Impact assessment studies on increased production of Pretilachlor.	Deccan Fine Chemicals (India) Pvt Ltd., Hyderabad. 1.73

# Significant Projects

PRINCIPAL INVESTIGATOR & NAME OF THE DEPARTMENT	TITLE OF THE PROJECT	FUNDING AGENCY AND AMOUNT (RS. LAKH)
Dr. Amrita Chatterjee Chemistry	Design and synthesis of grapheme oxide based AIE-sensor for selective detection of Hg(II) and Organic mercury in aqueous medium.	UGC- DAE Consortium for Scientific Research Proposal 7.03
Dr. Kundan Kumar Biological Sciences	Study on the role of Tonoplast Intrinsic Protein Family members in arsenite accumulation and their transport in rice.	BRNS 29.39 (BITS share out of total 68.85)
Dr. P. Nandakumar Physics	Studies on biomolecular transport through nuclear pore complexes using a dual fluorescence channel confocal microscope.	SERB 44.04
Dr. Prasanta Kumar Das Physics	Signature of Space-time noncommutativity in high energy colliders.	SERB 18.85
Dr. Pravin M. Singru Mechanical Engineering	An Acoustic Study characterization and standardization of the Sarasvati Veena.	SERB 36.95
Dr. Jayadevan K.P. Chemistry	Experimental and Computational study of Boron Doped TiO <sub>2</sub> and ZnO Nanocrystals.	SERB 23.32
Dr. E. S. Kannan Physics	Room temperature Hydrogen Storage and sensing using Reduced Graphene Oxide-MoS <sub>2</sub> Nanocomposites.	SERB 30.61
Dr. Ram Shanker Patel Physics	Spin seebeck Effect in novel heterostructures.	SERB 50.83
Dr. Gaurav Singh Mechanical Engineering	Crack growth direction in amorphous silica under extreme temperatures using molecular mechanics (application to Reusable launch Vehicle (RLV).	ISRO Head Quarters, Department of Space, Bangalore 16.08
Dr. Amrita Chatterjee Chemistry	Development of PCDA-liposome based detection kit for Alzheimer's disease biomarker.	SERB 26.63



# student achievements

## Team Hyperloop India

In 2016, SpaceX developed a one mile test track and CEO Elon Musk launched a worldwide challenge to student engineering teams to build hyperloop pod vehicles to race on this track. The objective was to test out the concept for a new mode of transport. A group of undergraduate students from BITS Pilani which included 16 students from our campus decided to take up Musk's challenge and built the Team Hyperloop India. After multiple rounds and design reviews, the BITS Pilani team was the only team from India and one of the two from Asia, selected to build and race the pod on the SpaceX track.

## Drone Nation won the Nidhi Prayas Grant

The startup "Drone Nation", by our students Vichar Shroff, Chetan Reddy & Nikhil Khedekar, was selected for receiving incubation support and finance grant from Nidhi-Prayas, DST, Government of India. The aim was to develop a Drone for Agriculture at the iCreate campus in Ahmedabad. Drone Nation is one of the 5 teams selected in the final round from among more than 2000 teams that participated from the entire country. NIDHI-PRomotion and Acceleration of Young and ASpiring innovators and start-ups (PRAYAS) is a DST program that focuses on supporting innovators to develop their innovative idea into a prototype and also turning nurturing ideas and innovations into successful startups. The selected innovators get access to prototype grant of up to Rs.10 lakhs, infrastructure, and mentorship, thus bridging the gap between idea and prototyping.

## Baptizer 2017

On 2nd February 2017, six students from the drama club of our campus went to Christ University, Bangalore, for their drama competition - Baptizer. Baptizer is one the biggest collegiate drama competitions in India, with around thirty colleges sending in plays every year.

The Drama Club put up an adaptation of Riverside Drive (a play written by Woody Allen). It was directed by Arnav Pathak. Rahul Parashar from our group was adjudged the best performer at the event - selected from over fifty performers from all the other plays put up. The six students who went for the competition are

Arnav Pathak, Rahul Parashar, Avinash Biju, Nidhi Ravishankar, Anirudh Mehra and Aditi Sathe.

**Avidipto Chakraborty (2012B3A7506G)**, a student of BITS Pilani, K K Birla Goa Campus, topped CAT 2016 with a 100 percentile score, beating 2.3 lakh applicants competing for admission to the prestigious Indian Institute of Management and other elite business schools. Focusing on mock tests and the analysis generated therein, he pulled off this academic achievement without enrolling for coaching classes.



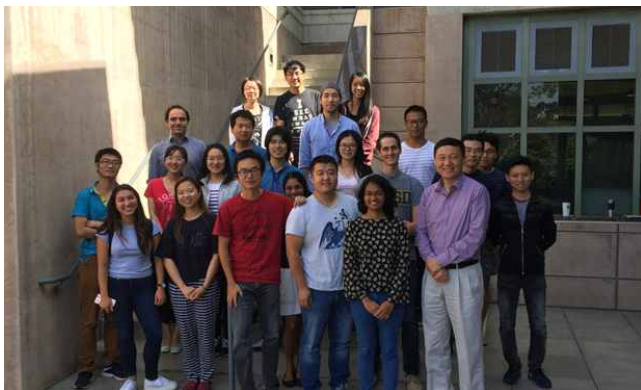
**Rachith Aiyappa (2014B4A7469G)** finished runner up in the Mens' Singles Lawn Tennis event conducted by Clube Tennis De Gaspar Dias in association with the Goa State Tennis Association (GSTA). It was an all Goa Ranking tennis tournament conducted in Jan. 2017.



**Devansh Raj Sharma (2012B1A3662G)** co-authored a research paper during his internship from January to June 2017. Details: Michael S. Werner, Bogdan Sieriebriennikov, Tobias Loschko, Suryesh Namdeo, Masa Lenuzzi, Mohannad Dardiry, Tess Renahan, Devansh Raj Sharma, Ralf J. Sommer; *Environmental influence on Pristionchus pacificus mouth form*

through different culture methods; Scientific Reports 7, 7207 (2017); doi:10.1038/s41598-017-07455-7; published: 3rd August 2017.

**Urvashi Jain (2014B1A70697G)** has completed a two-month summer internship at the University of California San Diego, CA, USA, under the mentorship of Prof. Bing Ren at the Ludwig Institute for Cancer Research on a project involving "the study of epigenetic regulation in cancer stem cells." The project focused on whole genome screening in glioblastoma cancer stem cells to identify the potential tumor suppressor genes and oncogenes as well as shed light on their gene regulation by identifying epigenetic marks on these genomes. She got this opportunity after being awarded the Khorana Scholarship which was conducted in joint support by the Department of Biotechnology, Government of India, Indo-US Science and technology Forum (IUSSTF) and WINStep Forward. This scholarship funded all the expenses including travel, accommodation and health insurance apart from a stipend of \$2500 for the two months.



**Yashasvi Joshi (2013A8PS751G)** graduated this year with a score of 99.80 percentile in CAT 2016. Subsequently, she got calls for interviews from all IIMs and offers for admission to the top IIMs like IIM Ahmedabad, Bangalore, Calcutta, Lucknow and Indore. Currently, she is studying in IIM Ahmedabad (Batch of 2017-19).

**Rohan Goel (2014A7PS014G)** secured two internships abroad one in May-July 2017 at Dublin Institute of Technology in Ireland and the other in August-December 2017 at LIRMM, University of Montpellier in France. Moreover, one of his papers along with Prof. RK Roul has been accepted in 7th International Conference on *Pattern Recognition and Machine Intelligence* ([www.isical.ac.in/~premi17/index.php](http://www.isical.ac.in/~premi17/index.php)) which is scheduled to be presented in December after which it will be published.

**Ketan Pant (2013A8PS413G)** received an admit from Stanford University for his Master's in Electrical Engineering and is pursuing the same starting September 2017. He was also among the 59 of the 1186 applicants to be awarded the K.C Mahindra Scholarship for post graduate studies abroad for the year 2017. He was also 1 of the 3 students to be awarded the BITSAA Graduate Application Scholarship for 2017.

**Siddharth Kumar (2014A1PS545G)**, a 4th-year undergraduate majoring in Chemical Engineering, is currently pursuing his Thesis (Internship) at a joint lab of Massachusetts Institute of Technology, Harvard University and Brigham and Women's Hospital in Boston.

**Dhanajai Sharma (2014A3PS197G)** is currently working as an Intern at Acoustic Research Laboratory, National University of Singapore.

**Jiss Maria Louis (2015PHXF401G)**, a PhD student from the Department of Biological Sciences, won the Best Oral Award (First Position) at National Conference of Young Researchers 2017 conducted at Goa university from 16th-17th March for the talk entitled "TNF alpha mediated alternative splicing in type 2 diabetes: a genome wide approach".

**Vatsal Tolasaria (2013B2A1684G)** won the 2nd Place at the *All Goa open major Ranking Tennis singles Championship*, at BPS Margao, Organized by BPS Club Margao, Goa

## TEDx 2017

TEDxBITSGoa is a conference that wholeheartedly embraces the concept of 'ideas worth spreading.' Dedicated to creating a platform that integrates multiple fields without restriction to create a highly diverse speaker line-up, the team of TEDxBITSGoa creates a highly enriching and thought-provoking experience every year. Ideas can take many forms and they can broadly be classified into Technology, Entertainment and Design, which form the acronym, TED with x standing for independently organised TED event. The previous editions have seen the likes of Sonam Wangchuk, Kalki Koechlin, Piyush Mishra and many more eminent personalities from various fields grace the conference. TEDxBITSGoa is the only such conference in BITS Goa, which has historically created such platforms of cross-cultural linkages and would continue to do so in the future



# Quark 2017

Former advisor to Dr. APJ Abdul Kalam. One of the most followed writers on Quora. Ex-Union Minister. An astrophysicist who challenged Stephen Hawking. Founder of Trello and Stack Overflow. A brain-controlled helicopter. LED, UV dance performance. Women empowerment. International participants. Deep learning. Finance optional strategies. Ever wondered what is common to all of them?

Yes. All that and much more.

Quark, the annual techno-management festival of BITS Pilani, K.K. Birla Goa campus, is zooming towards becoming one of the most popular and successful college technical fests across India. Quark 2017, with the theme of "Shifting Paradigms" attests to that. It was held from 3rd to 5th February and witnessed huge participation, with a footfall of 30000, from colleges and schools across India and abroad.

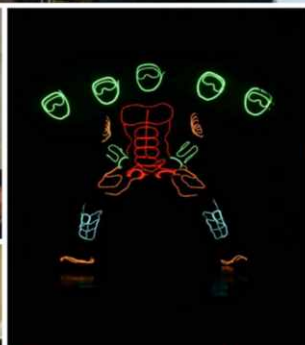
Day 0 started on 2nd February'17, 5 p.m. with the inauguration ceremony being held in the presence of the Director, BITS Pilani, K.K. Birla Goa campus, and the chief guest, Rear Admiral (Retd) Shekhar Mital, M.D. of Goa Shipyard Ltd. The heart-warming ceremony featured Vivek Patil, who used sand art and radioactive light art to enthrall the audience. It was followed by a splendid performance using shadow plays and fluorescent lights by the Mime Club of the college.

Enthusiasm and anticipation lingered in the air as the audience cheered and encouraged every speaker and every performer on stage. The lighting of the lamp and the declaration of opening the fest was met with much applause. Expectations were high and there was much pressure on the fest and the organising committee to deliver on the promise of conducting a bigger and better fest than ever.

The three days, Days 1, 2 and 3, that followed did just that. A flurry of activities and emotions marked the days during which Quark' 17 was held. There was something for everyone. Events like Carpe Dictum saw literary eloquence and intellectual prowess like never before while events like MatMania, Digilogica, RoboSumo, Mortar Combat, Trailblazers, Cubing and the Quark National Quiz'17 saw fierce competition as participants tried to build robots, connect circuits or/and think of the right answer to the next quiz question. MATKA, credited with being one of the biggest national collegiate gaming competition, for the players of CS:GO and DOTA, had people playing all day and all night long to clinch the trophy while the debutant BITS CTF, based on hacking and cryptography, saw competition between 500+ teams.

Exhibitions of gadgets like Robotic hand and brain-controlled helicopter were major attractions, which were admired and appreciated by all.





Eminent companies held workshops, conducted by learned and noted professionals, which drew a large number of participants from across the country. Some of them were Financial Planning and Option Strategies by Bajaj Finance, WorldQuant and Zerodha, MathWorks App Development, Texas Instrument WebBench, Cisco Networking, AutoDesk Product Design, NVIDIA Deep Learning and Sabre Big Data Computation.

Perhaps the most anticipated events were the Guest Lectures, which saw a packed auditorium and eager listeners. The Guest Lecture list consisted of very notable and famous names like Dr. Subramanian Swamy, ex-Union Minister and member of Rajya Sabha; Joel Spolsky, creator of Trello and founder of Stack Overflow; Balaji Vishwanathan, Vice-President of Invento and one of the most followed writers on Quora; Dr Abhas Mitra, astrophysicist, best known for resolving the Black Hole Information Paradox; V.S. Sampath ex-Chief Election Commissioner of India; K. Vaitheeswaran, father of Indian e-commerce; and Rohit Gandhi, Chief Editor of OneNews. The speakers inspired the audience with their excellent speeches and interacted with them in Q&A sessions.

The Aurora Nites provided the perfect complement to the ongoing technical events. There were performances by The Indian Jam Project, India's only bagpipe artist "The Snake Charmer" aka Archy Jay, electric Bollywood cellist Alison Gabrielle, LED-UV dance crew Illuminati and EDM DJ Drummer Sonic Snares.

Apart from the onfest events, Quark'17 also organised programmes throughout the year. They include the very popular Teqflix Talks, the TeleP lecture series of Quark, which featured virtual talks by Suresh Prabhu, Honorable Railway Minister, Govt. of India; Jaap Haartsen, Bluetooth inventor; and Adam Cheyer, Siri co-founder. Its CSR initiatives like RED and whY Chromosome helped promote the use of technology in solving social problems through blood donation camps and awareness drives.

Quark' 17 was a wonderful journey; A journey of how technology helps improve lives, of how people inspire, of how science is about discovery and rediscovery. It celebrated the spirit of challenging dogmas, of thinking out-of-the-box, of the courage to dare – because these are what truly result in shifting paradigms!

## **BITSMUN**

What began as a humble event in 2008 is well on its way to becoming the largest international college MUN in India and Asia – if the success and popularity of the 2017 edition is anything to go by.

A word, (or more like a sentence) to the naive readers - Model United Nations, also known as Model UN or MUN, is an educational simulation and/or academic activity in which students can learn about diplomacy, international relations, and the United Nations.

BITSMUN 2017, held over 3 days from 3rd to 5th February, witnessed huge participation from all over the country and the world with over 300+ delegates and more than 30 international delegates from 8 countries, including Bangladesh, Kazakhstan and Afghanistan. Every year, a number of UN committees including a special committee is hosted which has eventually become a trademark of BITSMUN Goa. Agendas of the various committees consist of relevant and comprehensive topics like "The issue of Islamophobia," "Mutual cooperation to eliminate terror and enhancing confidence building measures" (Indo-Pak) and "Protecting victims of human trafficking in conflict and post-conflict situations." Each of the committees consists of members of the Executive Board (EB)/the Chair who presided over the proceedings of the day, the delegates, representatives of different countries and members of the International Press who would report the day's events.

The MUN began with an official opening ceremony after which the delegates were escorted to their committee rooms. Well-reasoned arguments, thoughtful discussions, points of order, points of inquiry, demands and accusations flew around the rooms as the delegates raised their placards high to be recognised by the Chair. People striving to be heard during the General Speakers List, the moderated caucus and the unmoderated caucus ensured that the momentum of the conference never slowed down. The members of the International Press could be seen trying to make sense of the proceedings, furiously noting down the important points to be reported later on. Three days of heated negotiations and discussions finally concluded in resolutions being passed by the various committees. The closing ceremony concluded the 3-day event where the members of the EB received tokens of appreciation.



for their time and efforts. The best delegates from each committee were honored with awards and titles consisting of the Best Delegate, Honourable Mentions and Special Mentions.

“BITSMUN'17 was one the best experiences of my life” became an often-heard review statement after the ceremonies were over. A relatable statement for people who've MUNed, especially BITSMUNed before and an easily understandable one for those who haven't. MUN is not only a competition to win, it is the time to listen and to be heard, the place to gain confidence and friendships. Those intense hours of negotiation, critical

thinking, witty repartees help you grow as an individual, help you learn to empathize and to care, help you to inculcate knowledge about international affairs. BITSMUN is all this and much more. The Organising Committee works fiercely every year to deliver one of the largest international MUNs that Indian MUNners wait for.

With BITSMUN 2017 well done, the coming edition of BITSMUN Goa 2018 - BITSMUN X - the 10th edition, promises to be bigger and better than ever before.

## Spree 2017

Labs. Assignments. Tutorials. Exams. Sometimes, it becomes imperative to break the shackles and bring, albeit transient, a hiatus to the monotony of academic strand of the college life: and what could be a better way to channel the surplus energy than sweating it out on the field? Spree, the annual sports fest of our campus, provided this opportunity in a manner so grand and impressive that by the time it was concluded, there remained an air of self-belief and we all knew how to summon our champion.

The biggest sports fest in India organized by an Engineering college, Spree 2017 had participants from colleges all over the nation—be it Jamia from Delhi or Flames from Pune—our campus played an amicable host by inviting participants and making all necessary arrangements to make them feel at ease. The three-day fest emerged from day zero, when all the qualifying and league stage matches took place.

Day one witnessed the temperatures soaring when the contestants took a leap forward and pushed their limits further to make it to the eliminators. When the dust finally settled, our men's and womens' basketball, football, tennis and squash teams had comfortably progressed to the next round. In store, we had an inspiring talk by the world cup winning captain, Mr. Kapil Dev, to wrap up the night. This talk was a perfect amalgamation of motivating quotes and the ticklish sense of humour he is famous for.

Imbibing the words of wisdom from the champion, the players stepped on the field on Day 2, rejuvenated. It was a fruitful day for our men's football team as they went past K.J. Somaiya college of Engineering in the quarterfinals, with an easy victory of 2 goals to none.

Whilst the fields got heated up owing to all the sporting actions that took place, there were umpteen number of stalls and events where people could just go and laze off for a while. Various fun competitions like the Hogathon kept the spirits of the audience from fading away during the short interims. The beautifully designed campus with awe inspiring figures of elite sportspersons were an absolute treat for the eyes. The night ended with 2 stand up performances by the best in the business, Mr. Abish Mathew and Mr. Sahil Shah.

On the ultimate day, Day 3, there were some jaw-dropping performances which changed the course of the play completely, and on a couple of occasions, the home team was on the receiving end: the football and basketball teams fought valiantly but couldn't make it past the semis.

The tennis team won the doubles competition and brought laurels to our campus. The three-day carnival of extreme competitiveness which left everyone breathless (in literal terms) couldn't have been







concluded any better than by the soul cleansing performances by the music band, THE LOCAL TRAIN, which enchanted everyone with their pristine lyrics and the tranquilizing music.

To sum it up, Spree 2017 lived up to the reputation the previous editions had set for it, in fact, it pulled off a lot more than that.

## SAE Club

The 'Grease Monkeys Supra' team of the college works with the objective to develop a Formula SAE (FSAE) vehicle as a student project. The team then represents the college at the 'Super Racing ' (Supra) event organised by the Society of Automotive Engineers (SAE India), which is a part of SAE International Team members from different branches and year of study work towards one passion: to improve upon their knowledge and build a car that stands out at the event aesthetically and innovatively. The newly inducted students of the club conduct extensive research about the basics of automotive design and are then included in the project of building the main car. The club gives importance to dedication towards the project rather than hierarchy. It is a great platform to get a hands-on approach to the designing and manufacturing of a race car.

Supra'17 was held from 26 June to July 1 at the Buddh International Circuit at Greater Noida. The event saw 126 teams from different colleges all over India. The team took their car 'SIEG 3.0' at the event, representing the college at the national level. It was the third outing at the event for the team. The event included static and dynamic components judged by automotive experts, in which the team took part. Factors like weight reduction by changing structural materials was part of improvisations in the car. In the end, the judges appreciated the design and hard work put in by the team into the project. Overcoming various odds in the project, the team put up a car that outperformed the previous one.

On the other hand, the SAE Baja team of the SAE BITS Pilani Collegiate Club strives towards perfecting their attempt at designing and fabricating an all-terrain vehicle (ATV). The Baja '18 team consists of 23 dedicated engineers who spend no less than 15-25 hours a week on this project. Every imaginable aspect, from sponsorship to material procurement is handled by the student team.

The event itself consists of various technical events and is topped off with an endurance race which lasts for about four hours. Top colleges from across the country can be witnessed fine-tuning and racing their ATVs against one another. Static events such as design, cost, and sales presentations also carry a huge amount of the team's performance characteristics. This year's car from the Greasemonkeys team is undergoing heavy changes from the previous version, which involves a plethora of custom-made parts, contributing to a bulk of weight reduction.

The club also witnessed India's first F1 racer, Narain Karthikeyan, deliver a spirited talk about the challenges he encountered.



## NIRMAAN

Nirmaan Goa Chapter had a remarkable gamut of activities executed through its various project related to Education, Employment and Health. Various events were organised at the pan Goa level in association with different Clubs and Organisations. Nirmaan Goa has continuously running projects in Zari, Birla, Lamani settlements which aim for upliftment of their community.

❖ Udaan is a sports event for specially-abled children. Children from special schools across Goa are invited to participate in various sports and fun activities. This event is a platform for students across Goa to showcase their hidden talents. More than 250 specially-abled children participated in 8 sports. Workshop and fun activities were organised for the participants. Certificates and Medals were distributed to the winners.

❖ Nirmaan Talks is a platform to bring out the stories of the unseen heroes, the small good deeds and showcase them to the world. The talks aim to inspire people to work for the betterment of our society. The speakers at the first edition of Nirmaan Talks were:

- Anshu Gupta (Founder, Goonj)
- Harish Iyer (Equal Rights Activist)
- Mathew Cherian (CEO, HelpAge India).

❖ As a part of Project Shiksha, we trained 20 students from Zari for one year and prepared them for Jawahar Navodaya Vidyalaya Selection Test. The results of the exam were declared in July and 4 of our students qualified the exams. These students are now entitled to receive free education in JNV South Goa till class 12.

❖ "Holi is the day to express love and care via colours. "With this thought in mind, Nirmaan Organisation-Goa Chapter organised a trip to Father Agnel Orphanage in Verna to fill colours in the lives of kids and staff there. The participation from BITS students was overwhelming, and the participants had a time that they will cherish for life.

❖ Not everyone is born the same, yet it is the humanity of those born with better resources to try and bring everyone to par. Everyone can be involved in improving a life because every small deed counts. We would like to thank all faculty, staff and students for contributing their clothes, unused stationery and partially filled notebooks to the Cloth and Paper Collection Drives and helping us bring a smile on someone's face. We would like to thank all faculty, staff and students for their contributions.



In addition to these events, Nirmaan Goa Chapter also:

- Celebrated Republic Day in Zari, Birla and Lamani Colony.
- Organised a Sign Language workshop in association with Enable India Foundation.
- Hosted Dinner on campus for our students from Zari and Lamani Colony.
- Conducted a book donation drive to make a book bank in Zari Government School.

- Organised Child Sexual Abuse awareness session in Zari with ARZ.
- Distributed sweets to working staff of campus on the occasion of Diwali.

## LOHRI CELEBRATION

Lohri is celebrated each year to mark the end of the winter days and welcome the longer sunny days in a traditional manner. Primarily this festival is celebrated by Sikhs and Hindus from Punjab region. The Punjabi Virsa club of our campus celebrates Lohri each year with great fervour and zeal. The club brings to life the entire campus through a series of events which please one and all. The celebrations are of two-days wherein the first day consists of the traditional bonfire of Lohri. Girls and boys dance around the holy fire and perform their prayers. The lighting of the bonfire is an ancient tradition which makes this festival more auspicious. Following the bonfire, a DJ night was organized where students danced to latest numbers, relieving their day's stress. The second day of the celebration consisted of a special lunch organized to treat everyone to sumptuous Punjabi delicacies. Faculty members and students came in large numbers to enjoy the Punjabi meal. The last part of the celebration consisted of an entertainment night in the auditorium of the campus which was appreciated by all. The program consisted of a comedy segment which left the audience rolling with laughter. Rahul Subramanian and Angad Singh Ranyal made it one of the best comedy nights of the campus. Saving the best parts for the last, there were foot-tapping dance and music performances by Punjabi Virsa. The evening ended with a bhangra performance; thus making it a night to remember. Punjabi Virsa, like every year, put up a great show through all its efforts and celebrated Lohri with full vigor.





## Faculty members from various disciplines have been appointed as members of National and International advisory committees / acted as reviewers for books in journals of national and international repute

Faculty & Department	Editorial/Review
Dr. Kiran D. Mali Mechanical	Reviewed two papers for Journal of <i>Vibroengineering</i> , Manuscript titles 1) Research on local rub fault transfer mechanism in rotor system 2) Engine power measurement without external load based on vibration signal)
Prof. P. M. Singru Mechanical	Editor of <i>Journal of Vibro-engineering</i> and <i>Journal of Measurement in Engineering</i> . Reviewer of <i>Measurement Elsevier Journal</i> .
Dr. Debasis Patnaik Economics	Reviewed a paper on Tribal Welfare for <i>Journal of Manpower Planning</i> , back office of Niti Aayog in 2017.
Prof. Mainak Banerjee Chemistry	Reviewed papers from ACS and RSC publishing house. Reviewed projects from CSIR. Annual Member of ACS
Prof. Ranjan Dey Chemistry	Reviewed papers for <i>Journal of Molecular Liquids</i> , <i>Journal of Solution Chemistry</i> , <i>Indian Journal of Chemistry</i> , <i>Journal of Indian Chemical Society</i> . and for 5th Global International Conference on Materials Science and Engineering (CMSE), Taiwan.
Prof. Prasanta Kumar Das Physics	Reviewer for <i>European Physical Journal C</i> .
Prof. Meenal Kowshik Biological Sciences	Reviewed manuscripts for the journals <i>ACS Biomaterials Science &amp; Engineering</i> , <i>Journal of Hazardous Materials</i> , <i>Biotechnology Progress</i> , <i>Journal of Advanced Ceramics</i> , <i>Journal of Biomaterials Applications</i> , <i>Journal of Environmental Science</i> , <i>Nanomedicine</i> , <i>Biological Trace Element Research</i>
Prof. N. N. Ghosh Chemistry	Reviewer for <i>ACS Sustainable Chemistry &amp; Engineering</i> , <i>Journal of the American Ceramic Society</i> , <i>Journal of Magnetism and Magnetic Materials</i> , <i>Powder Technology</i> , <i>IEEE Transactions on Magnetism</i> , <i>Materials Science and Engineering B</i> , <i>Applied Catalysis B: Environmental</i> , <i>Chemistry Select</i> , <i>Journal of Inorganic and Organometallic Polymers and Materials</i> , <i>Journal of Hazardous Materials</i> , <i>Microporous &amp; Mesoporous Materials</i> , <i>Chemical Engineering Journal</i> .
	Appointed as one of the Editorial Board Members in the journal titled <i>Advances in Nanomaterials</i> published by Science Publishing Group, USA.(based on vibration signal)
Prof. Amrita Chatterjee Chemistry	Reviewed papers from ACS, RSC, Elsevier and Wiley publishing house; Annual Member of ACS
Dr. Arnab Banerjee Biological Sciences	Reviewed manuscripts for <i>Journal of Molecular Histology</i> , <i>General and Comparative Endocrinology</i> , <i>Scientific Reports</i> - Nature Publishing.

## Faculty members from various disciplines have been appointed as members of National and International advisory committees / acted as reviewers for books in journals of national and international repute

Faculty & Department	Editorial/Review
Dr. Rayson K. Alex Humanities	Co-edited Book published: Alex, Rayson, S. Susan Deborah, Reena Cheruvalath and Gyan Prakash. Eds. <i>Ecocultural Ethics: Critical Essays</i> . USA: Lexington, 2017.  Member of the Board of Reviewers of the <i>Journal of Creative Communications</i> (Sage Publishing in association with MICA - the school of ideas, Shela, Ahmedabad, India). Member of the Editorial Board of the <i>American Journal of Indic Studies</i> published by the American Academy of Indic Studies, USA. Reviewed essay entitled "The Myth of Yakshi and Its Impact on the Culture of Kerala" for the journal titled <i>Folklore</i> published by Taylor and Francis Reviewed essay "The Bibliographic Menagerie: Notes toward an Ecocritical Print Culture Studies" for the journal titled <i>ISLE: Interdisciplinary Studies in Literature and Environment</i> published by Oxford University Press
Mr. Tirtharaj Dash Computer Science & Information Systems	Reviewed articles for the journals: <i>Neural Processing Letters</i> (Springer), <i>International Journal of Image Mining</i> (Inderscience), <i>International Journal of Image and Data Fusion</i> (Taylor & Francis).

## university immersion

**Dr. Rayson K. Alex**, Department of HSS, was awarded University Immersion Grant to visit University of California, Los Angeles, (UCLA) from June to July 2017. Under the guidance of Prof. Ursula K. Heise, a paper entitled "Voices of Eco-resistance in India: A Critique of Neoliberal Natures" was conceptualized during the visit.



## industry immersion

**Prof. Basavadatta Mitra**, Department of HSS, was involved in the industry at Piramal Foundation, Baggar, Rajasthan, from 20th May to 20th June 2017. She is currently researching on various public-private

partnership/hand-holding models of District/State Transformation Programmes, through which a sustainable model of change is implemented in the area of rural primary education. Piramal Foundation for Education Leadership is one such success story as a sustainable change-agent.

She is also working on a project, which is being readied, in collaboration with the Department of Psychology, St. Xavier's College, Mapusa, Goa, to study the likely behaviour change that the Fellows of Gandhi Fellowship, constituted by Piramal Foundation, undergo during the two-years they spend in various rural/remote locations and whether this behaviour change can impact their success as they climb the ladder of professional success.



# introducing new faculty

Name of Faculty	Department	Designation	Area of Research Interest
Akshay Rane	Mathematics	Assistant Professor	Applied Mathematics
Vivek Rangarajan	Chem. Engg.	Assistant Professor	Biochemical & Environmental Engineering
Ashish Chittora	EEE	Assistant Professor	Communication Systems and Networks
Pradeep Kumar Sow	Chem. Engg.	Assistant Professor	Transport Phenomena
Sandeep Jose	Mech. Engg.	Assistant Professor	Design Engineering
Shivam Verma	EEE	Assistant Professor	Microelectronics & VLSI
Bhupendra Reniwal	EEE	Assistant Professor	Microelectronics & VLSI
Sandeep Singh	Mech. Engg.	Assistant Professor	Design Engineering
Sukumar Vellakkal	Economics	Visiting Assistant Professor	Macroeconomics Policies and Health, Impact Evaluation, Universal Healthcare
Hrishikesh Sonalikar	EEE	Assistant Professor	Instrumentation & Control
Richa Singhal	Chem. Engg.	Assistant Professor	Polymer Science and Engineering
Rahul Thakur	CS & IS	Assistant Professor	Systems & Computer Networks
Anirban Roy	Chem. Engg.	Assistant Professor	Polymer Science and Engineering
Parichay Patra	Hum. & Soc. Sci.	Assistant Professor	English Literature, Cultural Studies, Film Studies
Sharad Sontakke	Chem. Engg.	Assistant Professor	Biochemical & Environmental Engineering
Swati Agarwal	CS & IS	Visiting Assistant Professor	Social Computing and Security Informatics



# editorial board

Name	Email ID
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## Faculty:

Meenal Kowshik	meenal@goa.bits-pilani.ac.in
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Indrani Talukdar	indranit@goa.bits-pilani.ac.in
Rajorshi Sen Gupta	raajorshis@goa.bits-pilani.ac.in

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Mohammed Anjal	f20160238@goa.bits-pilani.ac.in
Anjali Arora	f20160734@goa.bits-pilani.ac.in
Akshay Gupta	f20150699@goa.bits-pilani.ac.in
Atishy Rathi	f20150776@goa.bits-pilani.ac.in



# BITS Pilani

K K Birla Goa Campus

## mediaspeak

### BITS Goa students earn laurels in sports at Dubai and Goa



**Basketball (Girls) Team and Badminton (Boys) Team of BITS Pilani K K Birla Goa Campus won laurels at the recently held Inter-Collegiate University Annual Sports Meet held at Dubai. The Basketball (Girls) team of BITS Goa campus was declared 1st Runner-up in the final played against students of Henric Watt University, UK. While the badminton (Boys) team of BITS Goa campus won the title against students of BITS Pilani Campus.**

Inter Collegiate University Annual Sports Meet was held at BITS Dubai campus and participated by various colleges and universities from different countries. Legendary Argentinean footballer Diego Maradona presented the award as its Chief Guest.

### National conference on 'New Frontiers in Chemistry' held

BY A STAFF REPORTER  
reporters@gomantakimes.com

**Vasco:** The Department of Chemistry, BITS Pilani K K Birla Goa Campus, Goa recently organised a two-day national conference on "New Frontiers in Chemistry - From Fundamentals to Applications" (NFCEA2017).

This was the second edition of NFCEA.

### Fabrication laboratory 'Sandbox' inaugurated

**Vasco:** Prof G Raghurama, director, BITS Pilani K K Birla Goa Campus inaugurated fabrication laboratory 'Sandbox' on Saturday.

The lab supports students to develop their innovative ideas into products. The knowledge acquired from class rooms and practical skill achieved through experiments can be made into new, innovative products.

advanced sensors, integrated chips, and prototyping boards.

The 3D Printer in the lab can manufacture objects using computer drawings and 3D Scanner can convert real objects in to computer designs. The Laser cutter can engrave and slice wood, glass and different polymers. Highly precise cutting and measuring tools are

### BITS Goa, Belgium university develop new technology

Team Herald

**PANJIM:** Adding another feature to its cap, BITS-Pilani K K Birla Goa campus has developed a technology to disinfect wastewater through electricity.

The project titled 'Empowered wastewater treatment system' was carried out by a team of professors and doctorate students of BITS and Ghent University in Belgium.

This project aims to develop a financially affordable and simple-to-operate device

The team is using electrochemical manipulation of water to change the pH to kill pathogens in the wastewater. He revealed that the team started with a small unit in the lab to demonstrate the system and subsequently built a system that serves a household of 10 people and a larger one for about 100 people.

The team, comprising BITS PhD students Guruprasad Talekar, Anant Yadav and Priya Sharma, and Ghent University professors Korneel Rabacy and Willy Verstraete is currently testing this larger system which is a small-scale

### BITS Pilani Goa campus student tops CAT 2016

BY A REPORTER  
reporters@gomantakimes.com

**Vasco:** Avidipto Chakraborty, a student of BITS Pilani, K K Birla Goa Campus, topped CAT 2016 with a 100 percentile score, beating 2.3 lakh applicants competing for admission to the prestigious Indian Institute of Management and other elite business schools.



### Former chiefs of Naval staff to speak at Goa Maritime Dialogues at ICG

BY A STAFF REPORTER  
reporters@gomantakimes.com

**Panaji:** The International Centre Goa (ICG) in association with the BITS Pilani K K Birla Goa Campus and the Indian Council for Social Sciences Research (ICSSR) will organise distinguished lectures under the series entitled Goa Maritime Dialogues.

The lectures will be delivered by former chiefs of naval

by Goa University Vice-Chancellor Prof. Varun Sahni. The programme is open to general public and will be held at The International Centre Goa, Dona Paula on Friday March 31 from 5.30 pm to 7.30 pm.

Those interested in attending may email their registrations to [provision@gomantakimes.com](mailto:provision@gomantakimes.com). Goa Maritime Dialogues (GMD) is an academic extension of ICSSR funded Maritime Project headed by Prof

### BITS STUDENTS HELP TO IMPROVE LIVES OF

BY NADIMANIEL TIVARY

**Panaji:** At a time when the gap between the young and the old is widening, resulting in increased cases of abuse against the elderly, BITS Goa has taken up the initiative by exposing their students to the life of senior citizens through the HGO HelpAge India.

It is vital to know that BITS has a close connection with HelpAge India and the elderly people. HelpAge India chief executive officer (CEO) Manish Chatur is a BITS Pilani alumnus.

BITS assistant professor Pravin Mani said, "After the second year of their Engineering we send them for internships to various NGOs as well. Almost thirty to thirty percent of our students are interested in social work."

Talking about the HelpAge India students can help in improving the lives of elderly people. Mani added that "Students should know about the problem and this would enable the youngsters to empathise with



The students of various BITS Institutes carrying placards spreading the message of elder abuse on the occasion of World Elder Abuse Awareness Day near the Our Lady of the Immaculate Conception Church, Panaji.

Currently, almost hundred BITS students are working with HelpAge India centres. According to Mani with such programmes and internships, it is possible to bring awareness in the society through students.

He further says more senior citizens are aware of the services provided by the NGOs.

He said that the students should not only be aware of the problem but also be able to help the elderly people in a situation like this.

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### Campus to host TEDxBITSGoa

BY A STAFF REPORTER

**Panaji:** BITS Goa campus is set to host TEDxBITSGoa, a non-profit event that aims to spread ideas worth sharing. The event is part of the TEDx series, which is a global network of local TED-style events.

The event is set to be held on Saturday, March 31, from 5.30 pm to 7.30 pm. The theme of the event is 'The Future of Education'.

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### Kapil Dev enthalls students

BY A STAFF REPORTER

**Panaji:** A special evening event was held at BITS Pilani K K Birla Goa Campus to celebrate the 50th birthday of the legendary Indian cricketer Kapil Dev. The event was attended by a large number of students and faculty members.

The event was held on Saturday, March 31, from 5.30 pm to 7.30 pm. The theme of the event is 'The Future of Education'.

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### BITS Goa successfully host Udaan-2017 - a sports

BY A STAFF REPORTER

**Vasco:** The first ever Udaan 2017 - a sports festival for the differently abled children and students was successfully held at the BITS Goa campus on Sunday as children with special needs participated in a host of sports events like badminton, judo, athletics, fully cricket, volleyball, and table tennis on an eventful day.

Udaan is an initiative by Nirman which is an organisation formed by out of the BITS Goa to reach out to the poor and marginalised sections of the society.

Nirman headed by Nishant Rathee, Bachel Agrawal and others decided to organise a sports festival for the differently abled children and students.

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### BITS Goa Economics Conclave 2017: A snapshot

BY A STAFF REPORTER

**Panaji:** BITS Goa campus successfully hosted the Economics Conclave 2017, a two-day event that aimed to provide a platform for students to showcase their research and ideas in the field of economics. The event was held on Saturday and Sunday, March 31 and April 1, from 5.30 pm to 7.30 pm.

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### Spree 2017 sports festival kicks off at BITS Pilani Goa campus

BY A STAFF REPORTER

**Panaji:** The BITS Pilani K K Birla Goa Campus has successfully kicked off the Spree 2017 sports festival, a two-day event that aims to provide a platform for students to showcase their sports skills and talents. The event was held on Saturday and Sunday, March 31 and April 1, from 5.30 pm to 7.30 pm.

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