



BITS Pilani
Pilani Campus

Semester-I notes 2014-15

bitscan

Pilani Campus



editorial

One more academic session, one more smart batch of passing out graduates and one more promising batch of incoming students! The magic continues, the aura remains, BITS delivers semester after semester new stories of success and new heights of learning. With every day spent on campus, life becomes easier and richer. Knowledge accumulates, and not just the textbook kind. May be the 'drudgery' for others, we BITSIANS call it the 'insti life'- the experiences that have shaped us and the cherished memories we recall every time we talk of BITS – a bit of it in all of us makes the whole.

BITSAT exam and Convocation ceremony are the alpha and omega of BITS students' career. One opens the door for new learning and wisdom, the second sends them out to serve the society and nation. The campus witnessed the convocation ceremony of 1330 graduating students and also the University attracted 16 Board toppers of Class XII who joined the three campuses of BITS Pilani. They come from various educational Boards across the country right from Jammu and Kashmir to Andhra Pradesh and from Assam to Uttarakhand. These top ranked students have been admitted under the category of 'Direct Admission to Board Toppers'. All other admissions to the university are based on merit determined by the online test, that is, BITSAT.

→ 16 Board Toppers joined BITS University



As the placement is round the corner, the companies are making a beeline for the BITS Pilani campus. With companies like LinkedIn, Google, Microsoft, Flipkart, Schlumberger, Goldman Sachs and Amazon visiting the campus, students are eyeing on big offers. All these companies have increased their compensation offer from 5% to 25%, indicating a better job scenario. The placement officer admitted that attracting these big

companies wouldn't have been possible without the support of the alumni who have wide network among companies. The institute is confident that by the end of April 2015, 100% students will get placements.

This semester Oasis gets bigger and better with a participation of over 4000 students hailing from 200 different colleges of the country. With the theme "That '90s Show", the Oasis enthralled everyone for a non-stop schedule of 96 hours. The most exciting events were the professional shows by Benny Dayal, the Mysore Brothers, Raghu Dixit, a street performance by Pierrick St-Pierre and East India Comedy by N2O. However, Sunburn was the most colourful and talked about dance event drawing the huge crowd in the Gym Grounds.

→ Oasis 2014 inauguration



A well begun semester was almost half done! But the latter half came with shock and silence. At the fag end of semester, we lost our Chief Warden Dr Champak Baran Das, a passionate teacher, compassionate friend and a genuine human being. We can never forget his infectious smile, 'everyone's friend' attitude and child-like energy that he exudes in every meetings and classes. I was lucky to get an opportunity to work with him in SWD. His office was flooded with young students seeking advice which he readily gave. A die hard students' well wisher, he always inspired them by his demeanor to rise above the ordinary. We wish him happiness and peace wherever he is and enough strength to his wife and son to overcome this situation.

Within our hearts and in our memories, those we love remain with us always.

→ Dr. CBD: His memories live forever in our hearts!



Convocation 2014

Birla Institute of Technology and Science (BITS) held its convocation ceremony for the Class of 2014 for graduating students of the Pilani campus. Mr. S. Ramadorai, Chairman, National Skill Development Agency and Vice Chairman, Tata Consultancy Services graced the occasion as the Chief Guest and was joined by BITS Vice-Chancellor Prof. B.N. Jain, Director of Pilani campus, Prof. G Raghurama, Mr. Kris Ramachandran members of Board of Governors, faculty members, students and their families.

→ Chief Guest addressing the graduates



827 graduating students of first degree, 242 higher degree students, 43 Ph.D. research scholars and 218 dual degree holders were awarded degrees on this occasion. In addition, five illustrious alumni of BITS were conferred Distinguished Alumnus Awards. They were: Prof. Anil Pahwa (Professor at Kansas State University) for Academic Teaching and Research, Prof. Gurindar S. Sohi (Professor at University of Wisconsin-Madison) for Academic Teaching and Research, Dr. Chandra Shekhar (Director, CEERI, Pilani) for Professional Management of Businesses, Mr. Pradeep Kashyap (Founder and CEO, MART) for Social Entrepreneurship and Mr. Raju Reddy (Chairman, BITSAA International) for Entrepreneurship.

Encouraging the new graduates to be entrepreneurs, the Chief Guest for the occasion, Mr. S. Ramadorai, National Skill Development Agency and Vice Chairman, Tata Consultancy Services, said, "For a nation to grow, it needs new initiatives, new beginnings and new 'entrepreneurs'. This is where each one of you come in....more and more young people are choosing entrepreneurship over a paid job. There have been a lot of budding venture capital firms which have shot up in the recent past and who are looking at investing in start-ups. Online sites like Kickstarter.com wherein you could put your idea and anyone in the world can fund your idea are completely redefining how funding is done for new

companies. Finally the Government of India is also interested in investing in start-ups. It recently announced a 10,000 Cr. allocation to creation of a 'Start-up fund' for new companies to help them in their initial start-up phase".

Expressing his views on the occasion, **Mr. Kumar Mangalam Birla**, Chancellor, BITS Pilani said, "We live today in times of unprecedented opportunities. You have the leeway to choose what you wish to do, the kind of job you would like to do, the kind of life you would like to lead. You have to believe in the power of your dreams. Believe in yourselves. Be perseverant and passionate and imagine your future.

Speaking on pursuing an agenda for research at BITS, **Prof. B.N Jain**, Vice-Chancellor, BITS Pilani said, "While today students in the undergraduate programmes account for nearly 88% of the student body, we expect the share of post-graduate and PhD students to grow from the current 12% to 22% by the year 2020. This change reflects our growing emphasis on pursuing an agenda for research that aims to grow the number of PhD students from the current figure of 732 to over 1600 by year 2020".

The Director of Pilani campus, **Prof. G. Raghurama** in his address to the audience appreciated the efforts of both faculty and students of the Institute. He shared the details to bring to the fore the fact that faculty and students have worked hard to bring laurels to the Institute during the year through their academic achievements. He also noted that Pilani Campus has been undergoing a lot of modernization and physical infrastructural change with the recent construction of New Academic Building and in the near future the construction of a new student hostel, a new Workshop building and a new Faculty Housing Complex will be complete.

→ Convocation 2014: Finally the much awaited moment!



FICCI Excellence Award

New Delhi: The Birla Institute of Technology and Science, Pilani has received the prestigious "Excellence in ICT integration" award given by the

Federation of Indian Chamber of Commerce and Industry (FICCI) during the first “FICCI Higher Education Awards 2014” ceremony held on 13th November, 2014 at New Delhi, as a part of the FICCI Higher Education Summit 2014. The award is given in recognition of the efforts made by BITS Pilani in exhibiting excellence in Information and Communication Technology integration in the sphere of Indian Higher Education. The award was open to all public and private higher education institutions and BITS Pilani was judged among the best the 60 institutions that participated.

→ FICCI Excellence Award to BITS Pilani



The award was presented by Mr. Greg Clark, Minister of State, U.K. for Universities, to Prof. B.N. Jain, Vice-Chancellor and Prof. R. K Mittal, Director, Special Projects, BITS Pilani in the presence of Smt. Smriti Zubin Irani, Hon'ble Union Minister for HRD and Ms. Nikki Randhawa Haley, Governor of South Carolina (USA), Mr. Mohandas Pai Chair, FICCI HE Committee.

The selection for the award was done by a high level Jury, chaired by Mr. M. Damodaran former Chairman SEBI, UTI and IDBI. Some of the other key members of the jury included Ms. Amita Sharma, Additional Secretary, Technical Education MHRD, Government of India, Mr. T V Mohandas Pai, Chairman, Manipal Global Education Services Pvt. Ltd., and Mr. K Venkataramanan, CEO & MD, Larsen & Toubro Limited (L&T).

Among other things, BITS was recognized for the use of ICT in conducting the online BITSAT exam since 2005, ERP integration for academic and administrative functions since 2013, Tele-Presence based classrooms and conference facilities since 2013, and for recent efforts to introduce e-Attendance and edX based MOOCs/SPOCs courses other than the massive ICT infrastructure, portals and the various application services/software developed in-house and being run since several years.

BITS Pilani Library Celebrates Teachers' Day

To commemorate Teachers' day, the BITS Pilani Library organized a unique activity for the students and teachers on 5th September, 2014. Prof. G. Raghurama, Director, BITS Pilani visited the library to encourage the staff and the students. He appreciated the idea of celebrating Teachers' day in a different way.

Over 150 students thronged the BITS library in the morning, braving the rainy weather to celebrate teachers' day. They were thrilled to learn about the unique wall paintings (Bhitti Chitra) representing Guru Shishya parampara (Teacher- Pupil relationship). Some of the notable ones represent famous stories such as that of Ekalavya and Guru Dronacharya, Lord Buddha, Aadi Shankaracharya, Guru Nanak, Lord Mahaveera and their disciples. These unique paintings also depict Lord Krishna teaching the Bhagvadgita to Arjuna, Lord Krishna himself learning from his guru, Sandeepani, and 'the Sermon on the Mount' showcasing Jesus giving sermons to his disciples.

→ Teachers Day celebrated in BITS Library



The students were given a tour of the magnificent library of BITS Pilani guided by Prof. Sangeeta Sharma, Department of Humanities and Social Sciences and the Librarian Mr. Giridhar Kunkur. They were shown a special display of books on 'the great teachers of the world and their works'. The collection consists of over two hundred titles on teaching, learning and the biographies of great philosophers and their contribution to the world of education. The collection also includes wonderful quotations by great teachers and world renowned philosophers as well as photographs of eminent personalities like Dr. S. Radhakrishnan who visited BITS Pilani in the year 1956 and in whose memory Teachers' day is being celebrated all over India. This display of books was kept open till 10th September, 2014 and users could pick and read books on the spot. Teachers' Day

cards were also distributed to the students which were specially designed for the occasion so that they could convey their gratitude to their beloved teachers.

Run for Unity

Birla Institute of Technology and Science, Pilani celebrated Sardar Vallabhbhai Patel's birth anniversary on 31st October, 2014. This day was observed as **Rashtriya Ekta Diwas** (National Unity Day) across the country. A **Run for Unity**, as a part of nationwide celebrations, was organized to commemorate the efforts made by Sardar Patel towards the unification of India.

The celebration commenced with floral tributes and the oath was administered by Prof. G. Raghurama, Director at Patel statue for the BITS community. This was followed by the Run for Unity around the New Academic Block.

→ Run for Unity in BITS Campus



Also, to create awareness about Sardar Patel's contributions in building united India, BITS Library organised a special display of books which includes a wide range of titles such as: *The Indomitable Sardar* by Panjabi, Kewal L, P., *Sardar Patel's Correspondence 1945-50* in 8 Volumes, *Life and Work of Sardar Vallabhbhai Patel* by Rajagopalachari, C., *My Reminiscences of Sardar Patel* by Shankar, V, Patel - *A life by Gandhi*, by Rajmohan etc. The display also featured rare photographs of Sardar Patel's visit to Birla College and Birla Balika Vidyapeeth at Pilani, as well as many of his quotes.

Future in our hands - Kiran Bedi

Moderating the final round for Crossfire - a themed panel discussion organized by Nirmaan - and addressing the audience on 'India In Your Hands' was one of the most inspirational icons of India - Kiran Bedi. Hardly warranting an introduction, the

former Magsaysay award winner spoke to the audience about the nationwide movement against corruption along with Swachh Bharat and how we need a robust political system at the core of our governance.

→ Dr. Kiran Bedi with Vice Chancellor and Director



After the talk, she also encouraged the audience to interact with her, giving them complete freedom to ask all the questions they wanted. As an overly zealous spectator asked about her views on westernization in India, he was taken aback by the cross-question, "What is westernization?" Insisting that a couple of ideas or certain fickle influences cannot change our basic ideals and that, in no way, is hindering us from staying true to our roots. Another voice came up from the audience, "We often attend these talks and get motivated but seldom is anything actually done in that regard." Reiterating the fact that a desire to change our society, to improve it for the better has to come intuitively from every person and it is this sense of social responsibility that should bind us to this cause.

Signing off, she talked about her experience as the Inspector-General of Prisons at Tihar Jail in the 1990s. At the jail, they used a commercial supplier to get bread for the prisoners. However, Dr. Bedi noticed certain discrepancies in the supplier chain, the quality of bread they were getting wasn't uniform and consequently, a lot of it was wasted. To counter this problem, she proposed to start a bakery run by the prisoners themselves and today, this bakery supplies all kinds of bakery goods throughout the state.

Undoubtedly an inspiration to all, Dr. Bedi's talk certainly left people not just motivated but genuinely enthused, giving them a lot to ponder upon and puzzle out.

academia: a confluence of ideas

Seminars/Conferences/Workshops/Training Programmes

Mathematics MATLAB Workshop

The Department of Mathematics organized a 5-day workshop titled "National Workshop on LaTeX and MATLAB for Beginners" (NWLMB-2014) during 24th - 28th December, 2014. The workshop aimed at providing a comprehensive theoretical and hands on experiences on LaTeX and MATLAB to the beginners. Dr. Trilok Mathur (Convener), Dr. Suresh Kumar (Co-Convener), Dr. Rakhee (Coordinator), Dr. Shivi Agarwal (Coordinator), Dr. Amit Kumar Verma (Organizing Secretary), Dr. Devendra Kumar (Organizing Secretary) and Dr. Sangita Yadav (Organizing Secretary) of the Department of Mathematics, BITS Pilani delivered the lectures and conducted the lab sessions. 75 participants from different universities participated in the workshop.

→ National Workshop on LaTeX and MATLAB



National Conference on Nano and Functional Materials (NFM-2014)

A National Conference on Nano and Functional Materials, (NFM-2014) was organized by the Department of Chemistry, BITS Pilani, Pilani Campus, during 7th - 8th November, 2014. About one hundred participants attended the two-day conference that witnessed 28 talks and 40 posters exploring a variety of research fields in nano and material science.

→ National Conference on Nano and Functional Materials



Prof. Anil Kumar, Head of the Department of Chemistry, welcomed the gathering and spoke about the work and participation of the Department in progressive teaching and active research in the Pilani Campus. The Convener, Dr. Inamur Laskar enlightened everyone on the conference theme. Prof. B. N. Jain, Vice Chancellor, BITS Pilani asserted the importance of interdisciplinary research. Prof. G. Raghurama, Director, Pilani Campus, reinforced the emergence of seamless platforms in cross-disciplinary research. The Chief Guest of the conference, Dr. Amita Gill, Director, DST Rajasthan presented the vision and mission of DST Rajasthan and emphasized on developing a scientific work-atmosphere in the society. She appealed to the gathering to focus on the growth of society by working on projects in Science and Technology. She also mentioned several schemes offered by DST Rajasthan, especially the "Student Project Scheme" and encouraged the young talent to avail of such opportunities to cultivate research aptitude. Dr. A. Ajaya Ghosh from NIIST, Trivandrum, delivered the keynote lecture on fluorescent molecular assemblies and discussed their applications in sensing and imaging. In the plenary lecture, Prof. Tarasakar Pal from IIT Kharagpur gave an overview on the role of metal and metal oxide Nano-materials in catalysis for meeting societal needs.

enriching the learning experience

visits by faculty

Prof. Rajiv Gupta, Department of Civil Engineering, presented a paper entitled "Prediction of Global Solar Radiation in India using Artificial Neural Network" in the 9th Conference on Sustainable Development of Energy, Water and Environment System in the University of Zagreb, Cologne University of Applied Sciences and the Aalborg University, during 20th - 27th September, 2014. It was organized on the Mediterranean Cruise travelling from Venice (Italy) to Istanbul (Turkey) and back.

Prof. Rahul Banerjee, Department of Computer Science & Information System, delivered a talk on "Body Area Networks: Safety & Security Concerns and Emerging Solution Approaches", in an International Conference on Secure Knowledge Management in Big Data "Era: SKM-2014", at BITS-Pilani, Dubai Campus, Dubai, from 8th - 9th December, 2014.

Prof. Sangeeta Sharma, Department of Humanities and Social Sciences, Presented a paper entitled "Advertising and Journalism: The innovative ways to lure the customers" in an International Conference on Hybridity and News, Vrije Universiteit Brussels, Brussels from 4th - 5th December, 2014.

→ Prof. Sangeeta Sharma



Dr. Kamalesh Kumar, Department of Civil Engineering, presented a paper entitled "Water Content Effect on Shear Strength Parameters in Coir Fiber Reinforced Piloni Soil" at the 3rd World Conference on Applied Sciences, Engineering and Technology (WCSET 2014), from 27th - 29th September, 2014 in Kathmandu, Nepal.

Dr. Shilpi Garg, Department of Biological Sciences, presented a paper entitled "Characterization of putative and hypothetical proteins involved in Fe-S cluster biogenesis in Plasmodium vivax" in the 12th International Conference on Molecular Epidemiology and Evolutionary Genetics of Infectious Diseases at The Royal River Hotel, Bangkok organized by Elsevier, UK from 11th to 13th December, 2014.

Dr. Vishal Saxena, Department of Biological Sciences, presented a paper entitled "Characterization of Isoprenoids biosynthesis pathway enzymes from Indian Plasmodium vivax field isolates" in the 12th International Conference on Molecular Epidemiology and Evolutionary Genetics of Infectious Diseases at The Royal River Hotel, Bangkok organized by Elsevier, UK from 11th to 13th December, 2014.

Dr Pratik N Sheth, Department of Chemical Engineering presented a paper entitled "Thermo-Chemical Conversion of Jatropa Deoiled Cake: Pyrolysis vs Gasification", in the 3rd International Conference on Chemical Science and Engineering, Phuket, Thailand from 27th to 28th December, 2014.

invited lectures by faculty

Prof. Rajiv Gupta, Department of Civil Engineering, delivered a talk on "Multi-sustainable roof top Rainwater harvesting: A social Enterprise model" / INDOVATION (Workshop cum exhibition) organized by the Ministry of Drinking Water and Sanitation in New Delhi during 26th-27th August, 2014.

Prof. Sangeeta Sharma, Department of Humanities and Social Sciences, delivered talks on "Importance of communication for Business Professionals" at Manipal University, Jaipur on 30th August, 2014; on "Technical Writing Style" at Poddar Institute of Management, Jaipur on 30th August, 2014 and on "Business Etiquette" to MBA students at MNIT, Jaipur on 18th September, 2014. She also conducted a workshop for Genpact employees on "Interpersonal Communication in the organization" Jaipur on 18th October, 2014.

Prof. Shamsher Bahadur Singh, Department of Civil Engineering, delivered a lecture on “Innovative Application of FRP Systems for Structures” at the Rajasthan Technical University in October, 2014.

Prof. Kumar Neeraj Sachdev, Department of Humanities and Social Sciences, delivered a talk on “Applied Ethics: A Special Reference to Whistle Blowing,” for the theme ‘Philosophy in the Present Time’ on ‘World Philosophy Day,’ at Government Rajindra College, Bathinda, Punjab, on 20th November, 2014.

Dr. Amit Kumar Verma, Department of Mathematics delivered a talk on “Science Inspire Camp” sponsored by DST New Delhi, on 1st August, 2014 and he also delivered a talk for "Regional Science Congress" at "Jawahar Novodaya Vidyalaya, Kajra" on 13th November, 2014.

Dr. Paul Atish Tulshiram, Department of Pharmacy, delivered a talk on “Recent developments in herbal drug analysis” at the National Conference on Herbal Drug Research: Opportunities and Challenges at B.V. Patel Pharmaceutical Education & Research Development (PERD) Centre and National Institute of Pharmaceutical Education and Research, Ahmedabad, Gujarat on 6th November, 2014.

→ Paul Atish Tulshiram



Dr. Pradyumn Chaturvedi, Department of Electrical and Electronics Engineering, delivered a talk on “Real Time Implementation of Power Electronic Converters”, at Malviya National Institute of Technology, Jaipur, on 24th December, 2014.

Dr. Shilpi Garg, Department of Biological Sciences, delivered a talk on “Characterization of Major Components of Fe-S Cluster Biogenesis in Plasmodium vivax” in TROPACON 2014 organized by the Regional Medical and Research Centre, Dibrugarh during 20th - 22nd November, 2014.

Dr. Vishal Saxena, Department of Biological Sciences, delivered a talk on “Isoprenoids biosynthesis in Plasmodium vivax: few major players” at the 25th National Congress of Parasitology jointly organized by CSIR-CDRI & The Indian Society For Parasitology, at CSIR-CDRI, Lucknow during 16th - 18th October, 2014.

Prof. Navneet Goyal & Dr. Poonam Goyal, Department of Computer Science & Information Systems, delivered a talk on “DATA MINING: Opportunities & Challenges” at the National Workshop on “Data Mining & Big Data Analytics” at Amity University, Jaipur, Rajasthan during 11th - 12th November, 2014.

Dr. Sundaresan Raman, Department of Computer Science & Information Systems, delivered a talk on “GPU Programming and Applications” at CDAC, Pune and CCOE, IIT Bombay in September 2014.

accolades and achievements

The project Multi-sustainable roof top Rainwater harvesting: A social Enterprise model of **Prof. Rajiv Gupta, Department of Civil Engineering** has been selected one of the top 15 projects on water and uploaded at the site of Ministry of Drinking Water and Sanitation. Site id: http://indiawater.gov.in/misc/MISC_AdvApp.aspx.

Prof. Shamsher Bahadur Singh, Department of Civil Engineering, was selected for the inclusion in the 8th edition of Asian Admirable Achievers, Rifacimento International, Editor Ravi Bushan, New Delhi, India, 2015.

Dr. Suresh Kumar, Department of Mathematics, was selected as Visiting Associate for a period of three years (August 2014-July 2017) by Inter University Centre for Astronomy and Astrophysics (IUCAA), Pune, India.

Dr. Sailaja Nandigama, Department of Humanities and Social Sciences, was invited as the subject expert by the Indian Government, for conducting the spot study for the Prime Minister Awards for Excellence in Public Administration. As part of this study, she conducted various field visits and submitted the report to validate the nomination for the PM award for excellence in December 2014.

Under the supervision of **Dr. Pradyumn Chaturvedi, Department of Electrical and Electronics Engineering**, a team consisting of three Students, Chilukuri Abhijit (2012A4PS278P) and Cheruvu

Phalanis (2012A4PS198P) and C.B. Parthap (2012A3PS029P) presented a Research Paper titled "Design and Implementation of Piezoelectric Energy Harvester" which was shortlisted for Grand Finale of iNSCRIBE 2014 held at Bangalore, Organized by Robert BOSCH Engg. & Business Solution Pvt. Ltd. and was adjudged 4th among 232 teams from all over the country in the Broad area of Manufacturing Technology on 17th December, 2014.

Dr. Utkarsh Maheshwari, Department of Chemical Engineering, Chaired a session on "New Process Technologies & Adsorption Technology" held during the 67th Annual Session of IChE (CHEMCON-2014) and Indo-Japanese Symposium, jointly organized by Chandigarh Regional Center, IChE and SSB University Institute of Chemical Engineering & Technology, Chandigarh, during 27th - 30th December, 2014.

significant projects

S.No.	Principal Investigator and Name of the Department	Title of the Project	Funding Agency	Amount and Duration
1.	Amit Kumar Verma, Department of Mathematics	Multi-point Boundary Value Problems Arising in Thermostat and Bridge Design	UGC NEW DELHI	INR 9,37,500
2.	Dr. Ashish Tiwari Department of Mathematics	Modeling of cardiovascular flows and influence of magnetic field on circulation	SERB New Delhi	INR 11,62,000 30-10-2014 to 29-10-2017

distinguished lectures at BITS Pilani

Department	Speaker	Designation	Topic	Date
CS&IS	Sheila S Hemani	Professor & Chair, Electrical & Computer Engineering Northeastern University Boston	"Research Opportunities in EECS"	3 rd November, 2014.
CS&IS	Idaku Ishii	Professor of Robotics Laboratory at Hiroshima University, Japan	"Recent Research in Robotics"	7 th November, 2014.

academic attainments of faculty

S.No.	NAME	DEPARTMENT	JOURNAL / MEMBER DETAILS
1.	Prof. Rajiv Gupta	Civil Engineering	<p>Reviewed the following research articles:</p> <ul style="list-style-type: none"> • "Least Square Support Vector Machine applied to Elastic Modulus of Normal and High Strength Concrete," for Songklanakarin Journal of Science and Technology, Thailand, 28th August, 2014 • "Retrofitting of a Sustainable Reflecting-Cum-Insulating Material for Performance Improvement of the Indoor Environment IBE-14-0034 ID IBE-14-0034.R1," for Indoor and Built Environment, SAGE Journals, UK, 5th October, 2014 • "Active Chilled Beam (ACB) System, the Solution with Low Energy and Maintenance Cost, and the Best Economic Life - TID tower, Tirana, JSDEWES.0049", for Journal of Sustainable Development of Energy, Water and Environment Systems, 20th October, 2014
2.	Dr. Paul Atish Tulshiram	Pharmacy	<ul style="list-style-type: none"> • Research article titled "New Naphthyl Esters from the Bark of Ficus religiosa Linn" for the journal of The Natural Products, Bentham publishers
3.	Dr. Pradyumn Chaturvedi,	Electrical and Electronics Engineering	<ul style="list-style-type: none"> • "A new nonlinear H-infinity Feedback Control approach for Three-phase Voltage Source Converters," for the journal of Electric Power Components and Systems (International), Ed. Dr Yao Duan, 1st October, 2014 • "Analysis and Design of Snubber Circuit for Z-source Inverter Applications," for the journal of IEEE Transactions on Power Electronics, Ed. Dr. Brad Lehman, 5th October, 2014 • "Implementation of SVM to Improve the Performance of A Nine Level Inverter with Reduced Number of Switches," for IEEE SPICES 2015, Ashok S: Track Chair, 27th November, 2014 • "Analysis of Current Controlled Based Voltage Source Inverter with SVM and SPWM Techniques," for IEEE SPICES 2015, Ashok S: Track Chair, 27th November, 2014 • "Speed Control of Switched Reluctance Motor (SRM) by Genetic Algorithm Based Optimal H-infinity Control Approach," for International Journal of Power Electronics (IJPELEC), Ed. Dr. S. Paramasivam, 15th November, 2014 • "Dual Output Forward Converter with Magamp Post regulators for Space Application," for International Journal of Power Electronics (IJPELEC), Ed. Dr. S. Paramasivam, 7th October, 2014 • "Solar PV Water Pumping System with DC-link Voltage Regulation," for International Journal of Power Electronics (IJPELEC), Ed. Dr. S. Paramasivam, 27th August, 2014
4.	Dr. Sandhya Mehrotra	Biological Science	<ul style="list-style-type: none"> • "Down-regulation of CHB101, a maize SWI3D gene, triggers moderate instability in both CG and CHG methylation," for the journal of Genes and Genomics (Springer) • "Selection of candidate indigenous browse plants for domestication in the rainforest zone of south - eastern Nigeria," for International Journal of Agriculture, Forestry and Fisheries • "Effectiveness of the entomopathogenic fungus Beauveria brongniartii and on three sugar beet insect pests," for American Journal of Biology and Life Sciences • "Microwave assisted biodiesel production from fish oil: two step process," for Journal of Energy & Fuels • "Identification of RubiscorebcL and rbcS in Camellia oleifera and their Potential as Molecular Markers for Selection of High Tea Oil Cultivars," for the journal of Frontiers in Plant Science: Crop Science and Horticulture

5.	Prof. Sangeeta Sharma	Humanities and Social Sciences	<ul style="list-style-type: none"> • "Women entrepreneurship: An overview," for Universal Journal of Management, Horizon Research publishing corporation, USA, 2014 • Member of reviewer committee for Business Perspectives and Research, published by SAGE Publications, a biannual refereed journal with a double blind peer review process.
6.	Mr. Utkarsh Maheshwari	Chemical Engineering	<ul style="list-style-type: none"> • "Adsorption of Chromium (VI) from Aqueous Solutions Using Montmorillonite and Modified Montmorillonite: Equilibrium and Kinetic Study," for the journal of Desalination and Water Treatment, Taylor & Francis Group • "Experiment of coal damage due to super-cooling with liquid nitrogen," for Journal of Natural Gas Science & Engineering, Elsevier Group • "Conventional hydrothermal synthesis of nano-structured H-ZSM-5 catalysts using various templates for light olefins production from methanol," for Journal of Natural Gas Science & Engineering, Elsevier Group • "Investigation of Extraction of Phenol from Wastewater using N,N-Didodecyl-1-dodecanamine (Tridodecylamine) in Benzene," for Journal of Chemical & Engineering Data, ACS Group • "Extraction Equilibria of Gibberellic Acid by Tridodecylamine Dissolved in Alcohols," for Journal of Chemical & Engineering Data, ACS Group • "Maximizing Demineralization during Chemical Leaching of Coal Through Optimal Reagent Addition Policy," for the journal of Chemical Product and Process Modeling, De Gruyter Group
7.	Dr. Pratik N Sheth	Chemical Engineering	<ul style="list-style-type: none"> • "Experimental study on gasification of agricultural residues using a fixed bed downdraft gasifier," for Biomass and Bioenergy • "A novel method to identify optimized parametric values for adsorption of heavy metals from waste water," for Journal of Water Process Engineering. • "Production of greenhouse gas free hydrogen by thermocatalytic decomposition of methane - A Review" and "Effects of Biodiesel from Different Feed stocks on Engine Performance and Emissions: A Review," for Renewable & Sustainable Energy Reviews.
8.	Prof. Rahul Banerjee	Computer Science and Information Systems	<ul style="list-style-type: none"> • "Perfect Hashing Based Memory Architectures for Multiple String Matching on Graphic Processing Units," for the journal of IEEE Transactions on Computers.
9.	Prof. Shamsher Bahadur Singh	Civil Engineering	<ul style="list-style-type: none"> • Published a paper (S. B. Singh, Mahalakshmi, N. and Nikesh Thammishetti), "Mechanical properties of Recycled Coarse Aggregate (RCA) Concrete," International Journal of Applied Engineering Research, ISSN 0973-4562, Vol. 9, No. 3, 2014, pp. 363-372.
10.	Mr. Sanwar Mal	Computer Science & Information Systems	<ul style="list-style-type: none"> • Published a book, <i>Basic Computer Concepts</i>, Ascent Prime Publication, 2014. 

BITSAA- Alumni Meet

BITS Alumni Ruby Jubilee Reunion at BITS Pilani

40 years after graduation, around 30 Alumni from the Batch of 1969-74 came back to their Alma mater with their family, to celebrate their Ruby Jubilee Reunion. A few of them came from - USA, Dubai and Muscat. The batch includes senior IAS officers, Army Personnel, Educationists and Entrepreneurs etc.

Apart from organizing multiple events such as interactions with senior students on specific topics like Prospects and Opportunities in Various Sectors of the Economy, and meeting with faculty members, they felicitated their old faculty members who had taught them, in a special function. They recollected their old memories and expressed their gratitude to their Alma mater. They also suggested certain measures to help the institute grow.

→ Prof. B.N Jain addressing the meet



Prof B N Jain, Vice Chancellor, BITS Pilani, admired their success in different fields and wished them a happy and fruitful life in all spheres – be it professional, personal or spiritual. He also shared the distinct shift in taking the institute to greater heights by focusing on making it a research focused institute. He talked about the 7 imperatives on which the institute is focusing to become one amongst the top 25 institutions in Asia by 2015. He also shared the growth plan of the institute.

In the felicitation function, Prof G Raghurama, Director, Pilani Campus, welcomed them and shared the infrastructural developmental plans for the campus.

A memorable movie show and a Hindi drama were also organized in the auditorium where Alumni

enjoyed immensely with their family members and rejoiced in nostalgia.

→ Prof. G. Raghurama addressing the meet



Scintillating Reunion of BITS 1964 Batch at BITS Pilani

The BITS Pilani Batch of 1964 was on campus for two days to celebrate their Golden Jubilee Reunion on 23rd and 24th August 2014. There were more than 80 extra ordinary achievers in different walks of life, coming with their families to rejoice in their memories of youthful days. Their batch consisted of 320 students, of whom 250 have been actively participating in different meets of their batch. This has given them the distinction of holding the **World Record** for “**ALUMNI MEETS OF A SINGLE BATCH**”, published by **Limca Book of Records, 2005**. Mr. Ashok Surekha, Mr. Manohar Baheti and Deepak Khosla of their batch have been the guiding spirit to strengthen the bondage amongst batch mates by organizing events regularly in India and abroad. Their batch mates have achieved great success in different walks of life-be it entrepreneurship, academics or corporate world. Around 55 of them have settled down in USA, Canada and other countries abroad.

→ Reunion of BITS 1964 Batch



During these two days, the batch organized special programmes, including visits to different places such as the museum, Saraswati temple, the Library, institute research labs etc. They organized a felicitation cum entertainment programme wherein Prof. B. N. Jain , Vice Chancellor and Prof. G. Raghurama, Director Pilani Campus shared their thoughts on the developments in the Institute during the last five decades and expectations from Alumni - the greatest strength of the institute. Prof Arya Kumar, Faculty In-charge, Alumni Affairs extended a warm welcome to luminaries of batch of 1964 for their love, affection and interest in their Alma mater.

→ 1964 Batch visited the Library



A Grand Gala musical event was also held in the evening of Sunday, 24th August, 2014. Chintan Rockstar - voice of Kishore Da and Mr. Dilip Kawthekar - voice of Manna De, enthralled the Alumni members of 1964 batch and other dignitaries among the audience with their mesmerizing performances, rendering old classics on the theme of "Friendship". It was conducted and synchronized by Mr. Manohar Baheti's innovative video recording of the cherished memories.

→ A Grand Gala musical event



The Biggest ever BITS Alumni Silver Jubilee Reunion at BITS Pilani

Around 200 alumni from the batch of 1985-89 came back to their alma mater between 17th and 19th October, 2014 to celebrate their Silver Jubilee Reunion. More than 90 of those who came are currently settled abroad. Most of them have risen to great heights and excelled in different walks of life and are working as entrepreneurs, renowned academicians, venture capitalists, investment bankers, etc.

Besides organizing functions such as interactions with senior students on specific topics related to career mentoring and industry trends, meeting with faculty members, delivering lectures on management themes, a marathon race and playing games with existing students, they felicitated their old professors in a special function and cherished old memories.

→ BITS Alumni Silver Jubilee reunion



In a felicitation function on 18th October, 2014 Prof. G. Raghurama, Director, Pilani campus welcomed them and shared the future development plans for the institute. Prof. B. N. Jain, Vice Chancellor, BITS Pilani congratulated them for their success in various fields and wished them a happy and fulfilling life ahead – be it in the professional, personal or spiritual sphere. He further stated the plans for taking the institution to the greater heights by focusing on research. He shared with them the seven key and distinct imperatives which the institution is focusing on to become one amongst the top 25 institutions in Asia by 2015. Prof. K. E. Raman, Director, K. K. Birla Goa Campus, BITS Pilani and Chairman of the Alumni Affairs Division felt it was a matter of pride for the institute while acknowledging the success of the alumni and expressed a need for greater involvement of the alumni in the institute's growth. Prof. Arya Kumar faculty in-charge Alumni Affairs Division, Pilani campus thanked the alumni for breaking all past records by having a presence of more than 200 alumni for the Silver Jubilee Reunion. The success of

BITS Pilani lies with the achievements of the alumni and their contributions to society at large. He extended special thanks to the organizing team led by Mr. Rajesh Balay, Ms. Sunita, Mr. Sanjay and Mr. Muthuram N for making this reunion a grand success.

→ BITS Alumni Silver Jubilee reunion



A memorable Music Night was also organized in the auditorium where many alumni and BITS students mesmerized the audience by presenting old classical hits as well as popular numbers from the western bands.

Student round-up

A team of 3 students, **Mr. Shubham Jain (2012A1PS450P)**, **Mr. Abhishek Ranade (2012A1PS421P)**, **Mr. Varun Patel (2012A1PS328P)** under the supervision of **Dr. Pratik N. Sheth**, Department of Chemical Engineering secured 4th position for their project “Advanced Heat Pump Solutions for Commercial Buildings - Ground Source Heat Pump” in iNSCRIBE 2014 organized by BOSCH during 16th - 17th December, 2014.

→ Team participated in iNSCRIBE 2014



Mr. Abhishek Ghosh (2012A1PS362P) was awarded the 2nd position in a National-Level Essay Writing Competition, entitled 'Taboos of Low Economic Growth Rate in India' on 'Communicating

Freedom', organized by Lawlex.org and the Centre for Civil Society on 11th August, 2014.

→ Abhishek Ghosh



Mr. Kunal (2012ABPS190P) presented a paper entitled "Traffic Management System for Modern Indian Cities" at IIT Roorkee.

Mr. Kunal (2012ABPS190P), **Harsh Khandelwal (2012ABPS625P)** and **Arpit Taluka (2012ABPS099P)** under the supervision of **Prof. Srinivas Kota**, Department of Mechanical Engineering presented a paper entitled "Mass Customization for Efficient Production Activities" in the finals of iNSCRIBE 2014 organized by BOSCH during 16th - 17th December, 2014.

Mr. Pinakin M. Padalia (2013A3PS600P) was selected for the poster presentation in the 6th European Cubesat Symposium, jointly organized at Estavayer Le-Lac, Switzerland by the Swiss Space systems and Von Karman Institute for fluid dynamics during 14th - 16th October, 2014.

→ Mr. Pinakin M. Padalia



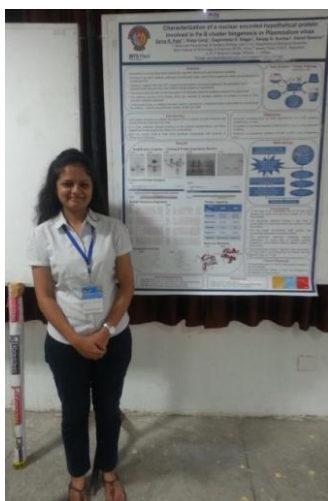
Mr. Siddhartha Sahai (2012C6PS672P) won the award for Best Use of Facebook API, in the Top Coder Open 2014, at San Francisco, organized during 16th - 19th November, 2014. He had qualified for an all-expenses paid trip to the “Mashathon Finals” and received a cash prize of \$1,000.

The paper prepared by **Yash Sinha (2012C6PS365P)**, **Prateek Jain (2012C6PS392P)**, and **Nirant Kasliwal (2012C6PS694P)** secured 9th position out of 30 papers accepted worldwide, for oral presentation at the “IEEE SPS-APSIPA Winter School on Machine Intelligence and Signal

Processing "organized during 20th - 23rd December, 2014 at IIIT Delhi. The paper was entitled "Comparative study of preprocessing and classification methods in character recognition of natural scene images in Machine Learning".

Zarna Rajeshkumar Pala (2011PHXF010P), working under the supervision of **Dr. Vishal Saxena**, Department of Biological Sciences, won the Best Poster Award for the poster entitled "Characterization of a nuclear encoded hypothetical protein involved in Fe-S cluster biogenesis in *Plasmodium vivax*" at the 25th National Congress of Parasitology on "Global Challenges in the Management of Parasitic Diseases" held at CSIR-Central Drug Research Institute (CDRI), Lucknow, during 16th - 18th October, 2014.

→ Zarna Rajeshkumar Pala



Mr. Padam Prakash Bengani, an alumnus of BITS-Pilani MSc. (Tech.) in Information Systems, 2007-11 batch) and currently working in Oracle has developed a micro blogging platform for college students which provides a medium for college social networks to flourish. People have to register using their personal and institutional (college) email in this site and will automatically get added as a member of that particular college and now whatever they share/post will be visible to all other members of the college and vice versa.

As an effort of two undergraduate BITSian students - **Apoorv Singh Saini (2012A2 PS391P)** and **Pankaj Singla (2012A3PS135P)**, a magazine '*The Critique*' was launched in October, 2014 to celebrate literature, cinema and photography. It received an overwhelming response from people in and outside BITS. The second issue of the magazine, themed on the '90s, saw entries in the form of reviews and articles from renowned writers and critics like Dilip D'Souza. For the launch of its second issue, a panel discussion on the theme '*India: Beyond Bollywood and Cricket*' was organized on the evening of 18th

November, 2014. The panel comprised of three faculty members, namely **Prof. Geetha B.**, **Prof. Rishikesh Vaidya** and **Prof. Sunita Raina**; and two students- **Chetan Aditya (2011A1TS467P)** and **Abhishek Ghosh (2012A1PS362P)**. The discussion was moderated by Prof. Hari Nair and had a very good participation from a large number of students as well as teachers. Towards the end of the semester, a video about the venture was released on YouTube and was widely praised. Featuring Prof. Tapomoy Sarkar, Prof. Rishikesh Vaidya and Prof. Geetha B., the video was made by the team of '*The Critique*' with assistance in the form of editing and camera-work by **Abhinav Bhardwaj (2012A1PS433P)** and **Mayank Mishra (2012A2PS454P)**. The third and the most recent issue of the magazine, themed 'Journey', was released by the renowned travel writer William Dalrymple at the Jaipur Literature Festival 2015, of which he also happens to be the co-founder and director. '*The Critique*' has managed to bring together literature and cinema enthusiasts across the country in the few months since its inception and will continue to do the same in the times to come.

→ The Critique: Panel Discussion



Creative zone

BOSM 2014

The BITS Open Sports Meet is BITS (Birla Institute of Technology and Science) Pilani's annual sports extravaganza. The curtains to the 29th BOSM meet were raised on 19th September, 2014 and needless to say, the students involved in the organization of the fest were giddy with excitement. According to the organizing committee, the CoSSAc body, registrations hit a new high, owing to more teams around the Delhi University packing their sports gears for the showdown this season at Pilani. Around 2600 players registered to participate in various events that happened throughout the four days meet.

→ BOSM 2014 inauguration



BITS Pilani has been undergoing a Parivartan - a 500 crore project of the same name that was initiated to boost the infrastructure of the Pilani campus. The opening of the revamped tennis courts was delayed due to the rain Gods deciding to bless the otherwise dry hamlet with showers just when the final phase of construction was about to begin. Much to the tennis team's relief, it was opened in time for the official matches. The renovated badminton courts were also a welcome addition. To the dismay of many, football, hockey, swimming and athletics were organized outside campus in Birla Public School, a couple of kilometers away.

The meet was inaugurated with a scintillating opening ceremony, filled with cultural performances and unbelievable athletic feats. The chief guest for the ceremony, Dinesh Mongia (former Indian cricketer), spoke on the importance of a sound mind in sync with a healthy body as an integral part of the preparation for any sports person. Following many speeches including those of the director of the campus, Dr. G. Raghurama, and BITS alumnus, R.K Kaul, an oath was taken to abide by the sacred covenants of sportsmanship between participating colleges.

→ Weight Lifting Event



Also present in the ceremony was 'Gatka', the famous Punjabi martial arts group of professionals, who performed death-defying stunts which enthralled the crowd in the packed auditorium of the college.

This was followed by a demonstration by the college's new Taekwondo team, which was just mind-blowing. The eventful ceremony also witnessed the first rendering of the BOSM 2014 theme song, composed by Gurukul, the department of music in BITS Pilani. On the whole, the ceremony instilled a sense of inspiration and healthy competition in the hearts of the participating athletes.

→ Taekwondo performance



To brighten up the fest, the Creative Activities Club (CrAC) decorated the Gym-G walls, portraying famous sports personalities. A festive BOSM banner at the base of the famous clock tower and a three-dimensional structure of the BOSM logo was also put on display. BOSM hopes to cater to everyone – even those who don't stand out in sporting events. A sumo-wrestling event, a live version of the popular game "Plants vs. Zombies", Muggle Quidditch, Street Football and plenty of other similar events were organized in various spots around the campus. Yodh, a two-day inter-school sporting event was conducted by Nirmaan for over 200 students of classes VI to X from about 10 schools in and around Pilani, most of them lacking proper playgrounds, instructors and sports equipment. The NSS organized a pre-BOSM initiative, Junoon, a sports event for the specially-abled that was a huge success again this year and has received good feedback from all quarters.

→ BOSM 2014 at its best



OASIS 2014

Oasis, the annual cultural festival of the Birla Institute of Technology and Science, Pilani was organized from 31st October, 2014 to 4th November, 2014. What started as an annual fun fete has come a long way in 43 years of its existence. With more than 4000 participants from 200 colleges across the country and a non-stop schedule of 96 hours, Oasis 2014, with the theme “That ‘90s Show” lived up to its promise of being one of the biggest cultural festivals in India.

→ Department of Arts, Design and Publicity with Vice Chancellor and Director



What makes Oasis unique is the fact that sponsorship, organization, planning, advertising & troubleshooting, every facet is handled by students, with clubs and departments taking up the mantle for making the fest a success. This year, the inauguration ceremony was held on 31st October, 2014 which was graced by the presence of Mr. Sriram Raghavan, a well-known Indian Film Director who has won critical acclaim for movies like Ek Hasina Thi and Johnny Gaddar. His upcoming film is a crime thriller named 'Badlapur' starring Varun Dhawan, Nawazuddin Siddiqui, Huma Quraishi, and Yami Gautam. What followed were performances by the Music Club, Dance Club and Mime club of BITS Pilani, keeping with the theme of Oasis 2014, “That ‘90s Show”.

→ Performance by Dance Club



→ Performance by FASHP



The Music Club of BITS, Pilani kick-started the event by enthraling audiences with 90s hits like “Que Sera, Sera” and “Chal Chhaya Chhaya”. The Dance club performed on tracks from the ‘90s, with styles ranging from western, folk, and semi-western. The Mime Club performed two mime acts that had the audience in splits, and then displayed the much-awaited spoof video “Schlumdog Millionaire”. The Department of Stage Controls, revealed the unholy trinity of arcade games in the ‘90s, a Pokeball, Mario, and a Tetris console and the Department of Art, Design and Publicity introduced the audience to the four themed posters that now decorate the walls of the Auditorium.

→ Performance by Music Club



The highlights of this Oasis were events like Rocktaves, Tarang, Razzmatazz, Street Dance, Stage Play, FashP and the Oasis Debate. Over 85 events that cover broad categories like Music, Drama, Oratory, Art, Dance, Quizzing, etc. were organized to cater to every talent that students have to offer. Rocktaves is the most celebrated semi-professional rock performance competition organized at the university level. It boasts of performances from bands like Parikrama, Indian Ocean, Prestorika and Euphoria who rose to fame after participating in this event. Razzmatazz offers college dance troupes a stage to compete under a variety of styles ranging

from Bollywood to Contemporary to Hip Hop. For those who love theatre and the dexterity associated with drama, Stage Play is a chance to behold the audience with intricate acting while exhibiting true professionalism in direction. Debaters and orators could try their hand at Acuity – the Oasis Debate and BLAB.

→ Choreo in BITS Audi



Professional Shows are highly anticipated events with Farhan Akhtar gracing the stage last Oasis. This year, Benny Dayal a popular playback singer who has voiced songs featured in movies like Jaane Tu Ya Jaane Naa, Ghajini, Cocktail, and Yeh Jawaani hai Deewani performed on November 1. The singer radiated an immense amount of energy and his frequent jigs on stage kept the tempo high and the fans entertained. Also on offer were classical musicians, Mysore Nagaraj and Dr. Manjunath - famously known as the Mysore Brothers. They are renowned violinists and have performed all over the world, notably at Royal Albert Hall, Chicago Pop Festival, Sydney Opera House, among many others. They presented an hour long concert that left the audience at the NAB auditorium grasping for words to describe the stunning performance.

→ Street Play



Accompanied by percussionists Vidwan Arjun Kumar on the mridangam and Vidwan Amrit Nataraj on the khanjira, the virtuosos weaved pure glee and enchantment on their violins.

Furthermore, Raghu Dixit, well known for his folk and fusion music took stage on 2nd November. His music can best be described as an amalgamation of Indian Ethnic music and styles from different parts of the world. Even breaking out into Kannada songs during the evening, the audience that were present would never forget this night for the rest of their lives.

Working in collaboration with Sunburn, the famous electronic dance music festival organized in Goa, professional DJs were brought to perform in Pilani. With DJs like Lost Sounds and Anish Sood involved, the show, happening in the Gym Grounds was a major crowd puller.

Add to this never ending list, a street performance by Pierrick St-Pierre better known as “El Banano”, who has the ability to send out universal, language-independent messages through his unique blend of physical theatre, circus tricks and mime. With LED-studded hoops and even fire, Leona Rodrigues, an artist from Mumbai, presented a mesmerizing hula hoop performance.

→ Performance by Dance Club



The last day of Oasis, November 4 was marked by the performance N2O presents the East India Comedy show. It was held in the Auditorium of BITS Pilani with a jam-packed audience and East India Comedy performers, Sourabh Pant, Sahil Shah and Sapan Verma. The comedians made sure that most of the jokes were related to the lives of engineering students, thus ensuring that everyone in the audience had a good time. The performers of East India Comedy are famous for uploading funny YouTube videos and have done a lot of shows across India.

The conclusion to the cultural festival Oasis, the valedictory ceremony was held in the New Academic Building Auditorium, BITS Pilani. The winners of all ‘kernel events’ or the most important events were awarded during this ceremony.

introducing new faculty

S. No.	Name	Designation	Discipline
1.	Sreedhar Madichetty, Practice School Division, Bangalore	Lecturer	Power Electronics, Modular Multi Level Converters, Photo Voltaic Systems, Automatic Generation Control

editorial team



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Student Members: Rusheen Rathore and Tanmayee Kher

Special Thanks: Madhusmita Das and Ramesh Sharma



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