

A. Conferences, Seminars & Workshops conducted:02

1. Veeky Baths , The 4th 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 – 4th of March, 2017.
2. National workshop on “Experimental Methods in Cognitive Neuroscience” was organized by the Cognitive Neuroscience Lab, Department of Biological Sciences, BITS Pilani, K K Birla Goa Campus from 15 th – 16 th December, 2017

F. Invited Talks given by BITS faculty: 02

1. Invited lecture delivered for the International Conference on Reproductive Biology and Comparative Endocrinology & The 35th Annual Meeting of The Society for Reproductive Biology and Comparative Endocrinology 9th - 11th February, 2017, Department of Animal Biology, University of Hyderabad, Hyderabad, on 'Liraglutide, a glucagon like peptide-1 analog, modulates adipokines expression during adipogenesis and ameliorates obesity as well polycystic ovary syndrome in mice.'
2. INVITED AND INAUGURAL TALK AT 9TH YOUNG INVESTIGATORS MEETING 2017, on 6th MARCH, 2017, GOALeaf Extracts from *Moringa oleifera*: A multidimensional prodigy? Sumit Biswas. 2nd International Conference on Nutraceuticals and Chronic Diseases 2017

G. Invited talks arranged in the department: 06

1. Dr. Pradeep Kumar Agarwal, Principal Scientist and Head, Plant Omics Division of Central Salt and Marine Chemical Research Institute (CSIR) Bhavnagar, Genetic Engineering Techniques for Plant Stress Tolerance. 10 November 2017.
2. Prof. Ashok Kumar, Professor, IIT Kanpur ,Bio Inspired Scaffolds For Tissue Engineering and Regenerative Medicine, 1st September, 2017
3. Prof. Gautam Basu, Senior Professor, Dept. of Biophysics, Bose Institute, Kolkata. The legacy of J.C. Bose. 18/8/17
4. Dr. Suman Thakur, Senior Scientist, Proteomics and Cell Signaling, CCMB, Hyderabad. Biomarker to Drug Discovery using Quantitative high throughput Proteomics. 8th November, 2017
5. Talk on "Progenitor Cells in the Developing Kidney - Balancing Renewal and Differentiation" by BITSGian, Dr. Harini Ramalingam. Date: 10/10/2017
6. Prof. Ashok Kumar from IIT Kanpur on aspects of tissue engineering in clinical applications 2017

B2.10.2 Department: Chemistry

Number of faculty members (as on 31 December 2016): 16

Senior Professors, Professors	02
Associate Professors	09
Assistant Professors	4 + 1 (DST-INSPIRE Faculty)
Lecturers	-
Visiting Faculty	-

Head of the Department: Dr. Anjan Chattopadhyay, Associate Professor

Contact details (email): anjan@goa.bits-pilani.ac.in

Number of PhD Scholars: 22(Full Time) +1 (Part Time)

Number of Project Fellows: 04

No. of Post Doctoral Scientists& Researchers: 03

Ph.D. Thesis awarded during the year: 03

Ph.D. Thesis Submitted during the year: 03

A. Sponsored Research activities:

(i) Ongoing projects:

Name of Investigator	Title of Project and duration	Amount sanctioned (Rs)	Funding Agency
Dr. N.N. Ghosh	"Development of polymer-ferrite (and/or grapheme) nanocomposites having high thermal stability and microwave absorption property for Radar Absorbing Coating Application" ERIP/ER/1305004/M/01/1523 3 years	14,59,000	DRDO
Dr. N.N. Ghosh Coinvestigator: Dr. P. Parameswaran	"Investigations on microstructures of hard-soft ferrite nanocomposites and influence of microstructures on their properties" CSR/Accts/2014-15/671, 3 years	263400	UGC-DAE
Dr. Arunashree Panda Mentor: Dr. R. N. Behera	"Chalcogen containing azomethinamacrocycles and bicycles: synthesis, characterization, metal complexes and theoretical investigations of nature of intramolecular interactions between divalent chalcogen and nitrogen atoms",SRWOS-A/CS-04/2014 (G) 3 years	17,10,000	DST WOS
Prof. Sunil Bhand Coinvestigator: Prof A P Koley MrGautamBacher PCs: Dr. V K Suri Dr. R. Balasubramaniam Shivam Mishra AshwinRathod (ALL from Precision Engineering division, BARC, Mumbai)	"Development of a field portable devise for the analysis of environmental contaminants in water" 36(2)/14/25/2014-BRNS 3 years	24,13,800	BRNS
Prof. Sunil Bhand Coinvestigator: Mr. GautamBacher Principal Collaborator: Mr. Vishal Dhamgaye (RRCAT, Indore) Dr. G. S. Lodha (RRCAT, Indore)	"Novel micro biosensor device for heavy metal analysis in vegetables" CSR-IC-BL-40/CRS-137-2014-15/1233 2 years	1,00,000	RRCAT indore and UGC DAE consortium Indore
Prof Sunil Bhand is PI from BITS Goa (Co-PI Dr GautamBacher EEE). [Consortium of CDAC Kolkata, BITS PilaniK.K.Birla Goa Campus, Jadavpur University Kolkata]	"Development of sensing system for residual pesticide and harmful chemical detection in fruits and vegetables "VegFruitSens" Aug. 2016-Jul 2018.	2,12,00,000.00 (BITS funding-53,50,000.00)	R.D Tata Trust
Dr. Subhadeep Banerjee	"Development of β,β' -edge fused π -elongated donor-	22,60,000	DST-FT

Name of Investigator	Title of Project and duration	Amount sanctioned (Rs)	Funding Agency
	acceptor porphyrin possessing Near-IR optical"spectra SB/FT/CS-085/2013,3 years		
Dr. Tanmoy Mondal	"Nonadiabatic molecular processes on threefold electronic degeneracies" DST/INSPIRE Faculty Award /2013,5 years	35,00,000	DST- Inspire
Dr. Venkatesan S.Thimmakondur	Structures and energetics of C ₇ H ₂ and C ₉ H ₂ Isomers:Quantam Chemical studies SERB/F/3698/2015-163 years	23,23,000	SERB
Dr. P. Bhavana	"Steric and Conformational Influences on the Performance of Nonplanar and Highly Functionalized Phenyl- And Heteroaryl-Porphyrins in the Sensing of Anions and Heavy Metal Ions" EMR/2016/002367 ,3 years	28,22,820	SERB
Dr. Mainak Banerjee	"A comprehensive study on mechanochemicals ² C-H bond activation in five-membered heteroaromatics in a Ball-Mill: Can first row transition elements be a potential replacement of late transitional elements—a question to investigate; (EMR/2016/002253); 3 years; ongoing from 28-12-16	30, 60,000	SERB

(ii) Projects sanctioned during the year*:

Name of Investigator	Title of Project and duration	Amount sanctioned (Rs)	Funding Agency
Prof Sunil Bhand is PI from BITS Goa (Co-PI Dr GautamBacher EEE). [Consortium of CDAC Kolkata, BITS PilaniK.K.Birla Goa Campus, Jadavpur University Kolkata]	"Development of sensing system for residual pesticide and harmful chemical detection in fruits and vegetables "VegFruitSens" Aug. 2016-Jul 2018.	2,12,00,000.00 (BITS funding-53,50,000.00)	R.D Tata Trust
Dr. P. Bhavana	"Steric and Conformational Influences on the Performance of Nonplanar and Highly Functionalized Phenyl- And Heteroaryl-Porphyrins in the Sensing of Anions and Heavy Metal Ions" EMR/2016/002367 ,3 years	28,22,820	SERB
Dr. Mainak Banerjee	"A comprehensive study on mechanochemicals ² C-H bond activation in five-membered heteroaromatics in a Ball-Mill: Can first row transition elements be a potential replacement of late transitional elements—a question to investigate; (EMR/2016/002253); 3 years; ongoing from 28-12-16	30,60,000	SERB

*These sanctioned projects are mentioned under the ongoing projects, as well.

(iii) Projects approved during the year:

Name of Investigator	Title of Project and duration	Amount sanctioned (Rs)	Funding Agency
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Dr. R. N. Behera	"Computational Study of the Catalytic Mechanism of some Diaryldiselenide-based Glutathione Peroxidase Mimetics (EMR/2016/003210), 3 Years	16,42,280	DST-SERB
Dr. K. P. Jayadevan (Co-PI) R. N. Behera	"Experimental and Computational Study of Boron doped TiO ₂ and ZnONanocrystals"	21,93,200	DST-SERB

(iv) Projects completed this year:

Name of Investigator	Title of Project and duration	Amount sanctioned (Rs)	Funding Agency
Dr. N.N. Ghosh Coinvestigator: Dr. Mainak Banerjee	"Preparation of Magnetically Separable, Mesoporous TiO ₂ Catalyst and Study of their Catalytic Properties" 02(0147)/13/EMR-II 3 years	19,04,800	CSIR
Dr. P. Bhavana	"An Investigation on Derivatives of mesoTetrathienylporphyrin as dye sensitized Solar cells" 02(0076)/12/EMR-II 3 years	17,11,080	CSIR
Dr. Mainak Banerjee Coinvestigator: Dr. Rahul Banerjee (NCL, Pune)	"Synthesis of metal-organic-porous material based efficient chiral heterogenous catalysts by post synthetic modification and their applications in asymmetric reactions" 02(0075)/12/EMR-II 3 years	22,25,580	CSIR
Dr. N. N. Ghosh Prof. Sunil Bhand Dr. C. K. Mitra UK counterpart Prof. Paul Antony Milner, University of Leeds	"Development and characterization of nanomaterials for biosensors and biocatalysis" INT/DST/INT/UK/P-41/2012 2 years	26,32,000	UKIERI-DST
Prof. Sunil Bhand	"Bio- Sensory Computing for Detection of Pesticide in Tea". DR-22(5)/XIIPlan Project/Bio-sensor/2015 3 months	5,50,000	Tea Board, India

B. Publications: 34

- Hrshikesh Joshi, SivaramapanickerSreejith, Ranjan Dey and Mihaiela C. Stuparu, "Host-guest interaction between corannulene and γ -cyclodextrin: Mass spectrometric evidence of a 1:1 inclusion complex formation", RSC Advances Communications, 6,110001-110003(2016).
- Akanksha Saini, Shahswat Verma, Aditya Harshvardhan and RanjanDey, "Two new models for viscosity prediction of binary, ternary and higher order liquid mixtures", RSC Advances, 6, 113657-113662(2016).
- AkankshaSaini, Hrshikesh Joshi, KratikaKukreja and RanjanDey, "A study of viscometric, optical and interfacial properties of binary and ternary liquid mixtures", Journal of Molecular Liquids, 273,165-173(2016).
- K Narendra, T Srinivasa Krishna, B Sudhamsa, RanjanDey and M SarathBabu,"Thermophysical and optical studies of molecular interactions in binary mixtures of diethyl carbonate with aromatic compounds at temperatures from 298.15K to 323.15K", Journal of Chemical Thermodynamics, 103,17-299(2016).
- RanjanDey, AkankshaSainiandHardikHingorani,"A Modified Frenkel Approach for Viscometric Prediction of Binary and Multicomponent Liquid Mixtures", RSC Advances,6, 43838-43843(2016).
- J V Srinivasu, K Narendra, RanjanDey, B SubbaRao,"Theoretical Evaluation of Speed of Sound in Binary Liquid Mixtures", International Journal of Advanced Research in Physical Sciences,3(6),7-14(2016).
- Atul Sharma, Aruna Chandra Singh, GautamBacher, Sunil Bhand, "Recent Advances in Aptamer- Based Biosensors for Detection of Antibiotic Residues" (Invited review) Aptamers and Synthetic Antibodies, Vol.2, Iss.2, Pages 43-54

8. Deshmukh, R. A., Joshi, K., Bhand, S. and Roy, U, "Recent developments in detection and enumeration of waterborne bacteria: a retrospective minireview". *Microbiology Open*. (2016)
9. Atul Sharma, akhtarhayat, Rupesh Kumar Mishra, GaeleCatanante, Shakir Ahmad Shahid, Sunil Bhand and Jean-Louis Marty "Design of fluorescence aptaswitch based on the aptamer modulated nano-surface impact on the fluorescence particles" *RSC Adv*, 6, 65579-65587 (2016),. DOI: 10.1039/C6RA10942J
10. Atul Sharma, GaëlleCatanante, Akhtar Hayat, Georges Istamboulie, Ines Ben Rejeb, Sunil Bhand, Jean Louis Marty "Development of structure switching aptamer assay for detection of aflatoxin M1 in milk sample"*Talanta* 158, 35–41(2016),
11. Manu Jose, P. T. Aswathi, K. Sriram, PriyadarshiniParakh, HalanPrakash,SatyajitShukla, Ion-exchange bonded $H_2Ti_3O_7$ nanosheets-based magnetic nanocomposite for dye removal via adsorption and its regeneration via synergistic activation of persulfate. *RSC Adv.*, 6, 80133 (2016).
12. Gokulakrishnan Subramanian, Akhil Mohammed, HalanPrakash,Determination of persulphates using N, N-diethyl-p-phenylenediamine as colorimetric reagent: Oxidative colaration and degradation of the reagent without bactericidal effect in water. *Chemical Engineering Journal*, 286, 223–231 (2016) ,
13. T. Mondal, "Origin of distinct structural symmetry of the neopentane cation in the ground electronic state compared to the methane cation" *Phys. Chem. Chem. Phys.* 18, 10459-10472 (2016).
14. SrimantaHalder, PurushothamanBhavana, "Conformational and regioselective aspects on the photodegradation of organic pollutants by TiO_2 composites of derivatives of meso-tetrathien-2-ylporphyrin" *Journal of Molecular Structure*, 1120, 62-69 (2016).
15. Anjan Chattopadhyay, Praveen Saini and RiddishPandharkar "Exploring the isomerization paths of push-pull hexatrienes" *RSC Advances* 6 88433-88442 (2016).
16. Praveen Saini, Mainak Banerjee and Anjan Chattopadhyay "A Computational Investigation of the Photochemical Reaction Path of some Synthesized and Experimentally Analyzed Small-Chain Conjugated Nitrones"*J. Phys. Chem A* 120 396-406 (2016).
17. Banerjee, S., Chattopadhyay, A., Saini, P., Singh, K. S. 'Synthesis and Optical Properties of 1,4- and 1,2-Dicyanodibenzodioxins Possessing Donor– π -Acceptor Architecture' *Synlett*. 27, 799-804 (2016).
18. Banerjee, S.'Phenazines as chemosensors of solution analytes and as sensitizers in organic photovoltaics' *Arkivoc*, 2016, (i), 82-110.
19. Sharma, M. Banerjee, S., Zeller, M. Brückner, C. "Fusion and Desulfurization Reactions of Thiomorpholinochlorins" *J. Org. Chem.* 81, 12350-12356 (2016),
20. Shankar B. Dalavi and Rabi N. Panda, "New Synthetic Methodology and Magnetic Properties of fcc Co-Ni Nanostructured Alloys Embedded in KIT-6 Matrix", *Journal of Materials Research*, 31(16), 2430-2437 (2016).
21. Pragnya P. Mishra, M. Manivel Raja and Rabi N. Panda, "Novel Synthesis and Nanostructure Controlled Magnetic Characteristics of ϵ -Fe₃N and γ' -Ni_xFe_{4-x}N (0.2 ≤ x ≤ 0.8) Nitrides", *Journal of Superconductivity and Novel Magnetism* 29(5), 1347-1356 (2016).
22. Pragnya P. Mishra, M. Manivel Raja and Rabi N. Panda, "Enhancement of magnetic moment in Co substituted Nanocrystalline ϵ -Co_xFe_{3-x}N (0.2 ≤ x ≤ 0.4) synthesized by modified citrate precursor route", *Materials Research Bulletin*. 75, 127-133 (2016).
23. Greg Anderson, Raghu N. Behera, Ravi Gomatam, "A Theoretical Approach to Engineering a New Enzyme", *Journal of Physics: Conference Series*, 738, 012013 (2016).
24. V. S. Thimmakondur, "The Equilibrium Geometries of Heptatriynylidene, Cyclohepta-1,2,3,4-tetraen-6-yne, and Heptahexaenylidene" *Comput. Theoret. Chem.* 1079, 1-10 (2016).
25. Dipratn G. Khandare, Mainak Banerjee, Rishabh Gupta, Nupur Kumar, AnasuyaGanguly, Deepak Singh and Amrita Chatterjee, "Green synthesis of a benzothiazole based 'turn-on' type fluorimetric probe and its use for the selective detection of thiophenols in environmental samples and living cells", *RSC Adv.*, 2016, 6, 52790–52797.
26. MeenakshiRana, NidhiSingla, Amrita Chatterjee, AbhishekShukla,PapiaChowdhury, "Investigation of nonlinear optical (NLO) properties by charge transfer contributions of amine functionalized tetraphenylethylene" *OpticalMaterials*, 62,80-89 (2016).
27. Zigmee T. Bhutia, Geethika Prasanna kumar, Avijit Das, Malabika Biswas, Amrita Chatterjee and Mainak Banerjee,"A Facile, Catalyst-Free Mechano-Synthesis of Quinoxalines and their In-Vitro Antibacterial Activity Study", *Chemistry Select*, slct.201601672.accepted
28. DebabrataMoitra, Barun Kumar Ghosh, MadhuryaChandel, NarendraNathGhosh, 'Synthesis of a BiFeO₃ nanowire-reduced graphene oxide based magnetically separable nanocatalyst and its versatile catalytic activity towards multiple organic reactions' *RSC Advances*6, 97941–97952 (2016).

29. Debabrata Moitra, Madhurya Chandel, Barun Kumar Ghosh, Raj Kumar Jani, Manoj K Patra, Sampat Raj Vadera, NarendraNathGhosh*, 'A Simple 'in situ'Co-precipitation Method for Preparation of Multifunctional CoFe₂O₄-Reduced Graphene Oxide Nanocomposites: Excellent Microwave Absorber and Highly Efficient Magnetically Separable Recyclable Photocatalyst for Dye Degradation.' RSC Advances6, 76759- 76772 (2016).
30. BK Ghosh, S Hazra and NN Ghosh, Synthesis of Cu@CF@SBA15: A Versatile catalysts for (i) reduction of dyes, trifluralin, Synthesis of (ii) DHPMs by Biginelli reaction and (iii) 1,2,3-triazole derivatives by 'Click reaction Catalysis Communications. 80, 44–48 (2016).
31. Mayank Pandey, Girish M Joshi and Narendra Nath Ghosh, Electrical Performance of Lithium Ion Based Polymer Electrolyte with Polyethylene glycol and Polyvinyl alcohol Network International Journal of Polymeric Materials 65 [15] 759–768 (2016).
32. D Moitra, BK Ghosh, M Chandel, RK Jani, MK Patra, SR Vadera, NN Ghosh, Synthesis of a Ni_{0.8}Zn_{0.2}Fe₂O₄–RGO nanocomposite: an excellent magnetically separable catalyst for dye degradation and microwave absorber RSC Advances 6, 14090-14096 (2016).
33. Rupam Debnath, Debraj Dhar Purkayastha, Subhenjit Hazra, Narendra Nath Ghosh, Chira R Bhattacharjee, Jayashree Rout, 'Biogenic synthesis of antioxidant, shape selective gold nanomaterials mediated by High altitude lichens' Materials Letters 169, 58–61 (2016).
34. BhanudasNaik, DebabrataMoitra, DesaganiDayananda, SubhenjitHazra, Barun Kumar Ghosh, SivankuttyVadakkethonippurathu Prasad, NarendraNathGhosh* 'A facile method for preparation of TiO₂ nanoparticle loaded mesoporous γ- Al₂O₃: An efficient but cost-effective catalyst for dye degradation' Journal of Nanoscience and Nanotechnology16, 8544-8549 (2016).

Patents:03

1. Vinok Kumar Suri, R. Balasubramanian. Shivam Mishra, Shrinkhla Ghildiyal, GirishPai, D. S. Joshi, Mansee Rathore , Sunil Bhand, Souvik Pal. Title : A micro-trench based biochip device for screening of infectious diseases using Gold nano-particles / nano-coating - [Indian Patent Application No. 3620/MUM/2015 - Jointly by BARC, MGM Mumbai and BITS Pilani. Published 05-02-2016 No. 6/2016
2. Bhand Sunil, Chandra Sudhir, Pandya Hardik, Bacher Gautam, Kanungo Lizy "Device for detection and analysis of Mycotoxins" UK Patent application Publicaiton number GB2531924, Published on 04 May 2016.
3. Halan Prakash, Parakh Priyadarshini, Subramanian Gokulakrishnan, Prasad Panzade Filed as Indian, Patent Application no. 201611017381. "A bactericidal composition and a method for disinfecting water under visible light irradiation" Filed on 18 May 2016.

C. Conferences attended/papers presented: 24

1. Mainak Banerjee, "Mechanochemistry"—A facile approach for the construction of Heterocyclic scaffolds, National conference on Organic Chemistry in Sustainable Developments: Recent Advances and Future Challenges (OCSD 2016), August 29-30, 2016, BITS Pilani, Rajasthan.
2. Greg Anderson, Raghu N. Behera and Ravi Gomatam, A Theoretical Approach to Engineering a New Enzyme, 5th International Conference on Mathematical Modeling in Physical Sciences, Athenes, Greece, May 23-26, 2016.
3. Arunashree Panda and Raghu Nath Behera, A Computational Study on the Effect of Substituents on the Antioxidant activity of Glutathione Peroxidase Mimics, 5th International Conference on Research Frontiers in Chalcogen Cycle Science & Technology (G16 Asian), Goa, India, Dec 19 – 21, 2016.
4. Ram U. Gawas, Mainak Banerjee and Amrita Chatterjee, Green chemical synthesis of Benzimidazole based highly Selective "Turn-on" type fluorimetric probe for detection of perborate in aqueous media, Symposium on Recent Advancements in Chemical Sciences and Research Scholar Meet-2016 in BITS PILANI, K K BIRLA A CAMPUS, 13th November, 2016.
5. Akanksha Saini, Hardik Hingorani and Ranjan Dey, A modified Frenkel approach for viscometric prediction of binary and multicomponent liquid mixtures, Symposium on Recent Advancements in Chemical Sciences and Research Scholar Meet-2016, 13th November, 2016, BITS Pilani K K Birla Goa Campus. (Best poster Award)
6. Praveen P Rangnath, KartikeyaTiawari, Aditya Prakash Pandey and Ranjan Dey, A Study of Ultrasonic and Optical Properties of binary liquid Mixtures, Symposium on Recent Advancements in Chemical Sciences and Research Scholar Meet-2016, 13th November, 2016, BITS Pilani KK Birla Goa Campus
7. Praveen Saini and Anjan Chattopadhyay, Photochemical oxaziridine conversion and thermal E-Z isomerization processes of fluorescent α-(2-naphthyl)-N-methylnitron: A Computational Study, atINDO-

UK INTERNATIONAL WORKSHOP ON ADVANCED MATERIALS AND THEIR APPLICATIONS IN NANOTECHNOLOGY (AMAN 2016), BITS-Pilani, K.K.Birla Goa Campus, 11-12 Jan 2016.

8. Akanksha Saini, Hardik Hingorani and Ranjan Dey, A Novel method for Viscometric Prediction of Binary and Multicomponent Liquid Mixtures, INDO- UK INTERNATIONAL WORKSHOP ON ADVANCED MATERIALS AND THEIR APPLICATIONS IN NANOTECHNOLOGY (AMAN 2016) ,January 11-12, 2016.
9. S. Bhand, U. Roy, G.K. Mishra, R. Deshmukh, G. Bacher, A label-free biosensor for analysis of Escherichia coli and Salmonella in potable water, Presented at BIOSENSORS 2016 May 27-29, Gothenburg Sweden 2016.
10. A.C. Singh, G. Bacher, B. Danielsson, S.Bhand, Ultrasensitive detection of 17β -Estradiol in water using electrochemical impedance spectroscopy, presented at WORLD BIOSENSOR CONGRESS- May 27-29, Gothenburg Sweden 2016.
11. Aruna Chandra Singh, Souvik Pal, R. Balasubramaniam, Sunil Bhand, Zinc oxide nanoparticles enhanced sensitive detection of Organophosphates residues in water, presented at 1st International Conference on Nanoscience and Nanotechnology (ICNAN' 16) VIT University, Vellore; October 19-21, 2016
12. Arun Kumar Prusty, Sunil Bhand, Molecular imprinted polymer coated pencil graphite electrode based electrochemical capacitive sensor for 2,4-D estimation in water, presented in 1st International Conference on Nanoscience and Nanotechnology, (ICNAN' 16) VIT University, Vellore; October 19-21, 2016
13. Atul Sharma, Akhtar Hayat, Rupesh Kumar Mishra, GaëlleCatanante, Sunil Bhand, Jean Louis MARTY, Design of a nanomaterial based fluorescence aptaswitch using aptamer modulated nano-surface impact on the fluorescence particles, presented in Symposium on Recent Advancements in Chemical Sciences and RSC Research Scholar Meet 2016 organized on 13th November at BITS, Pilani-KK Birla Goa Campus, INDIA .
14. Atul Sharma, GaëlleCatanante, Akhtar Hayat, George Istamboulie, Sunil Bhand and Jean Louis Marty, Structure signaling aptasensing platform for detection of aflatoxin M1 in milk, presented in AMAN-2016 organized by BITS- Pilani K. K. Birla Goa Campus jointly with University of Leeds, UK from 11-12th January 2016.
15. Aruna Chandra Singh, GautamBacher, Sunil Bhand, An electrochemical impedimetricimmunosensor for ultrasensitive detection of estragon in water, presented in Symposium on Recent Advancements in Chemical Sciences and RSC Research Scholar Meet 2016 organized on 13th November at BITS, Pilani-KK Birla Goa Campus, INDIA .
16. Barun Kumar Ghosh, Debabrata Moitra, Madhurya Chandel and Narendra Nath Ghosh 'A facile route for preparation of magnetically separable $(m\text{TiO}_2@\text{CF})_x\text{RGO}_{(1-x)}$ nanocomposites and its photocatalytic activity towards degradation of various dyes under visible light' 2nd INDO- UK INTERNATIONAL WORKSHOP ON ADVANCED MATERIALS AND THEIR APPLICATIONS IN NANOTECHNOLOGY (AMAN 2016) in collaboration with Univ of Leeds, UK BITS Pilani, KK Birla Goa campus January 11- 12, 2016.
17. D. Moitra, B. K. Ghosh, M.Chandel, R. K. Jani, M. K. Patra, S. R. Vadera and N. N. Ghosh, Synthesis of $\text{Ni}_{0.8}\text{Zn}_{0.2}\text{Fe}_2\text{O}_4$ -RGO nanocomposite: An excellent magnetically separable catalyst for dye degradation and Microwave absorber, 2nd INDO- UK INTERNATIONAL WORKSHOP ON ADVANCED MATERIALS AND THEIR APPLICATIONS IN NANOTECHNOLOGY (AMAN 2016) in collaboration with Univ of Leeds, UK BITS Pilani, KK Birla Goa campus January 11- 12, 2016.
18. Madhurya Chandel, Harshit Sinha, Harshdeep Singh Hora, Barun Kumar Ghosh, Debabrata Moitra, Narendra Nath Ghosh, Synthesis of magnetic separable CuFe_2O_4 and $\text{RGO}@\text{CuFe}_2\text{O}_4$ nanocatalysts for reduction of various synthetic dyes, 2nd INDO- UK INTERNATIONAL WORKSHOP ON ADVANCED MATERIALS AND THEIR APPLICATIONS IN NANOTECHNOLOGY (AMAN 2016) in collaboration with Univ of Leeds, UK BITS Pilani, KK Birla Goa campus January 11- 12, 2016.
19. (3rd Prize for poster paper) Souvik Pal, Narendra Nath Ghosh, Paul A. Millner, Sunil Bhand, 'A turn off fluorescent nanosensor for analysis of Pb^{2+} in water, 2nd INDO- UK INTERNATIONAL WORKSHOP ON ADVANCED MATERIALS AND THEIR APPLICATIONS IN NANOTECHNOLOGY (AMAN 2016) in collaboration with Univ of Leeds, UK BITS Pilani, KK Birla Goa campus January 11- 12, 2016.
20. Samyak Dhole, Debabrata Moitra, Narendra Nath Ghosh, Density functional study of prototypical multiferroic bismuth ferrite, Symposium on Recent Advancements in Chemical Sciences and RSC Research Scholar Meet-2016 at BITS Pilani, KK Birla Goa Campus 13th November 2016
21. D. Moitra, M.Chandel, B. K. Ghosh, R. K. Jani, M. K. Patra, S. R. Vadera and N. N. Ghosh, A Simple 'in situ' Co-precipitation Method for Preparation of Multifunctional CoFe_2O_4 -Reduced Graphene Oxide Nanocomposites: Excellent Microwave Absorber and Highly Efficient Magnetically Separable Recyclable Photocatalyst for Dye Degradation, Symposium on Recent Advancements in Chemical Sciences and RSC Research Scholar Meet-2016 at BITS Pilani, KK Birla Goa Campus 13th November 2016
22. Barun Kumar Ghosh, Harshita Lulla, Madhurya Chandel, Narendra Nath Ghosh, Ag nanoparticle immobilised mesoporous TiO_2 -Cobalt Ferrite nanocatalyst: A versatile, magnetically separable and reusable

catalyst, Symposium on Recent Advancements in Chemical Sciences and RSC Research Scholar Meet-2016 at BITS Pilani, KK Birla Goa Campus 13th November 2016 .

23. Madhurya Chandel, Harshit Sinha, Harshdeep Singh Hora, Barun Kumar Ghosh, Debabrata Moitra, Narendra Nath Ghosh, Synthesis of magnetic separable CuFe_2O_4 and $\text{RGO@CuFe}_2\text{O}_4$ nanocatalysts for reduction of various synthetic dyes, Symposium on Recent Advancements in Chemical Sciences and RSC Research Scholar Meet-2016 at BITS Pilani, KK Birla Goa Campus 13th November 2016
24. Dr. N. N. Ghosh, Development of Novel Synthetic Routes for Preparation of Variety of Nanostructured materials: Magnetic Nanoparticles, Advanced Nanocatalysts, Graphene oxide based nano-composites and their Applications' 2nd INDO- UK INTERNATIONAL WORKSHOP ON ADVANCED MATERIALS AND THEIR APPLICATIONS IN NANOTECHNOLOGY (AMAN 2016) in collaboration with Univ of Leeds, UK BITS Pilani, KK Birla Goa campus January 11- 12, 2016.
25. Banerjee, S. 'Push-pull dicyanodibenzodioxins – a new class of planar polycyclic heteroaromatic hydrocarbons with UV to visible optical spectra and weak fluorescence' at Recent Developments and Applications in Chemical Sciences (RDACS 2016) 20-21 May, 2016, at Department of Chemistry, National Institute of Technology, Agartala

D. Books Published/Edited during the year: 01

1. Chemiluminescence and Fluorescence Optical Biosensor for the Detection of Aflatoxins in Food, (Chapter 7)

Sunil Bhand, LizyKanungo and Souvik Pal, Food Biosensors, 2016, 161-181.

DOI:10.1039/9781782623908-00161

Food Biosensors , Editors: MinhazUddin Ahmed, Mohammed Zourob, Eiichi TamiyaPublished by Royal Society of Chemistry <http://pubs.rsc.org/en/content/ebook/978-1-78262-361-8#!divbookcontent>

E. Conferences, seminars & workshops conducted: 04

1. 2nd Indo- UK International Workshop on Advanced Materials and their Applications in Nanotechnology (AMAN 2016) in collaboration with Univ of Leeds, UK at BITS Pilani, KK Birla Goa campus January 11- 12, 2016.
2. Symposium on Recent Advancements in Chemical Sciences and RSC Research Scholar Meet-2016 (13th November 2016 at BITS Pilani, KK Birla Goa Campus).
3. BRNS-AEACI Twelfth School on Analytical-Chemistry (SAC-12), organized by Board of Research in Nuclear Sciences (BRNS) and Association of Environmental Analytical Chemistry of India (AEACI) in collaboration with Department of Chemistry, BITS Pilani K K Birla Goa Campus during Nov., 15-22.
4. The 4th International Conference on Advanced Oxidation Processes (AOP-2016) was held at BITS Pilani, K K Birla Goa Campus, from 17-20 December 2016. AOP-2016 conference was organized by BITS Goa campus in association with the Society of Environmental Chemistry and Allied Sciences (SECAS)

F. Invited Talks given by BITS faculty: 07

1. Prof. Sunil Bhand Delivered invited talk: Miniaturized sensor for monitoring antibiotic residues in water "TECO Networking conference under EU-India Research and Innovation partnership" Nov. 16-17, 2016 Habitat Place, N Delhi India.
2. Prof. Sunil Bhand Delivered Mentor Lecture: Environmental Analysis-Challenges and opportunities at "INSPIRE Internship Science Camp 2016 at Christ College Rajkot Oct. 22, 2016, Sponsored by Department of Science & Technology N Delhi. <http://www.christcollegerajkot.edu.in/Inspire-2016-Day-2/>
3. Prof. Sunil Bhand Delivered Invited talk: Nanomaterials based biosensors: applications in environmental and clinical analysis, at 1st International Conference on Nanoscience and Nanotechnology, organized by Centre for Nanotechnology Research VIT Vellore, 19-21 Oct. 2016.
4. Prof. Sunil Bhand delivered Invited Lecture: Chemiluminescence Probes for optical biosensing in environmental analysis, BRNS-AEACI Twelfth School in Analytical Chemistry (SAC-12) Nov. 15-22, 2016 BITS Goa.
5. Dr. Mainak Banerjee delivered Lecture: "Mechanochemistry"—A facile approach for the construction of Heterocyclic scaffolds" in a national conference OCS, held in Pilani during 29th – 30th August, 2016.
6. Dr. Amrita Chatterjee delivered lecture: Chemo-dosimeter the reaction based chemical sensor for heavy metal, anions and gases in BARC Mumbai, 10th November, 2016.

7. Dr. N. N. Ghosh delivered lecture: New and Novel Synthetic Routes for Preparation of Variety of Nanostructured materials and their Applications, at University of Tartu, Estonia Mon 12.09.16

G. Invited talks arranged in the department: 02

1. Guest Lecture by Prof. Horst Koppel, University of Heidelberg, Germany (December 12, 2016).
2. Lecture by Dr. Sandeep Chaudhary, Malaviya National Institute of Technology, Jaipur (March 21, 2016)

H. Awards and recognitions won by faculty and student

1. Prof. Sunil Bhand has been presented "Joseph Wang Award 2015", by Cognizure publishing in recognition of his research excellence in the area of Analytical Chemistry (Announced in 2016).
2. Dr. N.N. Ghosh received Visiting Scholar award for teaching in Erasmus Mundus Joint Master Degree programme EACH - Excellence in Analytical Chemistry in University of Tartu, Estonia.
3. Dr. N.N. Ghosh received Visiting Professor position from University of Leeds, UK.
4. Prof Sunil Bhand was invited as expert in the area of Biosensors for evaluation of Indo French Project proposals in Sept 2016 jointly funded by BIRAC and CEFIPRA
5. Prof Sunil Bhand became the founding Honorary Secretary and Life member of the Indian Institute of Metals –Goa Chapter in Sep. 2016.
6. Dr. Ranjan Dey received Visiting Associate Professorship from National Taiwan University of Science and Technology (NTUST), Taipei, Taiwan.
7. Dr. Halan Prakash Awarded EACH visiting scholarship to teach at University of Tartu, Estonia under Erasmus + program. Visited University of Tartu between 02.10.2016 – 14.10.2016, and taught a course on Analytical Methods in Advanced Oxidation Process based water treatment.
8. Dr. Halan Prakash was Selected as Guest Editor for the publishing the special issue "AOP-2016 at BITS Pilani K K Birla Goa Campus" in the reputed journal of Environmental Chemical Engineering.

I. Faculty Development, International Collaboration & Industry Immersion

1. Dr. Mainak Banerjee: Industry Immersion to Syngenta Bioscience Pvt. Ltd. (June-July, 2016)
2. Dr. R.N. Behera: Co-Chair, "5th International Conference on Research Frontiers in Chalcogen Cycle Science & Technology (G16 Asian)", Organized by UNESCO-IHE and NITK Surathkal in association with BITS Pilani – Goa Campus and IIT Guwahati, Dec 19 – 21, 2016 at Goa, India.
3. Dr. Amrita Chatterjee: Industry Immersion to NIO Goa . (June-July, 2016)
4. Dr. Halan Prakash collaborated with Prof. Clara Comuzzi, University of Udine, ITALY and student exchange. Ms. Merlyn Thandu, Postdoctoral Fellow from University of Udine, ITALY who worked under supervision of Dr. Halan Prakash at BITS Pilani K K Birla Goa Campus between May, 2016 and November 2016.
5. Dr. Ranjan Dey Visited National University of Singapore (NUS), Nanyang Technical University (NTU), Singapore and National Taiwan University, Taiwan and Chung Yuan Christian University, Taoyuan, Taiwan to discuss Student and Faculty Exchange and joint Research Collaborations.
6. Dr. Ranjan Dey reviewed papers for Journal of Chemical Thermodynamics, Journal of Molecular Liquids, Journal of Solution Chemistry and International Journal of Thermophysics. He was invited to Review Papers for CMSE 2016, Global Conference on Material Science and Engineering, held in Taiwan in October 2016.
7. Prof. Sunil Bhand visited the Swedish Incubator company Acromed Invest AB Lund Sweden for two weeks during June 2016 to carry out joint research and technology development in the area of nano-sensors.
8. A technology for sensing of pesticide residues in tea was successfully developed by Prof Sunil Bhand (BITS, Goa) jointly with CDAC Kolkata and TRA Jorhat. The technology using a prototype was demonstrated to about 50 large and small tea growers at TRA Jorhat on June 30, 2016 in Assam. The work was financially supported by the Tea Board, Ministry of Commerce and Industry.
9. Dr. N.N. Ghosh was invited by Professor Ivo Leito to deliver an invited talk and collaborative research at University of Tartu, Estonia. Department of Chemistry (9th -14th September 2016)
10. Dr. N.N. Ghosh was invited by Professor G F Fernando for collaborative research related to Newton Research Collaboration Programme award at University of Birmingham, UK. School of Metallurgy and Materials (19th July 2016 to 28th July 2016). Visit was sponsored by: Royal Academy of Engineering, UK
11. Dr. N.N. Ghosh was invited by Professor Paul Millner for collaborative research related to DST-UKIERI project at University of Leeds, UK: School of Biomedical Science (30th January 2016 to 06th February 2016). Visit was sponsored by: DST-UKIERI project grant.

J. Significant new equipments/experimental facility added during the year

1. Guoy Balance, MSB-Auto, SHERWOOD SCIENTIFIC LTD, UK installed.
2. Benchtop NMR, Oxford Instruments (Order placed)

K. Departmental association/club activities: Department seminars delivered by students and faculty :**Talks given by the faculties**

- Dr. N.N. Ghosh delivered a talk on "Novel Synthetic Routes Developed by Ghosh's Group for Preparation of Variety of Nanostructured materials: Magnetic Nanoparticles, Advanced Nanocatalyst, Graphene oxide based nano-composites and Their Applications"
- Dr. Venkatesan Thimmakonda delivered a talk on "Molecules in my laptop, others' laboratories and in interstellar space?"
- Dr. Mainak Banerjee delivered a talk on " Mechanochemistry—A facile approach for the construction of Heterocyclic scaffolds"
- Dr. Ranjan Dey delivered a talk on "Molecular Interaction Studies employing Prediction of Transport, Optical and Interfacial Properties for Binary, Ternary and Higher Order Liquid Mixtures"

B2.10.2 Department: Chemical Engineering

Number of faculty members (as on 31 December 2016): 14

Senior Professors, Professors	03
Associate Professors	02
Assistant Professors	05
Lecturers	04
Non-tenure track	
Adjunct Professor	01
Honorary Visiting Professor	01

Head of the Department: Prof. S. S. Baral**Contact details (email):** ssbaral@goa.bits-pilani.ac.in**Number of PhD Scholars:** 04 (full time), 03 (part time)**Number of Project Fellows:** 06**No. of Post-Doctoral Scientists:** 00**Ph.D. Thesis awarded during the year:** 00**A. Sponsored Research activities:****(i) Ongoing projects: 08**

Name of the Investigator	Title of the project and duration	Amount sanctioned (Lakhs)	Funding Agency
Srinivas Krishnaswamy K.N. Ponnani (Co-PI)	Seawater desalination using refrigeration (3 years)	382.21	GAIL (India) Limited
Srinivas Krishnaswamy K.N. Ponnani (Co-PI)	Experimental and Simulation Studies on Coke Mitigation in Petroleum Refinery Systems (3 years)	132.97	Centre for High Technology (CHT)
Asima Shaukat	Rheological dynamics of polymer-layered silicate/ graphene nano-composites (3 years)	35 (7 lakhs per year)	INSA INSPIRE, DST
Jegatha Nambi Krishnan	Ion selective sensors for heavy metal ion detection in water medium	15 (5 years) (After Review of Opera Award Assessment, on 3 rd year, it has been extended for the remaining period upto 10/9/2018 and the grant has been revised to Rs.3.60 lakhs per year)	BITS Pilani (OPERA Award)
Sutapa Roy Ramanan (PI) Dr. Meenal Kowshik (Co-I)	Synthesis of hydroxyapatite based biocompatible functional magnetic nanoparticles and investigation of its interaction with biomolecules	Rs.45000	UGC-DAE-CSR and BARC Mumbai
Dr. Meenal Kowshik (PI) Sutapa Roy Ramanan (Co-PI)	Lanthanide doped hydroxyapatite based nano-materials for theranostics applications: Sensing, Imaging, and Therapeutics	Rs.3964771	DST
Dr. S. S. Baral	Development of efficient bioleaching process for the metal recovery from spent catalysts,	Rs. 26,56,600/-	Department of Biotechnology, Government of India.
Dr. S. S. Baral	Investigating the effect of co-digestion and advanced sludge pre-treatment methods on the anaerobic conversion potential of the organic wastes (As Co-	Rs.27,48,860/-	Department of Biotechnology, Government of India

Name of the Investigator	Title of the project and duration	Amount sanctioned (Lakhs)	Funding Agency
	Investigator)		

(ii) Projects sanctioned during the year: 04

Name of the Investigator	Title of the project and duration	Amount sanctioned (Rs.)	Funding Agency
Srinivas Krishnaswamy	Unmixed Reforming (UMR) of Methane for Hydrogen Production – Approved on 8 th Nov 2016	56.111	DST-SERB
AsimaShaukat	Visco-elastic, visco-plastic and thixotropic behavior of biogreases and its influence on lubrication (tribological) performance, 3 years	54.673	DST-SERB, Govt. of India
Jegatha Nambi Krishnan	Chlorine resistant Nano Enhanced Polymer Blend Membranes, 3 years	3174281	DST - SERB
Jegatha Nambi Krishnan	Ion Selective Sensor for Arsenic Detection in Water medium, 2 years	2 lakhs	DSTE, Govt. Of Goa

(iii) Projects approved during the year (new): _____**(iv) Projects completed this year: 02**

Name of the Investigator	Title of the project and duration	Amount sanctioned (Rs.)	Funding Agency
Srinivas Krishnaswamy K.N. Ponnani (Co-PI)	High - efficiency energy conversion in steam boilers using unmixed combustion	31.05 (Thermax) (DST) and 4.00 (Thermax)	DST / Thermax Ltd. Pune
Jegatha Nambi Krishnan	Electroless Deposition of Metallic Nanostructures on Metallic Substrates for Sensor Applications, 2 years	2 lakhs	BITS Pilani, RIG Grant

B. Publications:17

- Amol Deshpande, Srinivas Krishnaswamy & K. N. Ponnani, "Pulsed Micro-reactor: An alternative to estimating kinetic parameters of non-catalytic gas-solid reactions", Chemical Engineering Research & Design, 117, (2017), 382 – 393 (in press)
- Manjuri K. Koley, Om Prakash Chouhan, Sumit Biswas, Joseph Fernandes, Arnab Banerjee, Anjan Chattopadhyay, Babu Varghese, Periakaruppan T. Manoharan and Aditya P. Koley: Spectroscopic, electrochemical and DNA binding studies of some monomeric copper(II) complexes containing N₂S(thiolate)Cu core and N₄S(disulfide)Cu core. Inorganica Chimica Acta, Elsevier, vol. 456, 179-198, (2017).
- Ravi Teja, Debopamaa Debnath, Arnika Jain and Manjare S D, "Modeling and Simulation of PBI based High Temperature Proton Exchange Membrane Fuel Cell " accepted for publication in Journal of Materials Today Proceedings, Elsevier Publication, 2016.
- Probal Guha, Tanmay Netke, Manjare S D, "Mathematical Modeling of Bitumen and Oil Shale Extraction Using Supercritical Fluid" Published in the book (chapter no 28) titled "Recent Advances in Chemical Engineering" published by Springer Science Singapore 2016, PP 257-268 (ISBN 978-981-10-1632-5), DOI 10.1007/978-981-10-1633-2_28.
- Banal Shashwat and Manjare S D, "Theoretical Investigation on the Performance of Multicomponent Distillation Column for the Separation of Hydrocarbon Mixture Using Inside out Approach" International Journal of Chemical Engineering and Applications" Volume 7, No 4, 282-286, 2016 (doi: 10.18178/ijcea.2016.7.4.590).
- Banal Shashwat and Manjare S D "Detailed Simulation Approach of a Multicomponent Distillation Column using Inside Out Method: A Review" International Journal of Chemical Engineering, Vol.9, No.2 (2016)
- Manjare S D, Mohite R J "Cradle-to-gate and Gate to Gate Approach for Life Cycle Assessment of the Fertilizer Production" International Journal of Environmental Pollution Control and Management, Vol.8, No.2 (2016)

8. G. Surendran, S. S. Baral, Selection of suitable adsorbent for the removal of Cr(VI) by using Objective Based Multiple Attribute Decision Making (MADM) method, *International Journal of Chemical Engineering and Applications*, Accepted.
9. S. S. Baral, K. Raja Shekar, V. Viswanathan, G. Surendran, Dissolution Kinetics of Cerium from red mud, *Separation Science and Technology*, Accepted, 2016 Taylor Francis (IF 1.083)
10. A.S.Sai Pavan and Sutapa Roy Ramanan, A study on corrosion resistant graphene films on low alloy steel, *Appl Nanosci.*, 19th April 2016, DOI 10.1007/s13204-016-0530-2.
11. Low-temperature-processed biocompatible Ag-HAp nanoparticles with anti-biofilm efficacy for tissue engineering applications, Ketaki R. Deshmukh, Sutapa Roy Ramanan, Meenal Kowshik, *J Sol-Gel Sci Technol*, DOI 10.1007/s10971-016-4149-2.
12. Self-activated fluorescent hydroxyapatite nanoparticles: a promising agent for bio-imaging and bio-labeling, Ketaki Deshmukh, M Monsoor Shaik, Sutapa Roy Ramanan, and Meenal Kowshik, *ACS Biomaterials Science and Engineering*, DOI: 10.1021/acsbomaterials.6b00169
13. Vaishnavi Unde, Srikanth Mutnuri, Sachin Waigoakar, "Experimental investigation of bio-indigo produced by *Pandoraea sp.*" *Indian Journal of Biotechnology*.(Communicated)
14. Vaishnavi Unde, Srikanth Mutnuri, "Comparative study of production of Bio-Indigo by *Pandoraea sp.* in a two phase -fed batch and continuous bioreactor", *Carbon- Science and Technology*, 8-1 (2016), 40-46.
15. V. Dhanya Ram and M.Chidambaram., 'Identification of Centralised Controlled Multivariable Systems', *Indian Chemical Engineer*, 58 (3),240-254, 2016.<http://dx.doi.org/10.1080/00194506.2015.1029285>
16. Performance enhancement using multiple cryogenic desublimation based pipeline network during dehydration and carbon capture from natural gas, A Ali, K Maqsood, A Redza, K Hii, ABM Shariff, S Ganguly, *Chemical Engineering Research and Design*, IChemE London, 109, 519-531, 2016.
17. Effect of solvent on nanostructure and thermoelectric properties of bismuth, C Kulsli, P Dhara, M Mitra, K Kargupta, S Ganguly, D Banerjee, *Indian Journal of Physics* 90 (5), 557-562, 2016.

Patents: 00

C. Conferences attended/papers presented: 25

1. Amol Deshpande, Srinivas Krishnaswamy, Krishnaswamy Ponnani, Modeling of Unmixed Combustion based packed bed reactor system used for heat transfer applications, 69th Annual session of IChE, CHEMCON – 2016, Anna university, Chennai, December 27 – 30, 2016 (Accepted for oral presentation and proceedings)
2. Manjuri Kumar, Om Prakash Chouhan, Sumit Biswas, Joseph Fernandes, Arnab Banerjee, Angshuman Sarkar, Aditya P. Koley: Mixed ligand Cu(II)/Zn(II) complexes containing heterocyclic bases show enhanced DNA binding activity and cytotoxicity. Indo-UK International Workshop on Advanced Materials and their applications in nanotechnology: (AMAN 2016), BITS-Pilani, K.K. Birla Goa Campus, 11-12 January 2016
3. Manjuri Kumar, Two days workshop on Environmental Management System. BITS-Pilani, K.K. Birla Goa Campus in collaboration with Goa State Pollution Control Board. 20-21 st Oct 2016
4. Manjuri Kumar :Catechol Oxidase Activity of some mononuclear Cu(II) Complexes containing N-S Donor ligands. Fourth International Conference on Advanced Oxidation Processes (AOP-2016) Dec 17-20 2016.
5. G. Surendran, S. S. Baral, optimization of Cr(VI) adsorption process using statistical design of experiments, CHEMCON-2016, 28th -30th December, 2016, Chennai, India.
6. G. Surendran, S. S. Baral, process technology for removal of Chromium by using sludge from pig iron industry, CHEMCON-2016, 28th -30th December, 2016, Chennai, India.
7. G. Surendran, S. S. Baral, Kinetics, isotherm and mechanism study on treatment of Cr(VI) contaminated water using coconut leave, CHEMCON-2016, 28th -30th December, 2016, Chennai, India.
8. G. Surendran, S. S. Baral, Treatment of Cr(VI) contaminated wastewater by *Sorghastrum Nutans* (L) Nash (natural grass.), 11th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES-2016), Conference, 4th – 9th September, 2016, Lisbon, Portugal.
9. S. S. Baral, P. V. Rao, G. Surendran, Pretreatment of organic composite waste mixtures for enhanced biomethanation, 11th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES-2016), Conference, 4th – 9th September, 2016, Lisbon, Portugal.
10. Hanish Gupta and Manjare S. D on Sustainable Development of Energy, Water and Environment System, held at Lisbon, Portugal, Sep 4-9, 2016, pp 206. ., "Improvement in Isooctane production process via introduction of Mass Exchange Network (MEN), published in the proceedings of *International Conference*
11. Tanmay Singhal and Manjare S. D., "Absorption of CO₂ from Coal Based Thermal Power Plant Using Monoethanolamine (MEA) Solution", published in the proceedings of *International Conference* on

Sustainable Development of Energy, Water and Environment System, held at Lisbon, Portugal, Sep 4-9, 2016, pp 395.

12. Tanmay Singhal and Manjare S. D., "Modelling Studies on Reactive Absorption of SO₂ From Flue Gas in Coal Based Thermal Power Plant", published in the proceedings of 5th *International Conference* on research frontiers in chalcogen cycle science and technology, organized by UNESCO-IHE, NIT Surathkal held at Goa, December 19-21, 2016, pp 46.
13. Chayan Anand; Manasvi Nandwana and Sampatrao D. Manjare., "An overview of current status of sulfur oxides emissions and reduction technologies", published in the proceedings of 5th *International Conference* on research frontiers in chalcogen cycle science and technology, organized by UNESCO-IHE, NIT Surathkal held at Goa, December 19-21, 2016, pp 27.
14. Garad N M and Sampatrao D Manjare, "Environmental Management Tools for Sustainable Development" published in the proceedings of 10th ISDSI (Indian Subcontinent Decision Sciences institute) *International Conference* held at Nasik, December 28-30, 2016, pp 68-69.
15. G. Surendran, S. S. Baral, optimization of Cr(VI) adsorption process using statistical design of experiments, CHEMCON-2016, 28th -30th December, 2016, Chennai, India.
16. G. Surendran, S. S. Baral, process technology for removal of Chromium by using sludge from pig iron industry, CHEMCON-2016, 28th -30th December, 2016, Chennai, India. Won the best oral presentation under the category of adsorption.
17. G. Surendran, S. S. Baral, Kinetics, isotherm and mechanism study on treatment of Cr(VI) contaminated water using coconut leave, CHEMCON-2016, 28th -30th December, 2016, Chennai, India.
18. G. Surendran, S. S. Baral, Treatment of Cr(VI) contaminated wastewater by Sorghastrum Nutans (L) Nash (natural grass.), 11th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES-2016), Conference, 4th – 9th September, 2016, Lisbon, Portugal. Won the Best Exhibit award.
19. S. S. Baral, P. V. Rao, G. Surendran, Pretreatment of organic composite waste mixtures for enhanced biomethanation, 11th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES-2016), Conference, 4th – 9th September, 2016, Lisbon, Portugal.
20. Suprabhat Bhagavathula, Joshi Manasi Satchit, Sutapa Roy Ramanan and Jegatha Nambi Krishnan*, "Fabrication and characterization of Nanoporous Gold film Electrode", International Conference on New Frontiers in Chemical, Energy and Environmental Engineering (INCEEE-2015), NIT Warangal, India.
21. S. Bhagavathula, S. R. Ramanan, S. K. Kim and J. N. Krishnan*, "Fabrication of Electroless Plated Nano Porous Gold Film for Heavy Metal Ion Detection in Sensor Applications", 2015 TechConnect World Innovation Conference and Expo (NanoTech-2015), Gaylord National Resort and Convention Center, National Harbor, Washington, D. C., U. S. A.
22. Manasi Joshi, Swastic, Jaya Krishna Vemula, Kumar Priyadarshi, Aparna Deshpande, Sutapa Roy Ramanan, Jegatha Nambi Krishnan*, "Nanocharacterization Studies on Surface Modified Nanoporous Gold Films for Sensor Applications", 2016 TechConnect World Innovation Conference and Expo (NanoTech-2016), Gaylord National Resort and Convention Center, National Harbor, Washington D. C., U. S. A.
23. Manasi Joshi, Swastic, Jaya Krishna Vemula, Kumar Priyadarshi, Aparna Deshpande, Sutapa Roy Ramanan, Jegatha Nambi Krishnan*, "Nanocharacterization Studies on Surface Modified Nanoporous Gold Films for Sensor Applications", 2016 TechConnect World Innovation Conference and Expo (NanoTech-2016), Gaylord National Resort and Convention Center, National Harbor, Washington D. C., U. S. A.
24. Arivarasi, R. A. Kumar* and J. Nambi Krishnan, "Design and Material characterization for 3D printed Sensor", 9th International Conference on Circuits, Systems and Signals" (CSS'16), Dubrovnik, Croatia.
25. Arivarasi, R. A. Kumar* and J. Nambi Krishnan, "Design and Material Characterization of Potassium Gold Cyanide Immersed Layers for 3D Printing Nano Sensor", World Congress on Engineering and Computer Science, International Conference on Electrical Engineering and Applications (ICEEA'16), San Francisco, U. S. A.

D. Books Published/Edited during the year: 4

1. A Book chapter (No. 28) on "Mathematical Modeling of Bitumen and Oil Shale Extraction Using Supercritical Fluid" Published in the book titled "Recent Advances in Chemical Engineering" published by Regupathi et al. (eds.), Springer Science + Business Media Singapore 2016, PP 257-268 (ISBN 978-981-10-1632-5), DOI 10.1007/978-981-10-1633-2_28.
2. Prepared course material on "International Organization for Standardization (ISO) 14000", for proceedings of the two days workshop on Environmental Management Systems for Industries in Goa, held at BITS Pilani K K Birla on 20th-21st October 2016.

3. Prepared course material on “Life Cycle Assessment”, for proceedings of the two days workshop on Environmental Management Systems for Industries in Goa, held at BITS Pilani K K Birla on 20th-21st October 2016.
4. Prepared course material on “Environmental Audit”, for proceedings of the two days workshop on Environmental Management Systems for Industries in Goa, held at BITS Pilani K K Birla on 20th-21st October 2016.

E. Conferences, seminars & workshops conducted: 02

1. Conducted Two days Workshop on Environmental Management Systems on 20th-21st October 2016.
Coordinator: Prof. S.D. Manjare
Joint Coordinator: Prof. Saroj Sundar Baral
2. Three Days Workshop on Molecular Dynamics: Basics & Application on 19th -21st November 2016

F. Invited Talks given by BITS faculty: None

G. Invited talks arranged in the department: 07

I. Speaker: Prof. Philip Jaeger

Managing Director of Eurotechnica GmbH, Germany.

Topic 1: Interfacial properties at elevated pressures in processes of enhanced oil and gas recovery

Date and Time: 4th October 2016.

Topic 2: Production of Antibactericidal Biomaterials by a combined supercritical extraction and impregnation process

Date and Time: 5th October 2016.

II. Speaker: Dr. Pratik Swarup Dash

HEAD (COAL & COKE MAKING RESEARCH GROUP), R&D, Tata Steel

Date and Time : 16th September 2016, Friday

Topic: Dull Grey To Sparkling Black

III. Speaker: Dr. K. Marutiram

Head R&D and Scientific services, JSW

Topic: Will of Steel

Date: 21th April 2016

IV. Speaker: Professor M. M. Sharma, FRS, Emeritus Professor of Eminence, Institute of Chemical Technology, (Deemed University), Mumbai

Topic: Cleaner and Greener is Smarter; Conversion of Liabilities into Assets

Date and Time: Wednesday, 6th April 2016

V. Speaker: Prof. Aniruddha B. Pandit, Department of Chemical Engineering, Institute of Chemical Technology, Mumbai (India)

Topic: Environmental Management: Way to the Era of Sustainability

Date and Time: Wednesday, 6th April 2016

VI. Speaker: Prof. Vilas G. Gaikar, Bharat Petroleum Chair Professor of Chemical Engineering Department of Chemical Engineering, Institute of Chemical Technology (ICT),

Topic: Basics of Molecular modeling and it's applications in separation-process

Date and Time: 19th November 2016

**VII. Speaker: Mr. Ranjit Singh Chugh, Chief Manufacturing Officer, Zuari Industries, Goa
Topic: Chemical Engineer & Process Industry. Leadership role Specialist Chemical/Process Engineer**

Date and Time: Wednesday, 6th April 2016

H. Awards and recognitions won by faculty and student

1. Mr. G. Surendran and Prof. Saroj Sundar Baral have won 'Best Poster Award' for "Kinetics, Isotherm and Mechanism Study for Treatment of Cr(VI) Contaminated waste water using Sorghastrum Nutans(L) Nash-Natural grass" at 11th SDEWES Conference, Lisbon Portugal September 4-9, 2016..
2. Dr. Jegatha Nambi Krishnan has been awarded International Travel Support for attending NanoTech 2016 TechConnect World Innovation Conference from INSA/CICS
3. Dr. Asima Shaukat has been awarded 'Early Career Research Award 2016', DST-SERB, Govt. of India
4. Dr. Jegatha Nambi Krishnan has been awarded 'Early Career Research Award 2016', DST-SERB, Govt. of India
5. Ms. Parul Sahu and Prof. Srinivas K - Awarded 1st place in poster presentation in the category 'Heat Transfer' for 'Study of U-tube Scraped Crystallizer for Desalination' at 69th Annual Session of IChE, CHEMCON 2016, Chennai December 27-30 2016
6. Mr. G. Surendran and Prof. Saroj Sundar Baral - Awarded 1st place in paper presentation in the category 'Adsorption' for 'process technology for removal of Chromium by using sludge from pig iron industry ' at 69th Annual Session of IChE, CHEMCON 2016, Chennai December 27-30 2016

I. Faculty Development, International Collaboration & Industry Immersion : None**J. Significant new equipments/experimental facility added during the year:**

1. Anton Paar Physica 302 Rheometer (Order is placed, yet to receive the Item)
2. GC

K. Departmental association/club activities:

1. IChE Goa Regional Centre Inaugurated on 6th April 2016
2. Several invited talks arranged in Association with IChE Goa regional Centre.

Other activities: NA

B2.10. 4 Department: Computer Science & Information Systems

Number of faculty members (as on 31 December 2016): 20

Senior Professors, Professors	02
Associate Professors	03
Assistant Professors	06
Lecturers	09
Visiting Faculty	00

Head of the Department: **Dr. B. M. Deshpande**Contact details: *bmd@goa.bits-pilani.ac.in*

Number of PhD Scholars: 25 [5 (Full Time) + 10 (lecturers) + 10 (Part Time)]

Ph.D. Thesis Submitted during the year: 04

A. Sponsored Research activities:Total number of Sponsored Projects in the department: **08**. Details are given below.**(i) Ongoing projects: 3**

S.No	Project Name	Principal Investigator	Funding Agency	Sanctioned Amount (Lakhs)	Duration
1	Addressing Challenges in Application Development for Heterogeneous Computing Platform for Speedup and Power Efficiency	Prof. Santonu Sarkar	Science and Engineering Research Board (SERB), Govt of India	37.55	Nov.2014- Nov.2017
2	Home automation and smart wheel chair based on Electroencephalography (EEG) signals produced in brain	Dr. Veeky Baths (with Prof. Bharat Deshpande as co-PI)	Cognitive Science Research Initiative (CSRI) of DST	39	July 2015 - July 2018
3	Applications of High Performance Computing to Software Engineering and Data Analytics	Prof. Ashwin Srinivasan	Additional Competitive Research Grant	14	2015-2017

(ii) Projects sanctioned during the year: 2

S.No	Project Name	Principal Investigator	Funding Agency	Sanctioned Amount (Lakhs)	Duration
1	Development of Remotely Configurable Arbitrary Ramp Generator for Frequency Modulated Continuous Wave Reflectometry	Prof. Neena Goveas (with Dr. Amlan Prince as co-PI)	BRNS	28 lakhs	2016 - 2019
2	Secure Vehicular Communication and Routing In Future Intelligent Transportation Systems (ITS)	Dr. Debasis Das	Science & Engineering Research Board (SERB)	49.73	2016 - 2019

(iii) Projects completed this year: 3

S.No	Project Name	Principal Investigator	Funding Agency	Sanctioned Amount (Lakhs)	Duration
1	Implementation of Wireless Sensor Network for Process Monitoring of GAIL's Pipeline	Prof. K. R. Anupama (with Prof. Neena Goveas and Dr. Lucy J. Gudino as Co-Investigators)	GAIL	98.78	Oct.2014 - Jan 2016
2	A Cost-Effective Approach of Making Software Dependable	Prof. Santonu Sarkar	Accenture Technology Labs	16	Aug.2015 - Aug.2016
3	Neutron Stars as a Source of Potential Continuous Gravitational Wave Emitter	Dr. T.K. Jha (with Dr. Sanjay Sahay as co-PI)	BRNS	17	Jun 2013 - Jun 2016

10. Publications:(Journals). 15

- Debasis Das and Rajiv Misra, "IntersectionCast: Approximation Algorithm for MultiDirectional Broadcast Storm in VANETs", International Journal of Communication Networks and Distributed Systems (IJCNDS), Switzerland, Inderscience Enterprises Ltd., Vol. 18, 2016, pp. 1-20.
- Sreyash Ratna Tripathi, Shreya Mahabala Alva and Debasis Das, "Algorithm for Leader Node Selection in Vehicular Adhoc Networks(VANETs) at Road Intersection", International Journal on Future Computer and Communication (ICFCC 2016), Singapore, Vol. 5, 2016, pp. 1-6.
- T. Virajita Sharma, Usha Kiran Singh, and Debasis Das, "Connected Dominating Set Based Node Centrality in Wireless Networks", International Journal on Future Computer and Communication (ICFCC 2016), Singapore, Vol. 5, 2016, pp. 1-6.
- R.K. Roul and S.K. Sahay, Cluster labelling using chi-square-based keyword ranking and mutual information score: A hybrid approach. Accepted in Inderscience, Int. J. Intelligent Systems Design and Computing, 2016.
- Aruna Govada and S.K. Sahay, A Communication Efficient and Scalable Distributed Data Mining for the Astronomical Data. [SCle] Elsevier, Astronomy and Computing, Vol. 16, pp. 166 - 173, 2016
- Ashu Sharma and S.K. Sahay, An effective approach for classification of advanced malware with high accuracy. International Journal of Security and Its Applications, Vol. 10, No. 4, pp. 249-266, 2016
- R.K.Roul, Shubham Rohan Asthana and Mit Shah and Dhurvish Parikh, Detection of spam web pages using content and link-based approach, Indian Academy of Sciences(SADHANA), Springer, Vol. 41, No. 2, pp. 193-202, February-2016
- R.K.Roul, S.R. Asthana and G Kumar, Study on suitability and importance of multilayer extreme learning machine for classification of text data, Soft Computing, Springer, Vol 20, No 6, pp. 1-18, June-2016
- R.K.Roul, S.R. Asthana and G Kumar, Spam Web Page detection using combined content and link features, International Journal of Data mining Modeling and Management (IJDMM), Inderscience, Vol 8, No.3, pp. 209-222, Sep-2016
- R.K.Roul, Detecting Spam Web Pages using Multilayer Extreme Learning Machine:International Journal of Big Data Intelligence (JBDI), Inderscience, Nov-2016
- Soumyadip Bandyopadhyay, Dipankar Sarkar, Chittaranjan A. Mandal, Kunal Banerjee, Krishnam Raju Duddu: A Path Construction Algorithm for Translation Validation Using PRES+ Models. Parallel Processing Letters 26(2): 1-25 (2016)
- Abhinandan H. Patil, Neena Goveas, Krishnan Rangarajan, Regression Test Suite Prioritization using Residual Test Coverage Algorithm and Statistical Techniques, J. Education and Management Engineering, 5, 32-39 (2016)
- Subhajit Datta, Santonu Sarkar, ASM Sajeev, How Long Will This Live? Discovering the Lifespans of Software Engineering Ideas, IEEE Transactions on Big Data, vol.2, Issue 2, 124-137, 2016
- Rama Kaalia, Ashwin Srinivasan, Amit Kumar, Indira Ghosh, ILP-assisted de novo drug design. Machine Learning 103(3): 309-341 (2016)

15. R.R. Swain, T. Dash, P.M. Khilar, An Effective Graph-theoretic approach towards Simultaneous Detection of Fault(s) and Cut(s) in Wireless Sensor Networks, International Journal of Communication Systems, 2016; Publisher: John Wiley & Sons. [SCI I.F.: 1.099] (accepted; Dec 11, 2016)

11. Conferences attended/Papers presented: 48

1. Trupil Limbasiya and Debasis Das, "Secure Message Transmission Algorithm for Vehicle to Vehicle (V2V) Communication", IEEE TENCON 2016, Technologies for Smart Nation, Nanyang Technological University, Singapore, 22-25 November, 2016, pp. 1-6.
2. Debasis Das and Amrithesh Kumar, "Algorithm for Secure Cloud Computing Is Based On Homomorphic Encryption And Multi-Party Computation", 12th International Conference on Innovations in Information Technology (IIT), Al Ain, Abu Dhabi, United Arab Emirates, 28-30 November, 2016, pp. 1-6.
3. Pushkar Sharma, Usha Kiran Singh, T. Virajita Sharma, and Debasis Das, "Algorithm for Prediction of Links using Sentiment Analysis in Social Networks", ACM 7th International Conference on Computing, Communications and Networking Technologies (ICCCNT), University of North Texas, USA, July 5-8, 2016, Vol. 29, pp. 1-6.
4. Amrithesh Kumar and Debasis Das, "Efficient Algorithm for Routing in Dynamic Wireless Networks", ACM 7th International Conference on Computing, Communications and Networking Technologies (ICCCNT), University of North Texas, USA, July 5-8, 2016, Vol. 28, pp. 1-6.
5. Akshita Bhandari, Ashutosh Gupta and Debasis Das, "A framework for Data Security and Storage in Cloud Computing", 2016 International Conference on Computational Techniques in Information and Communication Technologies (ICCTICT)-2016, IPU, New Delhi, India, pp. 1-8.
6. Sreyash Ratna Tripathi, Shreya Mahabala Alva and Debasis Das, "Algorithm for Leader Node Selection in Vehicular Adhoc Networks (VANETs) at Road Intersection", The 8th International Conference on Future Computer and Communication (ICFCC 2016), Hong Kong, April 28-30, 2016.
7. Akshita Bhandari, Ashutosh Gupta and Debasis Das, "Secure Algorithm for Cloud Computing and Its Applications, IEEE Confluence 2016, Amity University, New Delhi, India, pp. 1-6.
8. T. Virajita Sharma, Usha Kiran Singh, and Debasis Das, "Connected Dominating Set Based Node Centrality in Wireless Networks", The 8th International Conference on Future Computer and Communication (ICFCC 2016), Hong Kong, April 28-30, 2016.
9. Sheekesh S, Abhimanyu Zala, Keerthi Chavan G and Neena Goveas, Customizable Holter monitor using off-the-shelf components, ICACCI (2016)
10. TSRK Prasad, K Sathyanarayanan, Sukriti Tiwari, Neena Goveas & B. M. Deshpande, t-CSA: A fast and flexible CSA Implementation, COMSNETS 2016
11. TSRK Prasad, Dhruv Shekhawat, Sukanto Guha, Neena Goveas and Bharat Deshpande, (2016) Analysis of Impartial Quality Measurements on Indian Broadband Connections, 22nd National Conference on Communications (NCC 2016), 4 – 7 March, 2016, IIT Guwahati, India
12. Mit Shah, Dhruvesh Parikh & Bharat Deshpande, (2016) Movie Recommendation System Employing Latent Graph Features in Extremely Randomized Trees, 2nd International Conference on Information and Communication Technology for Competitive Strategies, 4-5 March 2016, India
13. Kunal Banerjee, Soumyadip Banerjee, Santonu Sarkar, Data-race detection: the missing piece for an end-to-end semantic equivalence checker for parallelizing transformations of array-intensive programs, 3rd ACM SIGPLAN International Workshop on Libraries, Languages, and Compilers for Array Programming, 2016
14. Santonu Sarkar, Developer Productivity in HPC Application Development: An Overview of Recent Techniques, 29-30, ACM Workshop on Software Engineering Methods for Parallel and High Performance Applications, 2016
15. N Tiwari, U Bellur, S Sarkar, M Indrawan, Identification of critical parameters for MapReduce energy efficiency using statistical Design of Experiments, The Twelfth Workshop on High-Performance, Power-Aware Computing (HPPAC'16), 2016
16. M Chadha, A. Srivastava, S Sarkar, Unified Power and Energy Measurement API for HPC Co-processors, 35th IEEE Intl. Performance Computing and Communications Conference (IPCCC) 2016
17. Nidhi Tiwari, Umesh Bellur, Santonu Sarkar and Maria Indrawan, CPU Frequency Tuning to Improve Energy Efficiency of MapReduce Systems, The 22nd IEEE International Conference on Parallel and Distributed Systems (ICPADS) 2016
18. Ashu Sharma and S.K. Sahay, An investigation of the classifiers to detect android malicious apps., Accepted in International Congress on Information and Communication Technology (ICICT 2016), Proceeding will be published in Springer, Advances in Intelligent Systems and Computing, 2016.

19. R.K. Roul and S.K. Sahay, Importance of ML-ELM feature space in semi-supervised Clustering. Accepted in 9th International Conference on Machine Learning and Computing (ICMLC 2017), Proceedings series by ACM and will be archived in the ACM Digital Library.
20. Aruna Govada, Varsha S. Thomas, Ipsita Samal, S. K. Sahay, Distributed multi-class rule based classification using RIPPER. Accepted in 16th IEEE International Conference on Computer and Information Technology (CIT, 2016). Proceedings will be published by IEEE Computer Society Press proceedings published by IEEE Computer Society Press.
21. R.K. Roul and S.K. Sahay, Semi-supervised Clustering using Seeded-k Means in the Feature Space of ELM. Accepted in 13th International IEEE India Conference (INDICON, 2016). Proceedings will be published in IEEE Xplore, 2016.
22. R.K. Roul and S.K. Sahay, Combining Apriori Approach with Support Based Count Technique to Cluster the Web Documents. Accepted in ICCIDM, proceedings will be published in Springer Advances in Intelligent Systems and Computing, 2016. 1
23. Aruna Govada and S.K. Sahay, Covariance estimation for Vertically partitioned data in a Distributed environment. Springer, Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing, Studies in Computational Intelligence, Vol. 653, pp 151-164, 2016. Proceedings, 17th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD), 2016.
24. S.K. Sahay and Ashu Sharma, Grouping the executables to detect malwares with high accuracy. Elsevier, Procedia Computer Science, Vol. 78, pp. 667 - 674, 2016.
25. Ashu Sharma, S.K. Sahay, Abhishek Kumar, Improving the detection accuracy of unknown malware by partitioning the executables in groups. Springer, Advances in Intelligent System and Computing, p. 421, 2016; Proceedings 9th ICACCT.
26. R.K. Roul and S.K. Sahay, K-means and Wordnet based Feature Selection Combine with Extreme Learning Machines for Text Classification. Springer, LNCS, Distributed Computing and Internet Technology, Vol. 9581, p. 103, Proceedings 12th ICDCIT, 2016.
27. Shivam Verma, Rohit Omanwar, Sreejith V, Meera GS, "A Smartphone Based Indoor Navigation System" Accepted for publication in Proceedings of 28th International Conference on Microelectronics IEEE-ICM 2016, 17-20 Dec. 2016, Cairo, Egypt (Indexed in Scimago, Hindex:13)
28. Yash Gogia, Eeja Singh, Shreyash Mohatta, Sreejith V, "Multi-modal Affect Detection for learning applications", Accepted for publication in Proceedings of Technologies for Smart Nation IEEE TENCON 22 - 25 Nov 2016, Singapore
29. Meera G Sujatha, Vaibhav Gupta, Priya S Sekhar, Sreejith V, K.R. Anupama. "An Efficient Mobile Sink Routing in Wireless Sensor Network Using Dynamic Steiner Tree", Accepted for publication in Proceedings of 10th IEEE International Conference on Advanced Networks and Telecommunications Systems -IEEE ANTS 6-9 Nov 2016, BANGALORE
30. Sreejith V, Suriyadeepan R, Anupama KR and Lucy J Gudino. "DS-MMAC: Dynamic Schedule based MAC for Mobile Wireless Sensor Network," 31st ACM Symposium on Applied Computing (SAC) Pisa-Italy - 2016 April 4 -8 2016
31. Sreejith V.; Prateek Khandelwal.; K.R. Anupama.; Lucy J Gudino. "Mobility vector based neighbour selection in mobile WSN with multichannel MAC," 8th IEEE COMSNETS 2016 - Poster Track, Bangalore, India. Jan-2016
32. R.K.Roul and J.K.Sahoo, Multilayer Extreme learning machine in the domain of Semi-supervised clustering, 9th ACIIDS-2016, Japan, (accepted for publication in LNAI, as well as in Studies in Computational Intelligence (SCI) of Springer)
33. R.K.Roul and Pranav Rai, A New Feature selection technique combined with ELM feature space for text classification, 13th ICON-2016 (accepted for publication in ACL Anthology)
34. R.K.Roul, A. Srivastav and A.Bhalla, Commonality-Rarity Score Computation, 8th FIRE-2016, pages 37-41
35. R.K.Roul and J.K.Sahoo, Classification of Research Articles Hierarchically: A New Technique, 3rd ICCIDM-2016, Advances in Intelligent Systems and Computing, Springer
36. Soumyadip Bandyopadhyay, Kunal Banerjee, Implementing an Efficient Path Based Equivalence Checker for Parallel Programs. SEM4HPC@HPDC 2016, Page 3-10
37. Kunal Banerjee, Soumyadip Banerjee, Santonu Sarkar, Data-race detection: the missing piece for an end-to-end semantic equivalence checker for parallelizing transformations of array-intensive programs. ARRAY@PLDI 2016: Page 1-8

38. Soumyadip Bandyopadhyay, Dipankar Sarkar, Chittaranjan A. Mandal, An efficient path based equivalence checking for Petri net based models of programs. ISEC 2016: 70-79
39. Biju Raveendran, Shubhangi K Gawali, DPS: A Dynamic Procrastination Scheduler for Multi-core/Multi-processor Hard Real Time Systems, in Proceedings of the 3rd IEEE International Conference on Control, Decision and Information Technologies (CoDIT'16), April 2016, Malta.
40. Biju Raveendran, Parag Panda, Geeta Patil, "A Survey on Replacement Strategies in Cache Memory for Embedded Systems", 2016 IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (DISCOVER 2016), 13 – 14 August 2016
41. Deepika Vatsa, Sumeet Agarwal, Ashwin Srinivasan, Learning transition models of biological regulatory and signaling networks from noisy data. The Third ACM IKDD **CODS** 2016: 9:1-9:6
42. Sarmimala Saikia, Lovekesh Vig, Ashwin Srinivasan, Gautam Shroff, Puneet Agarwal, Richa Rawat, Neuro-Symbolic EDA-Based Optimization Using ILP-Enhanced DBNs. CoCo@NIPS 2016
43. Ashwin Srinivasan, Gautam Shroff, Lovekesh Vig, Sarmimala Saikia, Puneet Agarwal, Generation of Near-Optimal Solutions Using ILP-Guided Sampling. CoRR abs/1608.01093 (2016)
44. Mahadev A Gawas, Lucy J Gudino, KR Anupama, Cross layered adaptive cooperative routing mode in mobile ad hoc networks, 22nd Asia Pacific Conference on Communications, APCC 2016, Jakarta Indonesia, pp. 462-469
45. KR Anupama, LJ Gudino, Mahadev Gawas, Cross layer adaptive congestion control for best-effort traffic of IEEE 802.11 e in mobile ad hoc networks, 10th International Symposium on Communication Systems, Networks and Digital Signal Processing, CSNDSP 2016, Prague, Czech Republic, pp. 1-6
46. Mahadev Gawas, LJ Gudino, KR Anupama, Cross layer multi QoS metric routing for multimedia traffic in 802.11 E over MANETs, The Eighth International Conference on Ubiquitous and Future Networks, Vienna, Austria, ICUFN 2016, pp. 582-587
47. Mahadev Gawas, LJ Gudino, KR Anupama, Adaptive Cross Layered Cooperative Routing Model in Mobile Ad Hoc Networks, European Conference on Networks and Communications (EUCNC) 2016. Greece, Athens.
48. T. Nayak, T. Dash, D.C. Rao, P.K. Sahu, Evolutionary Neural Networks versus Adaptive Resonance Theory Net for Breast Cancer Diagnosis," In Proc: International Conference on Informatics and Analytics (ICIA'16), Pondicherry, India (August 25-26, 2016), Publisher: ACM.

Posters: NIL**Patents:**

1. Gagan Mohan Goel, Geetika Goel, Rajeshwari Ganesan, Santonu Sarkar, METHOD AND SYSTEM FOR MONITORING HEALTH OF A VIRTUAL ENVIRONMENT, Patent No. 20160077948, US, Publishing Date 17/03/2016
2. Nidhi Tiwari, Santonu Sarkar, METHOD FOR IMPROVING ENERGY EFFICIENCY OF MAP-REDUCE SYSTEM AND APPARATUS THEREOF, Patent No. 20160078069, US, Publishing Date 17/03/2016

D. Books Published/Edited during the year:**Book Chapters**

1. S. Sarkar, INTERNET OF THINGS— ROBUSTNESS AND RELIABILITY, pp. 201-2016, Internet of Things: Principles and Paradigms, Elsevier, 2016
2. Debasis Das, Amritesh Kumar and Subhasis Das, Effective and Efficient Routing Protocol for Multi-hop Wireless Networks, Lambert Academic Publishing, Germany, June, 2016.

E. Conferences, seminars & workshops conducted

1. Microsoft Azure Discovery Workshop held on 28th and 29th September 2016
2. Workshop conducted on High Performance Computing on Monday 14th Nov 2016

F. Invited Talks given by BITS faculty: Nil.**G. Invited talks arranged in the department:**

1. Probabilistic Annotation Framework: Knowledge Assembly at Scale with Semantic and Probabilistic Techniques by Dr. Larisa Soldatova, Brunel University, London, 9th March 2016
2. Computing Exponentially Faster: Implementing a Nondeterministic Universal Turing Machine Using DNA by Professor Ross King, Department of Computer Science, University of Manchester, 8th March 2016
3. What makes Alpha-Go, go? by Dr. Raghav Singh, IBM Research, Mew Delhi, 27th April 2016

4. Logical structure in social algorithms by Prof. R Ramanujam, IMSc Chennai, 15th&16th November 2016
5. Parallel Computing with GPUs in Real Time Diagnostic Medical Ultrasound Imaging by Ismayil Guracar, Siemens USA. 21st Nov. 2016
6. Problems and Results on Uniform Hypergraphs by Dr. Saswata Shannigrahi, IIIT Delhi, 30th Nov. 2016.

H. Awards and recognitions won by faculty and students

- Early Career Research Award from Science & Engineering Research Board (SERB), Department of Science & Technology (DST), Govt. of India, New Delhi, India, March, 2016.
- Prof. Bharat Deshpande, Invited by Microsoft Research to attend Microsoft Annual Summit at Seattle, USA.

I. Faculty Development, International Collaboration & Industry Immersion

J. Significant new equipments/experimental facility added during the year:

Research lab with the following facilities was setup:

K. Departmental association/club activities:

Center of Technical Education (CTE) which meet the demands of students to be trained in specific technologies. Around 5 courses were offered in each semester. Over 300 students registered for these courses.

B2.10. 5 Department: Economics

Number of faculty members (as on 31 December 2016): **09**

Senior Professors, Professors	None
Associate Professors	1
Assistant Professors	6
Lecturers	1
Guest Faculty	1

Head of the Department: Dr. Aswini Kumar Mishra

Contact details: 0832-2580-258

aswini@goa.bits-pilani.ac.in

Number of PhD Scholars: 15

Ph.D. Thesis Submitted during the year: One

A. Sponsored Research activities:

(i) Ongoing projects: 0

(ii) Projects completed this year

Project Title: Mining Closure, Economic Disruption & Local Level Sustainability: A Case Study of Goa, India

Principal Investigator- Dr. Aswini Kumar Mishra; Co PI- Dr. Debasis Patnaik

Funding Agency- ICSSR, New Delhi

Funding Amount- Rs.9 lakhs

Project Duration- 2 years

B.1. Publications in Journals (No. 21)

1. A.K.Mishra and Viral M Paramar 'Changing Contours of Income Stratification and Decomposition of Income Inequality: Evidence from Recent Longitudinal Survey in India' in Journal of Quantitative Economics, the official journal of The Indian Econometric Society (TIES) published by Springer International Publishing (First Online: 09 September 2016)
2. A. K. Mishra, G. Rao, A Monga and B. Vishwanath 'Assessing Competitiveness in Emerging Asian Economies: Role of Governance and Infrastructure and Lessons for India', in Emerging Economy Studies (A Sage Publication) Vol.2, No.1, pp.72-90 (May 2016).

3. A.K. Mishra, B. Vishwanath, M. Sahoo & A. Kar "Make in India: Challenges in Bringing a Manufacturing Revolution to India" in JBIMS Spectrum (A Journal of Jamnalal Bajaj Institute of Management Studies, University of Mumbai) Vol.IV, No. 1, Page 405-420, ISSN: 2320-7272 (Jan-June 2016).
4. A. K. Mishra, G. Rao and B. Vishwanath 'An Assessment of Competitiveness in Emerging Asian Economies with Special Reference to India', in International Journal of Economic Policy in Emerging Economies (An Inderscience Publication-"C" rank in ABDC Journal List) Vol. 9(2), pp. 127-144(2016).
5. Mridula Goel & Jyoti Tikoria, 'Reflections on business incubation processes in a technical university', Journal of Management and Entrepreneurship 10, Issue 4, 2016.
6. Debdulal Thakur, Shrabani Mukherjee (2016) 'Parent's Choice Function for Ward's School Continuation in Rural India: A Case Study in West Bengal', co-authored with Shrabani Mukherjee, Margin-Journal of Applied Economic Research Vol.10, Issue 1 ,Pp.119-142, SAGE Publication, 2016, UK-India.
7. Debdulal Thakur (2016): 'Budget Advocacy, West Bengal and Us', Mulyayan, Vol3, Issue 8, ISSN-2347-6168, February, 2016,Kolkata.
8. Debasis Patnaik , Rishab Goel (2016):'Impact of Foreign Aid on Growth of African nations', International Organization of Scientific Research (IOSR) Journal of Economics and Finance on Feb 3 2016, Vol-? Issue? Pp.?
9. Debasis Patnaik ,Sanath (2016) :'Data Gaps in Health Sector' ,Artha Vijana (Accepted)
10. Debasis Patnaik ,Akshay Surendra (2016): 'A Hedonic pricing technique to Valuation of Biodiversity in Mining Area in Goa' ,International Journal in Advanced Research in Management and Social Sciences,Vol 5, No.5, May 2016 ISSN:2278-6236; Impact Factor:6.284;. (published in Greenfield A R Publishing House)
11. Debasis Patnaik, Annie Pillai (2016): 'Indian Tax System', Asian Journal of Empirical Economics,.Accepted for publication.
12. Debasis Patnaik, Aman Asija (2016): 'Momentum and Contrarian Effects in Indian Stock Markets: A Behavioral Finance Approach' , Behavioral and Experimental Finance Journal, UK , Accepted for Publication.
13. Debasis Patnaik, Abhijeet Selvi (2016): 'Valuation Testing Post- Mergers and Acquisition scenario in Indian companies',Journal of Commerce and Social science,Vol-?,Issue-? Pp.?
14. Prasad, Ch.V.V.S.N.V, & Prabhdesai, R., : "What drives SME explorative-exploitative alliance formation: An integrated perspective", International Journal of Business Innovation and Research, (Accepted)
15. Prabhdesai, R., Prasad, Ch.V.V.S.N.V, & Boon Chuan Ang . : Exploring Emerging Latin America: Implications for German Companies Using Spain as a Springboard Country", Global Business Review, Vol. 18:5, (Accepted).
16. Rajorshi Sen Gupta (in press): 'Intellectual Property Protection and Technology Management in Outsourcing Projects', International Journal of Manufacturing Technology and Management, Inderscience, Scopus Indexed, 2014 SJR (SCImago Journal Rank) Score: 0.18
17. Rajorshi Sen Gupta (2016): 'Economics of Survival Post Trade Secret Misappropriation: Business Insights from Single Firm Event Study on Lexar Media', Journal of Advanced Research in Law and Economics, Volume VII, Issue 3(17), Summer 2016, pp. 521-534, ASERS Publishing, Scopus Indexed, 2014 SJR (SCImago Journal Rank) Score: 0.2
18. Rajorshi Sen Gupta (2016): 'Make in India initiative and Affordability of Medicines,Mulyayan, 4(2), 2016, ISSN: 2347-6168, pp. 27-31
19. Pawaskar, P., Mridula Goel. (in press). Enhancing the effectiveness of marketing a tourist destination using satisfaction analysis. International Journal of Business and Systems Research (Scopus indexed).
20. Pawaskar, P., Mridula Goel (2016): 'Improving the efficacy of destination marketing strategies: a structural equation model for leisure travel', Indian Journal of Science and Technology, 9(15), pp.1-11(Scopus indexed).
21. AnoopS Kumar, B Kamaiah (2016): Efficiency, on-linearity and Chaos: Evidences from BRICS Foreign Exchange Markets', Theoretical and Applied Economics ,1(606), pp.103-118.

B.2. Books Published/Edited/Chapters in Books during the year(No. 4):

1. Mridula Goel & Yash Sharma (2016):, 'Need and challenges in minimizing wastes in a SME automotive firm: Case study of Janus Auto,'ET cases.
2. Debasis Patnaik,Aalap Tripathy (?):'Developing a Dynamic Framework to Test the Relationships among Stock Market Returns, Production and Consumption in Finite Time -(Using Excel and Neural Networks)',in Prof V V N Somayajulu (Eds),Chapter 13,Himalaya Publishing House.

3. Anoop S Kumar, B kamaiah (2016): 'On dynamical structure of the Indian Banking Sector Indices', Emerging Trends in Banking Sector, edited by R K Mishra et.al., Published by IPE Hyderabad.
4. Somnath Mazumdar and A. Scionti and Anoop S Kumar (2016): 'Adaptive Resource Allocation for Load Balancing in Cloud', Cloud Computing Principles, Systems and Applications, Springer.

B.3. Conference Proceedings (Full-length Paper only) (No.6):

1. Debasis Patnaik, Utkarsh Tiwari (2016): 'Portfolio Optimization through VAR', Published in Conference Volume of Mathematical, Computational Conference on Social Sciences Education (MCCSSE) at Shenzhen, China on 30-31 October 2016.
2. Pawaskar, P., Mridula Goel (2015): 'An Investigation of International and Domestic Tourist Satisfaction with Goa: Implications for Destination Marketing', International Conference on Evidence Based Management, Department of Management, BITS Pilani Rajasthan Campus, Conference Proceedings pg: 196-206.
3. Pinky Pawaskar, Debjyoti Biswas (2012): 'Effectiveness of Advertisements - 30 seconds v/s 15 seconds advertisement', Inclusiveness and Innovation Sustainable Growth Challenges in Emerging Economics, Conference proceedings, pp 604 – 614.
4. Anoop S Kumar, Somnath Mazumdar (2016), Statistical Analysis of a Data Center Resource Usage Patterns: A Case Study (Springer Lecture notes in Computer Science, I3CS 2016, NEHU, Shillong)
5. Anoop S kumar, Somnath Mazumdar (2016) Forecasting HPC Workload Using ARMA Models and SSA (IEEE), ICIT 2016, IIIT Bhubaneswar
6. Anoop S kumar, Somnath Mazumdar (2016): Forecasting Data Center Resource Usage: An Experimental Comparison With Time-Series Methods, Springer, SoCPAR 2016, VIT Vellore

C. Presentations in Seminar/Conference/Workshop (No. 16):

1. A.K. Mishra (with Viral M Parmar) Economic Well-being and Income Inequality in India: A Note on the Rural-Urban Divide at Third Annual India Human Development Survey (IHDS) Data User Conference organised by University of Maryland and NCAER, New Delhi at Neemrana Fort-Palace, Rajasthan, during March 16-18, 2016.
2. Prasad, Ch.V.V.S.N.V (2016): "Information and Communication Technology (ICT) Usage and Secondary School Teachers in India", Singapore 7th International Conference on "Business, Economics, Social Science & Humanities- BESSH-2016" February 25-26, 2016 Singapore.
3. Prabhdesai, R., Prasad, Ch.V.V.S.N.V (2015): The Antecedents of SME Alliance Formation: A Theoretical Approach, Singapore 7th International Conference on "Business, Economics, Social Science & Humanities- BESSH-2016" February 25-26, 2016 Singapore.
4. Debdulal Thakur (2016): 'Rural Development in West Bengal- A PFM perspective', invited lecture as 'resource person' at University Grants Commission (UGC) sponsored National Seminar at Pingla College, Medinipur, West Bengal on 29th & 30th November 2016.
5. Debdulal Thakur (2016): Economic Governance in India: A Brief Overview', invited Lecture at Summer School on Public Policy and Governance organized by Institute for Sustainable Development and Governance (ISDG) and Mahatma Gandhi University (Kerala) held at Bodhigram (Adoor), Kerala, 30th April to 3rd May 2016.
6. Debasis Patnaik (2016): Initiated and Co-ordinated Presentation Sessions on "Organizations of Public Enterprises and Possibilities of Collaboration with Institutes of Higher Learning" by Dr Madhukar Gupta, Additional Secretary, Ministry of Public Enterprises and Heavy Industry and Mrs Kiran Soni, Gupta, Additional Secretary, Ministry of Skill Development and Additional Secretary, Ministry of Youth Affairs and Sports at the behest of the Vice Chancellor Prof V S Rao and our Director Prof Punnekat.
7. Debasis Patnaik (2016): Engaged in Discussion with Mr Dheeraj Raja Ram, Founder, MU SIGMA on 7th Jan 2016 on Developing Course on Business Analytics. Participated and Delivered a Vote of Thanks during his address to students on importance of Data Analytics and How to Develop Entrepreneurial Qualities in TP Lecture Hall at 5.00PM.
8. Debasis Patnaik (2016): Accepted the Invite for Talk in ONGC on eve of Public Sector Day and Delivered Two Talks on 12th April 2016 on (a) Importance of PSUs in the Age of Globalization (b) Techno Economic Challenges in Oil and Gas Sector.
9. Debasis Patnaik (2016): Presented a 'Case Study on Energy Infrastructure for Smart Cities' as part of the Workshop Presentation In The Workshop /Conference on 'Integrating Societal Impact in Research strategy' in the Univ of Copenhagen organized by AESIS as part of Univ Collaboration among Univ of Copenhagen, AARHUS, Finland, Univ of Stockholm, etc. from Nov 15-18 in Copenhagen, Denmark. Also, presented 'Reflections for the New University Model' in Concluding Remarks and Valedictory Presentations on 18th Nov 2016.

10. Anoop S kumar, Md. Zikrullah Khan and B Kamaiah (2016) Co-integration among Emerging European Forex Markets: A Wavelet Approach at 52nd Annual conference of the Indian Econometric Society, IIM Kozhikkode, 4-6 Jan, 2016.
11. Anoop S kumar, S Anandaramo (2016) Causal Nexus between Money Supply and Price level: Evidence for India at 52nd Annual conference of the Indian Econometric Society, IIM Kozhikkode, 4-6 Jan, 2016
12. Anoop S kumar, B Kamaiah (2016) Co-movement among Asian Forex markets: Evidence from Wavelet Methods, 5th International Conference on Applied Econometrics, ICFAI Business school, Hyderabad, July 2016.
13. Anoop S kumar, Somnath Mazumdar (2016) Statistical Analysis of a Data Center Resource Usage Patterns: A Case Study, at I3CS 2016, NEHU Shillong, November 2016
14. Anoop S kumar, Somnath Mazumdar, Forecasting HPC Workload Using ARMA Models and SSA, at ICIT 2016, Bhubaneswar, Dec 2016
15. 15. With Somnath Mazumdar, Forecasting Data Center Resource Usage: An Experimental Comparison with Time-Series Methods, SoCPAR 2016, Vellore Dec 2016
16. 16. Anoop S kumar, B Kamaiah (2016) Adaptive Market Hypothesis: Evidence From Indian Equity Market, 53rd Annual Conference of The Indian Econometric Society, NISER Odisha, Dec 2016

D. Talks/Seminar/Conference Organized by the Department (No.5):

1. BITS Goa Economics Conclave (12th-13th March 2016)
2. Workshop on "Essential workflows of ArcGIS Desktop" on 29th-30th November, 2016. Invited resource person- Mr. Sailesh Chintalapudi from *Esri India Technologies Ltd.*, Bangalore.
3. Invited Talk on "Career Prospects in Data Sciences" by Mr. Sidhartha Shishoo from Genpact on 8th October, 2016.
4. Invited Talk on "Career in Civil Services: Empowering for Change (Perspectives from Within)" by Mrs Nila Mohanan, IAS, Collector, North Goa and Dr Sachin Shinde, IAS, Collector, South Goa.
5. Invited Talk by Mr Ram Mohan Menon on 'GST and Its Implications' on 6th October 2016.

E. Significant new equipment / experimental facility added during the year:

Subscription of new databases like EPWRFITS, INDIASTAT, CMIE, Arc-GIS, etc.

F. Departmental association/club activities (No. 9).

1. Dr. Anoop S Kumar delivered an Invited Lecture at Azim Premji University, Bangalore on Financial Economics, 18 March, 2016.
2. Dr. Debdulal Thakur acted as a Visiting Professor of Economics, Rajalakshmi School of Business, Chennai, June 2016 to October 2016.
3. Dr. Debdulal Thakur Nominated by SRCD (BITS-Pilani) along with Prof. Ranjan Dey to attend the annual Board of Directors meet of the Piramal Foundation held at Baggar, Rajasthan during 2nd and 3rd December 2016.
4. Dr. Debdulal Thakur was Coordinator for the visit by the European Union Delegation to India in BITS-Pilani, K.K. Birla Goa Campus on 23rd September 2016. A delegation of 10 EU delegation from various EU countries visited the campus and interacted with the leadership team of BITS-Pilani.
5. Dr. Debdulal Thakur Chaired a session at University Grants Commission (UGC) sponsored National Seminar at Pingla College, Medinipur, West Bengal on 29th & 30th November 2016.
6. Dr. Debasis Patnaik participated as Special Invitee by the Ministry of Corporate Affairs, Government of India to the Workshop on Corporate Governance conducted by Indian Institute of Corporate Affairs under the Ministry of Corporate Affairs, Government of India on 1st Dec -2nd Dec in Hotel Ibis Styles, Goa. School of Corporate Governance and Public Policy conducted a CG Programme for Officials of Ministry of Corporate Affairs.
7. Dr. Debasis Patnaik participated by Invitation in LSE Summit Sessions on (a) Medical Ethics, (b) Global Finance and (c) Civil Liberties on 29th and 30th Jan 2016 in ICG- Cidade da Goa.
8. Dr. Debasis Patnaik inducted for the Fourth Time [and by Election] into the Executive Committee of the Goa Management Association (GMA) for the year 2016-2018.
9. Dr. Debasis Patnaik inducted into Cochin University's M.A. Economics Question Setters Panel from Dec 2016 onwards.

B2.10.6 Department: EEE and E&I

Department: Electrical, Electronics and Instrumentation Engineering

Number of faculty members (as on 10 January 2017): 24

Senior Professors, Professors	04
Associate Professors	00
Assistant Professors	09
Lecturers	10
Professor Emeritus	01

Head of the Department: Prof. M. K. Deshmukh**Contact details:** mkd@goa.bits-pilani.ac.in**Number of PhD Scholars:** 20(08 Lecturers +08 Full time students + 04 Part Time)**Ph.D. Thesis Submitted during the year:** 03

1. Mr. Pravin Mane, PSRN 334
2. Mr. Sarang Dhongdi, PSRN 376
3. Mrs. Femi R, PSRN 430

Sponsored Research activities: 03

1. "Pilot Project on Implementation of Wireless Sensor Network for Process Monitoring of GAIL's Pipeline", Prof. K.R. Anupama, Principal Investigator, in collaboration with GAIL India (Ltd), Bhiwadi, Rajasthan. (February, 2015- August, 2017).
2. "FPGA Based Fuzzy Logic Pico motor Controller for Laser Beam Pointing Stability Correction", A Amalin Prince, Principal Investigator, DAE-BRNS, July 2015, project duration of two years.
3. "Development of Remotely Configurable Arbitrary Ramp Generator for FMCW Reflectometry, PFRC-BRNS", Dr Neena Goveas, Dr. A. Amalin Prince, 2 Years, **Project Approved** and 28 Lakh.

B. Publications: 09

The faculty of the department published papers in international/national refereed journals during the year.

1. Alope Saha, Dipankar Pal and Mahesh Chandra, "A Benchmarking of DPL based 8b×8b novel wave-pipelined multiplier", Int. J. of Electronics Letters, pp1-14, International, Feb 2016
2. Femi, Anita Agrawal and Shibu Clement, "An FEM Study of the Electrothermal Properties of Microelectrical Contacts for Application in the Design of Arcless Switches", IEEE Transaction on Components, Packaging and Manufacturing Technology, vol.6, No.3, pp. 407- 417, International, Mar 2016.
3. R. Femi, Anita Agrawal and Shibu Clement, "An FEM Study of the Effect of Temperature on the Design of Reliable Micro Electrical Contact", Sensors & Transducers, Vol. 202, Issue 7, pp. 51-58, International, Jul 2016
4. Nishil Talati, Saransh Gupta, Pravin Mane and Shahar Kvatinsky, "Logic Design Within Memristive Memories Using Memristor-Aided IoGIC (MAGIC)", IEEE Transactions on Nanotechnology, vol. 15, no. 4, pp. 635-650, International, Jul 2016
5. Saif N., Aditya S., Prince A.A. and Anita A., 'Feature selection and classification, methodology for the detection of knee-joint disorders', Computer Methods and Programs in Biomedicine, vol.127, pp. 94-104, International, Apr 2016
6. Anupama, K., et al. (2016). Cross layer adaptive congestion control for best-effort traffic of IEEE 802.11 e in mobile ad hoc networks. Communication Systems, Networks and Digital Signal Processing (CSNDSP), 2016 10th International Symposium on, IEEE
7. Pradeep Chavan, L.R. Naik, P.B. Belavi, Geeta Chavan, C.K. Ramesha and R.K. Kotnala, Studies on Electrical and Magnetic Properties of Mg-Substituted Nickel Ferrites, Journal of Electronic Materials DOI: 10.1007/s11664-016-4886-6, 2016
8. A Venkatesan, C K Ramesha and E S Kannan, In situ reduced graphene oxide interlayer for improving electrode performance in ZnO nanorods, J. Phys. D: Appl. Phys. 49 (2016) 245301 (7pp)
9. Nitin Sharma et al. "Multi-objective Subchannel and Power Allocation in Interference-Limited Two Tier OFDMA Femtocells Networks", IEEE Systems Journal, Vol 10(02), 544-555, 2016 (Impactfactor 1.746) Book Chapters

C. Conferences attended/papers presented: 14

1. Avireni Srinivasulu and Dipankar Pal, "CCII+based novel waveform generator with tunable grounded resistor/capacitor", 21st IEEE-Int. Conference on Applied Electronics, to be held in Universit of West Bohemis, Plzen, Czech Republic, IEEE, 06-08 Sep 2016. (Accepted),
2. Shashidhara Mecha Kotian and K. N. Shubhanga, "Design of a Subsynchronous Damping Controller Using a Dynamic Phasor-Based Model of TCSC", IEEE International Conference on Power & Energy Systems: Towards Sustainable Energy (PESTSE 2016), Bangalore, India, Received "M. H. Rashid" Best Paper Award, IEEE, 21-23, Jan 2016.
3. Prince A.A., Siram G., Verma P.K., George P. and Raju D., 'Efficient Implementation of Empirical Mode Decomposition in FPGA Using Xilinx System Generator', 42nd IEEE Industrial Electronics Conference (IEEE IECON 2016), Florence, Italy, IEEE, IEEE, 24-27 Oct 2016 (Accepted)
4. Sreekrishna R.R., Saif N. and Prince A.A., "Real Time Cascaded Moving Average Filter for Detrending of Electroencephalogram Signals", 5th IEEE International Conference on Communication and Signal Processing (ICCSP'16), Chennai, India, IEEE, IEEE, 6 -8 Apr 2016,
5. Saif N., Sreekrishna R.R. and Prince A.A., "Analysis of Knee Joint Vibration Signals Using Ensemble Empirical Mode Decomposition", Elsevier Procedia Computer Science, vol.89, pp. 820-827., Elsevier, Aug 2016
6. S. Nagaraju, V. Rege, L. J. Gudino and C. K. Ramesha, Realistic directional antenna suite for Cooja simulator, Twenty third National Conference on Communications (NCC 2017) IIT Madras, Chennai (submitted)
7. Vikas V. Khairnar, C. K. Ramesha and Lucy J. Gudino, A Reconfigurable Microstrip Cross Parasitic Patch Antenna With Two-dimensional Beam Scanning, Capability IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), Bengaluru, 2016
8. Rajalekshmi Kishore, Ramesha C K, George Joseph and Eshaan Sangodkar, - Waveform and Energy Based Dual Stage Sensing Technique for Cognitive Radio using RTL-SDR, 2016 Annual IEEE India Conference (INDICON), IISC Bangalore, Dec. 16th -18th , 2016, pp. 1-6.
9. Rajalekshmi Kishore, C.K. Ramesha, K.R. Anupama,- Bayesian Detector Based Superior Selective Reporting6, Mechanism for Cooperative Spectrum Sensing in Cognitive Radio Networks, Procedia Computer Science, 6th International Conference on Advances in computing & Communication (ICACC), Kochi, Sep. th-8th, Vol 93,2016, pp. 207-216, ISSN 1877-0509, <http://dx.doi.org/10.1016/j.procs.2016.07.202>.
10. R. Kishore, Ramesha C K and T. Sawant, - Superior Selective Reporting mechanism for cooperative spectrum sensing in cognitive radio networks, 2016 International Conference on Wireless Communications, ,Chennai, March 23 Signal Processing and Networking (WiSPNET)th ,2016, pp. 426-431.doi: 10.1109/WiSPNET.2016.7566169.nd -25
11. Paavni Shukla, Pravin M Singru and Narayan Manjrekar," A Study of H infinity and H2 synthesis for Active Vibration Control", accepted for publication in 4th International Conference on Advances in Control and Optimization of Dynamical Systems to be held in NIT Trichy on Feb 1-5, 2016 , published by Science direct (<http://www.sciencedirect.com/science/article/pii/S2405896316301252>)
12. Praveen G. B. and Anita Agrawal, "Muti-stage Classification and segmentation of brain tumor", IEEE 3rd International conference on computing,for sustainable global development, INDIACOM, pp1628-1632, 2016 Delhi, India
13. Ruma Ghosh, Sumita Santra, M. K. Deshmukh, Prasanta Kumar Guha, "Highly Efficient H₂ Sensors Using Reduced Graphene Oxide-Pt Composites at Room Temperature", International Conference on Nanomaterials and Nanotechnology – 2016 at VIT, Vellore.
14. C. Balakrishna Moorthy, M. K. Deshmukh, "Assessment of Wind Power Potential in a Region of Goa, India", 2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES) at Trivandrum, Kerala

D. Books Published/Edited during the year: book chapter published

Nitin Sharma, A. Anpalagan and M. Obaidat (Mohammad Obaidat, Petros Nicopolitidis, Faouzi Zarai Editors of the book) "Modeling and Simulation of Computer Networks and Systems" **Elsevier's publication.**

E. Patents:**F. Conferences, seminars & workshops conducted:**

Workshop on Cadence,Mentorgraphics& Synopsys", 06-May-2015 to 20- May- 2016, DSTE, IEEE- Bombay Chapter, DST.

G. Invited Talks given by BITS faculty:

1. Speaker: **Prof. M. K. Deshmukh,**

Topic: Enabling Energy Enterprise for Sustainable Development

Date: 17th Oct 2016

Location: Short Term Training Programme “Energy Options for Sustainable Future (EOSF-2016)” at Department of Technical Education, Govt. of Goa, Porvorim, Goa

2. Speaker: **Prof. M. K. Deshmukh,**

Topic: Design development of roof Top SPV system

Date: 13th April 2016

Location: 2 days Seminar on “Power Electronics – A key technology for Renewable Energy system” at Rajiv Gandhi College of Engineering & Research, Nagpur

H. Invited talks arranged in the department: None**I. “Awards and recognitions won by faculty and students:**

Dr. Shashidhara Mecha Kotian-POSOCO Power System Award (PPSA) 2016.

J. Faculty Development, International Collaboration & Industry Immersion:

Name of the faculty : A Amalin Prince

PSRN : G0107

Duration : 12-06-2016 to 25-06-2016

Organization : Institute for Plasma Research (IPR), Gandhinagar, Department of Atomic Energy

Broad area of work done: Study of Frequency Modulated Continuous Wave Reflectometer for Plasma Density Profile Evaluation

K. Significant new equipments/experimental facility added during the year:

1. NI SDR USRP 2920 (4 nos) Bundle with accessories.
2. OctoClock 8 Channel Clock Distribution System (10 MHz Ref and PPS) - Ettus Research
3. Matlab Campus License
4. Image Processing Module for the FPGA (AES-FMC-HDMI-CAM-G)
5. Image Processing Module for the FPGA (AES-CAM-ON-P1300C-G)
6. SoC FPGA, Model (EK-Z7-ZC706-G)
7. 7-inch ZED Touch Display kit & Accessories (AES-ALI3-ZED-G)
8. MEMS+ Library for Cadence
9. Homer Pro (software 10 users perpetual license)
10. Meteodyn WT Basic (1 Yr Academic License)
11. windsim 8 (50 users perpetual)
12. KEIL MDK-Plus Edition Node Locked Licenses -10 Numbers
13. KEIL MCBSTM32F400 Evaluation board - 6 Numbers
14. Tektronix DSO TBS1072B-EDU (14 Nos)
15. AFG3022B (25MHz, 2 Channel) Tektronix, (8 Nos)
16. Aplab Dual Power Supply LQ6324T,

L. Departmental association/club activities/workshop attended:**B2.10.7 Department: Humanities and Social Sciences**

Number of faculty members (as on 31 December 2016): 15

Professor	1
Associate Professors	3

Assistant Professors	7
Lecturers	2
Visiting Associate Professor	1
Visiting Assistant Professor)	1

Head of the Department: Meenakshi Raman

Contact details(email): mraman@goa.bits-pilani.ac.in

Number of PhD Scholars: 16 (lecturers 3 (1 WILP) + Full time 6 + Part time 8)

Ph.D. Thesis Submitted during the year: 1

A. Sponsored Research activities:

Total number of Sponsored Projects in the department: 02 Details are given below.

(i) Projects Sanctioned this year : 1

Principal Investigator : DR. R P. Pradhan

Funding Agency : ICSSR

Amount : 15 Lacs

Title : Agenda 2020: India's Maritime Infrastructure, Governance & Naval Diplomacy

(ii) Ongoing Projects : 1

Cross Cultural Communication : An empirical analysis of Cross Cultural Communication Variables in Indian Industries and Academia	Major UGC Project	Basavadatta Mitra	Rs. 6,50,000/-	2013-2015
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(ii) Projects completed this year:

Consultancy Project

Topic : Technical Writing Training Programme

PI / Coordinator : Meenakshi Raman

Instructors: Shalini Upadhyay, Layla Mascarenhas, Meenakshi Raman

Agency : CIPLA Biotec, Verna, Goa

Duration : 9 weeks (12 July 2016 – 5 October 2016)

Amount : 6.55 Lacs

B. Publications:

International Journals (13)

S.No.	Faculty	Title	Journal Details
1	Alex, Rayson K	A akam do Quadro Cinemático: Questões Emergentes nos Estudos Indianos em Ecocinema / The akam of the Cinematic Frame: Raising Questions on Indian Ecocinema Studies	<i>Animalia Vegetalia Mineralia</i> 3.6 (2016): 25-30. (ISSN 2183-265X)
2	Bhattacharya Amitendu	Parricide	Muse India (Vol. 68, July-August 2016 Issue)
3	Bhattacharya Amitendu	Two Poems of Hafeez. (Accepted)	Jalandhari <i>IUP Journal of English Studies</i>
4	Datta Nilak	Paradise Discourse and the Caribbean Tourist Gaze: Angelique Nixon's Resisting Paradise (Accepted)	<i>Callaloo</i> . The Johns Hopkins UP
5	Cherualath Reena.	Need for a shift from philanthropic to humanistic approach to Corporate Social Responsibility: With special reference to the New Act 2013 of CSR in India(Accepted)	<i>Annals of Public and Cooperative Economics</i> , John Wiley & Sons (Indexed in SCOPUS and Thomson Reuters)

S.No.	Faculty	Title	Journal Details
6	Cheruvath Reena.	Do attending classes help foster human values in college students? (Accepted)	<i>Active Learning in Higher Education</i> , Sage Publication. Indexed in Thomson Reuters, Scopus)
7	Cheruvath Reena.	Engineering, technology and science disciplines and gender difference: A case study among Indian students" (Accepted)	European Journal of Engineering Education, Routledge publication (Indexed in Thomson Reuters, Scopus)
8	George, Anoop	The Good Sense of the Modern: Revisiting Heidegger's Social Ontology	Proceedings of The Asian Conference on Ethics, Religion & Philosophy 2016, pp. 119-129. (ISSN: 2187-476X).
9	R. P. Pradhan	Factory Asia and East Asian Economic Conundrum: Does India Fit In?	World Focus, Vol. XXXVII, No.3, March 2016. www.worldfocus.in
10	RP Pradhan; Jajati K. Pattnaik	Chabahar to Sagarmala: Making Sense of India's External & Hinterland Sea Lane Prospects	World Focus (Accepted for the forthcoming volume)
11	Raman Meenakshi and Anjani Srikanth Koka	Developing Soft Skills in Engineering Students for better Employability in IT Industry : Academicians' Perspective"	International Journal of Language, Literature and Humanities, ISSN 2321-7065, Vol IV, Issue III, March 2016.Pp. 580-594
12	Upadhyay, S and Upadhyay, N.	A Multi-Criteria Decision Framework to Measure Spiritual Intelligence of University Teachers.	Procedia Computer Science 91, 591-598
13	Upadhyay, S and Upadhyay, N.	Investigating foreign language learning: examining anxiety associated with English language acquisition in the Asian ESL. (accepted)	The Asian EFL Journal

National Journals (8)

Sr. No.	Faculty	Title	Journal details
1	Bhattacharya Amitendu	Five Poems by Sukanta Bhattacharya (Accepted for publication)	Journal of the School of Language, Literature and Culture Studies , Jawaharlal Nehru University, New Delhi
2	Bhattacharya Amitendu	Two Poems of Hafeez. (Accepted)	Jalandhari IUP Journal of English Studies
3	Datta Nilak	The Literature of Resistance: Review of Dalit Literatures in India (Accepted)	The IACLALS Journal. ISSN 2395-1206.
4	Cheruvath Reena	Analysis of the issue of engineering and technological students' class absenteeism- A case study.	The Indian Journal of Technical Education, 38(2): 77-85.
5	Geetha, K.A.	Not a Literature of Lament : An Analysis of Emerging themes and Trends in Tamil Dalit Literature	IUP Journal of English Studies Vol 10 : 3
6	Geetha, K.A. & Priyanshu Gupta	Cultural in Context – Divergences in Rural and Urban Consumer Behavior	International Journal of Communication Vol 25 : 1-2 (2015) 77-95
7	George, Anoop	Modernity, Technology And Reductionism: Heidegger And The Disenchantment Of The Late Moderns. (Accepted for publication)	Indian Philosophical Quarterly, Vol. 41, No. 1-4, (pp. 149-162), October 2015. (ISSN – 0376 – 415 X)
8	Jajati K. Pattnaik and R. P. Pradhan	Chabahar: In the Grand Chess Board of India's Geo Strategic Calculus	Mainstream, VOL. LIV, No 31, New Delhi July 23, 2016 http://www.mainstreamweekly.net/article6553.html

C. Books Published/Edited during the year (3)

S.No.	Faculty	Title	Book details
1	Alex, Rayson & S.	<i>Ecodocumentaries: Critical Essays</i>	London and New York: Palgrave Macmillan; ISBN 978-1-137-56224-

	Susan Deborah (Eds.)		1eBook ISBN978-1-137-56224-1
2	Cheruvath Reena, Rayson K. Alex, GyanPrakash & Susan Deobera (Eds.)	Eco-Cultural Ethics	Lexington Press, New York. (In Press)
3	Raman Meenakshi and Sangeeta Sharma	Technical Communication (JNTU Edition)	Oxford University press, New Delhi

Chapters in Books (7)

Sl.No.	Faculty	Title of the chapter	Book details	ISBN
1	Alex, Rayson K., S. Susan Deborah and K.S. Samuel Moses	Eco-exoticism in Thorny Land: Invasion of Cheemakaruvell.	Ecodocumentaries: Critical Essays .London and New York: Palgrave Macmillan. Pp. 189-202.	ISBN 978-1-137-56224-1 eBook ISBN 978-1-137-56224-1
2	Alex, Rayson K. and S. Susan Deborah.	Introduction: The Ethics of Relationships in Social Documentaries.	Ecodocumentaries: Critical Essays. London and New York: Palgrave Macmillan. Pp.01-08	ISBN 978-1-137-56224-1 eBook ISBN 978-1-137-56224-1
3	Alex, Rayson K.	tinai-Documentation as Ecocultural Ethnography: My Experience with Mudugar	Ecodocumentaries: Critical Essays. London and New York: Palgrave Macmillan. Pp.188-203	ISBN 978-1-137-56224-1 eBook ISBN 978-1-137-56224-1
4	Cheruvath Reena	Teaching ethics to engineering students in India: Issues and challenges,	Sa Contemporary Ethical Issues in Engineering Ed. Satya Sundar Sethy, IGI Global Publishing, USA. pp.121-132	ISBN: 9781466681309
5	Geetha, K.A.	Shifting Terrains : The Fashioning of the Tamil Dalit Subject	ReReadings on Dalit Identity : History, Literature and Religion Ed. Swaraj Basu Orient Blackswan: Hyderabad, pp.261-279	ISBN 978-81-250-6090-1
6	Kenneth Bo Nielson and Solano Da Silva	Golden or Green? Growth Infrastructures and Resistance in Goa	TeTereza Kuldova & Mathew Varghese, Urban Utopias: Excess and Expulsion in Neoliberal South Asia, Palgrave Macmillan	Forthcoming (accepted for publication)
7	Pradhan, R.P.	India's Foreign Policy Framework and Indo-Pak Relations	" , An Outline of Indian Foreign Policy And Relations, (eds) Biswanath Chakraborty & Debashish Nandy, January 2016, Mitram, Kolkata.	ISBN No: 978-93-80036-84-7 https://www.academia.edu/24394152/Indias_Foreign_Policy_Framework_and_Indo-Pak_Relations

D. Conferences attended/papers presented: (India)**Conferences Abroad (14)**

Sl.No	Faculty	Title of the Paper	Details	Dates
1	Amitendu Bhattacharya	Universities at the Crossroads and the Humanities at a Dead-End: What is the Way Forward?	17th Triennial Conference of the Association for Commonwealth Literature and Language Studies held at Stellenbosch University, South Africa	10-15 July 2016
2	Amitendu	A Poet of/for India: The	ASIAN TRANSLATION TRADITIONS	26-29

Sl.No	Faculty	Title of the Paper	Details	Dates
	Bhattacharya	Rediscovery of Kabir through the Translations by Rabindranath Tagore and Arvind Krishna Mehrotra	CONFERENCE 7 organized by the Monash Asia Institute and the School of Languages, Literatures, Cultures and Linguistics at Monash University Melbourne, in partnership with the Universiti Kebangsaan Malaysia, and hosted at the Monash University Malaysia Campus in Kuala Lumpur	September 2016
3	Anoop George	The Good Sense of the Modern: Revisiting Heidegger's Social Ontology	International Conference on Ethics, Religion and Philosophy, International Academic Forum, The Art Center, Kobe, Japan	31 March-03 April 2016
4	Anoop George	Engaging With Modernity: Revisiting The Ontology Of The Self As A Meaning Giving Being	International Conference for Social Sciences and Humanities, International Journal of Arts and Sciences, University of London, UK	08-11 November 2016
5	Meenakshi Raman	Importance of Effective Communication in Healthcare Settings : Students' Perspectives.	81 st Annual International Conference of ABC (Association of Business Communication). Albuquerque, New Mexico, USA	19-22 October 2016
6	Rayson K Alex	"Nature-culture-sacred continuum in the ecodocumentary, Have you Seen the Arana?"	International Conference on "Transmediating Culture(s)?" Department of English, University of Szczecin, Poland	17-19 November 2016
7	Reena Cheruvalath	Meta-moral cognition and social relationship: A theoretical perspective	International Conference for Social Sciences and Humanities. International Journal of Arts and Sciences. University of London, UK	8-11 November 2016
8	Reena Cheruvalath	Internet Neutrality, Social Justice And Ethics: A Kantian Perspective	The Asian Conference on Ethics, Religion & Philosophy. The International Academic Forum. The Art Centre of Kobe, Japan.	31 March-03 April, 2016
9	R P Pradhan	TPP & Factory Asia: Case of India Trade Creation or Trade Diversion?	East Asian Economic Association (EAEA) Bandung, Indonesia	5-6 November 2016.
10	Shalini Upadhyay and Nitin Upadhyay	A Multi-Criteria Decision Framework to Measure Spiritual Intelligence of University Teachers	Asan, South Korea ITQM and Hoseo University, South Korea	16-18 August 2016
11	Shalini Upadhyay and Ranjit Rodrigues	"Investigating Foreign Language Learning: Examining Anxiety Associated with English Language Acquisition in the Asian ESL Context"	TESOL and University of Mataram in Lombok, Indonesia.	August 11-13, 2016
12	Solano Jose Da Silva	Urban Commons and Commoning (attended)	Urban Commons and Commoning' Cape Town, South Africa	30 May- 03 June 2016
13	Solano Jose Da Silve, Palmer, Henrietta & Low, Iain	Urban commons in the Neoliberal Global Order: Commoning as Counteraction	17th N-AERUS Conference: Governing, Planning and Managing the City in an Uncertain World. Comparative Perspectives on Everyday Practices at the School of Public Administration (SPA) at University of Gothenburg, Gothenburg, Sweden.	17-19 November 2016
14	William Henry Spates	Contact Zones: Chios, the Mahonesti, and the Formation of English Long-Distance Trading Companies in Richard Hakluyt's Diverse Voyages and Principal Navigations"	10 th IDEA Conference, Bogazici University, Istanbul, Turkey.	April 2016)

Conferences in India (10)

Sl. No.	Faculty	Title of the Paper	Details of conference	Dates
1	Amitendu Bhattacharya	The 'Fictions' of Fatima Bhutto and Tamsila Ao: Epistemologies of Violence	International Seminar on "Politics, History and Fiction in South Asia with Special Focus on Pakistan and North	25-27 February 2016

			East India" , Department of English, Gauhati University	
2	Amitendu Bhattacharya	Gastronomy and the Making of the Bengali Bhadrakol (in absentia)	International Conference on "The Culture of Food: Literature and Society" organized by the Departments of English and Travel & Tourism, M.E.S. College of Arts and Commerce, Goa	25-27 February 2016
3	Amitendu Bhattacharya	Food, Hindu Bourgeoisie, and the Cosmopolitan Imagination in Colonial Bengal	XIX International Conference on "Materialities: Objects, Matter, Things" jointly organized by the Forum on Contemporary Theory, Vadodara and the Department of English, Doon University, Dehradun	18-21 December 2016
4	Amitendu Bhattacharya	Tagore and the Global Environmental Crisis (In absentia)	International Conference on "Re-Thinking Environment: Literature, Ethics, Praxis" organized by the Postgraduate Department of English, Berhampur University, Odisha	28-30 December 2016
5	Anoop George	"Progress, Promise and Problems: Revisiting the Art of Techne."(Paper presented)	Life-World and Consciousness, The Centre for Phenomenological Studies (Sponsored by the Indian Council of Philosophical Research (ICPR), New Delhi.), Department of Philosophy, Loyola College Chennai	03-05 March 2016
6	Geetha B	Analysis of Mira Nair's "Monsoon Wedding" using the GeM framework.	International Congress on English Grammar (ICEG-2016). Department of English, Guru Nanak Dev University Amritsar (Punjab) INDIA in collaboration with Systemic Functional Linguistics Association, Hyderabad	08-12 February 2016
7	Geetha B	Minimalism in Abbas Kiarostami's films.	National Level Media Seminar on Cinema ,Christ University, Bangalore.	04-05 August 2016
8	Rayson K Alex	"Indigenous Cosmopolitics-poetics in Indian Food Documentaries"	International Conference on "The Culture of Food: Literature and Society Departments of English and Tourism, M.E.S. College for Arts and Commerce, Goa. The Queeny, Goa	25, 26 and 27 February 2016
9	William Henry Spates	"Hamlet's Journey into the Uncanny Valley: Post-Humanism, Digital Humanities, and the Dialectics of Inevitability	Indira Gandhi National Center for the Arts (New Delhi, India,	December, 1 st -3 rd , 2016)
10	William Henry Spates	"Watching the Detectives": DFR and R Pearson's Coefficient Analysis of Shakespeare and Critical Anxieties",	Shakespeare, Digital Archiving, and Textual Computing Symposium, School of Cultural Texts and Records, Jadavpur University (Kolkata, India	November, 29 th , 2016)
11	William Henry Spates	"Stockfish, Clipfish, and Carp: The Exotic Literary Lives and Afterlives of Medieval and Early Modern Seafood"	International Conference on "The Culture of Food: Literature and Society Departments of English and Tourism, M.E.S. College for Arts and Commerce, Goa. The Queeny, Goa	25, 26 and 27 February 2016

E. Conferences, seminars & workshops conducted : 2

The department organized two conferences

- National Symposium on Digital Humanities, September 2016 (Coordinators: William Henry Spates, Amitendu Bhattacharya; Participants : 30). Experts : Prof.Sukanta Chaudhury, Prof.Supriya Chaudhury, Jadavpur University, Kolkata; Dr. Padmini Ray Murray (Srishti Design Institute, Bangalore; Dr. D. Venkat Rao, The English & Foreign Languages University, Hyderabad; Mr.Orijit Sen, Graphic Novelist, Goa
- Workshop on Film Making and Script Writing, 18-20 March 2016 (Coordinators: Geetha B, Rayson K Alex, Amitendu Bhattacharya) Participants : 45. Experts : Mr.Abhaya Simha, National Award Winning Film Director; Mr.NAM Ismail, Script Writer, Bangalore.

F. Invited Talks / workshops given/ conducted by BITS faculty (11)

S.No.	Faculty	Title of the lecture/workshop	Venue	Dates
1	Basavadatta Mitra	Networking the Triple Helix of Competitiveness	Industry Institute Sahyog-2016, Glow India Initiative of ATEC at Father Agnel Polytechnic, Verna, Goa	11 March 2016
2	Geetha B	workshop in Film Appreciation	Guru Nanak Dev University Amritsar (Punjab)	08 February 2016
3	Geetha B	Censorship in Cinema Panelist for discussion	Seminar on Cinema, Christ University, Bangalore	04-05 August 2016
4	Meenakshi Raman	Elements of Effective Scientific and Technical Writing	Workshop for 40 research scholars at IIT Ropar	28-29 November 2016
5	Meenakshi Raman	Isabella or The Pot of Basil : Psychological Face of Love	inaugural ceremony of Sanskriti, literary club inauguration at MES College, Goa	14 September 2016
6	Meenakshi Raman	Writing : An Essential key to Academic and Professional Progress	seminar on Writing Centre: An Instrument to improve writing skills of students Organized by Writing Centre, Student Support Services, Chowgule College, Goa	12 August 2016
7	Meenakshi Raman	Integrated Language Learning through Dictogloss” and “ Corss cultural variations in Communication”	English refresher course organized by the UGC Human Resource Development Centre, Goa University	12-15 March 2016
8	Rayson K Alex	“Nature-culture-sacred Continuum as Ecocultural Ethnography: My Experience with the Mudugar”	University of Warsaw, Poland	21 November 2016
9	Rayson K Alex	Resource Person for a workshop on Practical Ecocriticism	Dr. K.N. Modi University, Newai, Rajasthan	18 March 2016
10	Reena Cheruvalath	Interdisciplinary education: Philosophy and Practice	National Workshop on ‘Quality enhancement in Higher Education: The role of Interdisciplinary Teaching Learning and Research, sponsored by NAAC. Nirmalagiri College, Koothuparambu, Kerala	22-23 January 2016
11	R P Pradhan	Between Soft State & Emerging Giant: India’s Narrative of Democracy, Development & Good Governance	National Seminar On “Democracy, Development and Good Governance”, Organized by Department of Political Science, Neelamadhav Mahavidyalaya, Kantilo, Odisha, (Key Note Address)	19-20 November 2016

G. Invited talks arranged in the department: (9)

No.	Speaker	Affiliation	Topic	Date
1	Mr. Rahul Basu	Founder & CEO, Ajadé and is now a member of Goa Foundation; Mines, Minerals & People (MM&P); India Network for Basic Income (INBI) and the Goenchi Mati Movement.	Who owns Minerals? How could they be managed? The Goenchi Mati Proposal	28-Sep-16
2	Mr. SaumyanandaSahi	Independent film maker and Former Student of Film and Television Institute of India, Pune	Film screening: Remembering Kurdi	26-Aug-16
3	Dr. Aaron lobo	GIZ, Indo- German Biodiversity Programme	Documentary screening: Chora Island: a place, its people and the project	28-April-16
4	Mr.Abhaya Simha	Film Maker	Introduction of Film as a medium	18 March 2016
5	Mr.NAM Ismail	Script Writer	Image Aesthetics in Digital Era	18 March 2016

6	Prof.Feda Yousef Al-Tamimi	Associate Professor of Linguistics and Speech Sciences at Jordan University of Science and Technology	Medical Machines in Language-Speech Assessment	15-Mar-16
7	Prof.Ravi Shankar	Executive Director of Drunken Boat and faculty at City University of Hong Kong	Intersection of Digital Media with Print Publication	05-Feb-16
8	Prof. Rukmini Bhaya Nair	Professor of Linguistics and English at the Indian Institute of Technology in Delhi	Chat Rooms and Class Rooms	04-Feb-16
9	Prof. SaurabhDube	Professor of History at the Centre for Asian and African Studies, El Colegio de México	Subjects of Modernity	13-Jan-16

H. Awards and recognitions won by faculty and students:

Basavadatta Mitra---Since July,2016, appointed Team Leader,for one of the verticals-Project-based Evaluation,under Education Committee,Goa Chamber of Commerce and Industries,responsible for auditing Internship Programmes of State Engineering Curriculum.

Meenakshi Raman has been appointed for the second term (2016-2019) as a member of Board of Studies, Goa University, for English.

As an expert, **Rayson K Alex** was invited to organize tiNai Ecofilm Festival (Edition 3) at Dr. K.N. Modi University, Newai, Jaipur, Rajasthan on 17, 18 March 2016 (Coordinator: Mr. Saikat Banerjee).

R.P.Pradhan received ICSSR Project Grant of Rs. 15Lakh for the project titled Agenda 2020: India's Maritime Infrastructure, Governance & Naval Diplomacy.

I. Faculty Development, International Collaboration & Industry Immersion:

Conducted a Training Program in technical Writing for the officers of CIPLA Biotec, Verna , Goa during 12 July-05 October 2016 (Coordinator: Meenakshi Raman; Sessions : Meenakshi Raman, Shalini Upadhyay, Layla Mascarenhas)

J. Significant new equipments/experimental facility added during the year: Nil.

K. Departmental association/club activities: NA

B2.10.8 Department: Mathematics

Number of faculty members (as on 31 December 2016): 16

Senior Professors, Professors	00
Associate Professors	02
Assistant Professors	12
Lecturers	02
Adjunct Faculty	01

Head of the Department: Dr Prasanna Kumar N

Number of PhD Scholars: 11 (6 FT+4PT+1L)

Ph.D. Thesis Submitted during the year: 1

A. Sponsored Research activities:

(i) Ongoing projects:

- Project Title: Studies on neighborhood magic graphs (Completed in June-2016)
Principal Investigator: Dr. T. Singh
Sponsor: Department of Science & Technology, Govt. of India.
Amount: Rs. 12.69360 Lakhs (2013-)
- Project Title: Establishment of Scientific computation Laboratory
Principal coordinator: Dr. Dhanumjaya

Sponsor: DST-FIST

Amount: Rs.37.5 Lakhs (2014-)

(ii) **Projects sanctioned during the year: Nil**

B. Books Published/Edited during the year:

Faculty Members joined: NIL

Invited lectures/talks delivered by faculty members:

1. Dr. Alpesh Dhorajia delivered an invited talk on Serres's Problem on Projective Modules, 2nd National Conference on "Algebra, Analysis and Fuzzy Mathematics", in the Department of Mathematics, School of Mathematical Sciences, North Maharashtra University Jalgaon, Maharashtra, during January 29-30, 2016
2. Dr. Dhanumjay delivered an invited talk on "Mixed Discontinuous Galerkin Finite Element Methods for the fourth order nonlinear parabolic problems" in National Conference on Computational and Theoretical Partial Differential Equations (CCT-PDE 2016) during October 5-7, 2016 at National Institute of Technology Goa, India. (with Amiya Kumar Pani)
3. Dr. Mayank Goel delivered an invited talk and Chief Guest for two day national seminar on "Applied Statistics and Quantitative Finance" organized by the Post Graduate Department of Statistics, Govt. Victoria College Palakkad, Kerala, during December 8-9, 2016.

C. Research Publications:

• **Journals (International)**

1. Alpesh Dhorajia and Jimmy M. Morzaria: Domination in total graphs of small rings, *Discrete Mathematics, Algorithms and Applications*, 8 (2016) 4.
2. Jessica Pereira, T. Singh and S. Arumugam: On (k, d) -hooked Skolem graceful graphs, *Journal of Combinatorics, Information and System Sciences*, 41 (2016) 7-15.
3. B. Pradeep and S. Thangavelu: On the chaotic behavior of the Dunkl heat semigroup on weighted L_p spaces, accepted by *Israel Journal of Mathematics*.
4. B. Pradeep, Luz Roncal and S. Thangavelu: Mixed norm estimates for the Cesaro means associated with Dunkl–Hermite expansions, accepted in *Trans. Amer. Math. Soc.*
5. Prasanna Kumar, On Turan's Inequality for Complex Polynomials, *Note di Matematica*, 36(1) (2016) 55-62.
6. G. C. Samanta and B. K. Bishi: Universe described by Kaluza-Klein space time with viscous modified cosmic chaplygin gas in general relativity. *Iran Journal of Science and Technology; Transactions A; Science*, 40 (2016) 245.
7. Mohan N.C. and Prabal Paul, On some weighted zero-sum constants, *International Journal of Number Theory*, accepted for publication, (2016).

• **Journals (National) : Nil**

• **Proceedings in Conferences**

1. 1. Jessica Pereira, T. Singh and S. Arumugam: *m-Gracefulness of graphs*, *Lecture Notes in Computer Science* 9602 (2016) 289-298.
2. Mayank Goel and J.K. Sahoo, Portfolio Risk Management using Signed Graphs, proceedings of International conference on computational physics, mathematics and its applications (ICCPMA2016), Page 109-117, which held at Tokyo, Japan during November 7-8, 2016.
3. C.S. Singh, A.K. Singh and J.K. Sahoo, Mess-Less Numerical Scheme Based on Matrices for Integro-Differential Equation, proceedings of International conference on computational physics, mathematics and its applications (ICCPMA2016), Page 118-128 which held at Tokyo, Japan during November 7-8, 2016.

D. Paper presentations in International/National Conferences:

1. Jessica Pereira Presented paper entitled "*m-Gracefulness of graphs*", International Conference on algorithms and discrete applied mathematics-2016, organized by Department of Futures Studies, University of Kerala, Thiruvanthapuram, February 18-20, 2016.
2. G. C. Samanta presented a paper entitled "Bulk viscous universe in modified gravity" in 10th spontaneous workshop on hot topics in modern cosmology which was held at Institut d'Etude Scientifique de Cargèse (IESC) Corsica 9th – 14th May, 2016 Cargese, France.

3. Amit Setia, Vaishali Sharma, Yucheng Liu presented a paper entitled "Haar Based Numerical Solution of Fredholm-Volterra Fractional Integro-differential Equation with Nonlocal Boundary Conditions" in ICNPAA World Congress - 2016: Mathematical Problems in Engineering, Aerospace and Sciences, 5 - 8 July 2016 at University of La Rochelle, France.
4. Amit Setia, Bijil Prakash and A.S. Vatsala presented a paper entitled " Numerical Method to Solve Cauchy Type Singular Integral Equation With Error Bounds in ICNPAA World Congress - 2016: Mathematical Problems in Engineering, Aerospace and Sciences, 5 - 8 July 2016 at University of La Rochelle, France.
5. P. Dhanumjaya and K. Balaji presented a paper entitled "Discontinuous Galerkin Finite Element Methods for the One-Dimensional Rosenau Equation" in National Conference on Computational and Theoretical Partial Differential Equations (CCT-PDE 2016) during October 5-7, 2016 at National Institute of Technology Goa, India.
6. P. Dhanumjaya and S. K. Bhal presented a paper entitled "Orthogonal Spline Collocation Methods for the One-Dimensional Parabolic PDEs with Interfaces" in National Conference on Computational and Theoretical Partial Differential Equations (CCT-PDE 2016) during October 5-7, 2016 at National Institute of Technology Goa, India.
7. Alpesh Dhorajia delivered a talk on "Dominating Parameters of Certain Graphs" at the 30th Midwestern Conference on Combinatorics, Cryptography, and Computing during October 14-16, 2016 at the campus of Illinois State University in Normal, Illinois.
8. Mayank Goel presented research paper entitled: "Portfolio Risk Management using Signed Graph" in "International Conference on Computational Physics, Mathematics & its Applications"(ICCPMA 2016) held at Tokio, Japan, during November 7-8, 2016.
9. C.S. Singh, A.K. Singh and J.K. Sahoo presented a paper entitled "Mess-Less Numerical Scheme Based on Matrices for Integro-Differential Equation" in International conference on computational physics, mathematics and its applications (ICCPMA2016) which held at Tokyo, Japan during November 7-8, 2016.
10. J.K. Sahoo and Akhil Balaji presented a paper entitled " Optimizing Support Vector Machines for Multi-class Classification" in international conference on advances in computing and data sciences (ICACDS 2016) which held at Ghaziabad, India during November 11-12, 2016.
11. P. Dhanumjaya and K. Balaji presented a paper entitled "Discontinuous Galerkin Finite Element Methods for the two-Dimensional Rosenau Equation" in International Conference on "Recent Advances on Theoretical and Computational Partial Differential Equations" held at Panjab University, Chandigarh during 05-09 December, 2016
12. P. Dhanumjaya and S. K. Bhal presented a paper entitled "Orthogonal Spline Collocation Methods for the one-Dimensional Parabolic PDEs with Interfaces" in International Conference on "Recent Advances on Theoretical and Computational Partial Differential Equations" held at Panjab University, Chandigarh during 05-09 December, 2016
13. R.K. Roul and J.K. Sahoo presented a paper entitled " Classification of Research Article Hierarchically: A new Technique" in 3rd international conference on computational intelligence in data mining (ICCIDM 2016) which held at KIIT, Bhubaneswar, India during December 10-11, 2016.

E. Workshops Attended:

Jesica Pereira participated in the "Indo-Hungarian School on Discrete Mathematics", jointly organized by Dept. Of Computer Sc. School of Mathematical Sciences RKM Vivekananda University Belur Math, Howrah; Department of Futures Studies University of Kerala Thiruvananthapuram Kerala and Alfred Reyni Institute of Mathematics Hungarian Academy of Sciences Budapest Hungary, held in Thiruvananthapuram, February 15-16, 2016.

F. Books Published/Edited during the year: Nil.

G. Conferences, seminars & workshops conducted in the department:

1. Organized a three day national level workshop on "R with Application to Quantitative Finance", August 26-28, 2016, Conveners: Mayank Goel and J K Sahoo. Funded by Department of Mathematics, BITS Pilani K K Birla Goa Campus. Around 35 people from industry/academia participated.

H. Invited talks arranged in the BITS:

I. Invited talks arranged in the department:

December 10, 2016. Prof. Komatsu Takao, School of Mathematics and Statistics, Wuhan University, Wuhan, P. R. China, delivered a lecture on "Euler Numbers and Related Numbers and their Applications".

November 18-22, 2016, Prof. V. Sree Hari Rao, Executive Director, International Center for Interdisciplinary Research Innovation, Hyderabad delivered lecture series on the following topics:

- Science with a Humane Face - Infectious Diseases -A Social Commitment.

- Periodic Solutions for Dynamical Systems.
 - Mathematical Support for a New Perspective of Image Construction Technology.
- November 12, 2016. Prof. C. R. Pradeep, Department of Mathematics, Channabasaveshwara Institute of Technology, Gubbi, Karnataka (Former faculty at Department of Mathematics, Indian Institute of Science, Bangalore) delivered a lecture on "Algorithmic techniques and puzzles".
- October 8, 2016. Dr. (Mrs.) Mukti Acharya, Retd. Professor and Ex. HOD, Department of Applied Mathematics, Delhi, Technological University, Delhi delivered a lecture on "Balanced Signed Graphs and Applications in Social Psychology"
- October 6, 2016. Prof. A. K. Nandakumaran, Department of Mathematics, Indian Institute of Science (IISc) Bangalore delivered lectures on "Qualitative Analysis of Ordinary Differential Equations"
- April 8, 2016, Prof. S. Arumugam, Member, Program Advisory Committee - Mathematical Sciences, Science and Engineering Research Board (SERB) delivered a lecture on "Preparation of Research Project Proposals to Funding Agencies".
- April 1-2, 2016, Prof. Mythily Ramamswamy, Professor, TIFR Center for Applicable Mathematics, Bangalore delivered lecture series on the following topics:
- Some Problems from Stabilization of Fluid Flows.
 - The Story of Optimal Control.
- March 22, 2016, Dr. Debajyoti Nandi, Visiting fellow, Chennai Mathematical Institute, Chennai delivered a lecture on "Representation Theory + VOA = Partition Identities".
- March 8, 2016, Prof. Graeme Fairweather, Mathematical Reviews, American Mathematical Society, U.S.A. delivered a lecture on "Sixty Years of Alternating Direction Implicit (ADI) Methods - A Personal Retrospective".
- March 4, 2016, Prof. Suresh M. Hegde, Department of Mathematics & Computational Sciences, National Institute of Technology, Karnataka delivered a lecture on "A Solution of the Erdos-Faber-Lavasz Conjecture".
- February 11, 2016, Prof. Amitava Bhattacharya, Professor, School of Mathematics, Tata Institute of Fundamental Research Mumbai delivered a lecture on "The Art of Counting".
- February 11, 2016, Prof. V. Sree Hari Rao, Executive Director, International Center for Interdisciplinary Research & Innovation, Hyderabad delivered a lecture on "Infectious Diseases - A Predictive Modeling Approach".
- February 10-13, 2016, Prof. V. Sree Hari Rao, Executive Director, International Center for Interdisciplinary Research & Innovation, Hyderabad delivered lecture series on the following topics:
- Inspire, Invigorate and Innovate: The Present and Future Challenges.
 - Stimulations in Simple Dynamical Systems.
 - Cross-Diffusion in Ecology: A Modelling Perspective.

J. Achievements/Awards by the Faculty members:

1. Dr. Mayank Goel received Ahlfors award for the best seminar presentation in the Department of Mathematics.
2. Dr. G. C. Samanta received International Travel Support from SERB-DST, Govt. of India, 2016
3. Dr. G. C. Samanta awarded Asia Pacific Center for Theoretical Physics (APCTP) grant for attending conference at the University of Sydney, Australia, Nov. 28-Dec. 02, 2016.
4. Dr. Prasanna Kumar visited Auburn University, Auburn, USA as Visiting Associate Professor for Fall-2016.

K. Faculty Development, National/International Collaboration & Industry/ University immersion:

1. Under university immersion program, Dr. Anil Kumar, visited School of Mathematical and Physical Sciences, University of Newcastle, University Drive, Callaghan NSW 2308 Australia from May 21st to July 22nd, 2016 under the University Immersion program. There I worked with Dr. Bishnu Prasad Lamichhane on numerical computation of optimal control problems involving partial differential equations.
2. Dr. Alpesh Dhorajia visited University of Alberta, Department of Mathematics, Edmonton, Alberta, Canada, October 2016.

Collaborations:

Prasanna Kumar

- Prof. N. K. Govil, Department of Mathematics and Statistics, Auburn University USA.
- Prof. Gerhard Schmeisser Department Mathematik, FAU Erlangen-Nürnberg, Germany.

P. Dhanumjaya

- Prof. Graeme Fairweather (Senoir Editor in AMS, USA).
- Prof. Veerappa Gowda (TIFR-CAM, Bengalore).
- Prof. Amiya Kumar Pani (IIT Bombay).

Prabal Paul:

- Dr. Mohan Namdev Chintamani (Department of Mathematics and Statistics, University of Hyderabad, has visited our department several times for possible research collaboration).
- Dr Prabal Paul has also visited University of Hyderabad, Harish Chandra Research Institute, Allahabad, Indian Statistical Institute, Kolkata, on research collaboration.

L. Significant new equipments/experimental facility added during the year:

DST-FIST Level-1 Scientific Computing Lab. Is made functional

M. Departmental association/club activities:

April 10, 2016, Third Department Day/MATHFEST was celebrated. Prof. S. Arumugam, Member, Program Advisory Committee - Mathematical Sciences, Science and Engineering Research Board (SERB) was the chief guest. He delivered a special lecture on Srinivasa Ramanujan.

N. Any other information: nil**B2.10.09 Department: Mechanical Engineering**

Number of faculty members (as on 31 December 2016) :

Senior Professors, Professors	1
Associate Professors	2
Assistant Professors	7
Lecturers	5
Visiting Faculty	1

Head of the Department: Dr. Shibu Clement

Contact details: *shibu@goa.bits-pilani.ac.in*

Number of PhD Scholars: 3 Full time + 2 Lecturers + 7 Part-time = 12

Ph.D. Thesis Submitted during the year: 3

A. Sponsored Research activities:

Total number of Sponsored Projects in the department: 05. Details are given below.

(i) Ongoing projects: 03

Sr.No.	Name of Investigator	Title of Project and duration	Amount sanctioned (Rs)	Funding Agency
1	Gaurav Singh	Simulation of simultaneous rock fractures at multiple scales, 3 years	30.00 lakhs	Ministry of Mines
2	Ranjit S Patil	Study and Analysis of Fluid Dynamics and Heat Transfer Characteristics in Circulating Fluidized Bed Heat Exchanger with Novel Designs of Heat Exchanger	27.66 Lakhs	SERB-DST
3	Karthikeyan	Flow investigation through μ ED-milled metallic micro channels	21.21 lakhs	SERB-DST

(ii) Projects sanctioned during the year: 1

Sr. No.	Name of Investigator	Title of Project and duration	Amount sanctioned (Rs)	Funding Agency
1	Gaurav Singh	Simulation of simultaneous rock fractures at multiple scales, 3 years	30.00 lakhs	Ministry of Mines

(iii) Projects completed this year: 1

Sr. No.	Name of Investigator	Title of Project and duration	Amount sanctioned (Rs)	Funding Agency
1	P M SINGRU	RO RO OF C130 J AIRCRAFT	15,79,000	LOCKHEAD MARTIN CO USA

B. Publications: 11

Sl. No.	Authors	Title of the Publication	Journal	Vol	Issue	Page	Month of Publication	Year of Publication	National/International
1	Pravin Singru,	Development of an Experimental Model for a Magnetorheological Damper Using Artificial Neural Networks (Levenberg-Marquardt Algorithm)	Advances in Acoustics and Vibration	2016	Article ID 7027259	6	MAY	2016	International
2	Akshay Sundar, Hancel P. V., Pravin Singru, Radhika Vathsan	Acoustic analysis and characterization of Indian musical instrument: Ghumot	Journal of Measurements in Engineering	4	3	122-132	August	2016	International
3	Akshay Sundar, Hancel P. V., Pravin Singru, Radhika Vathsan	Study of Saraswati Veena – a South Indian musical instrument using its vibro-acoustic signatures	Journal of Vibro Engineering	18	5	3362-3368	August	2016	International
4	Satish Mullya and G Karthikeyan	Dielectric flow observation at inter-electrode gap in micro-electro-discharge-milling process	IMechE Part B	In press					international
5	T. Gupta, B. Kewlani, K. D. Mali	"Study on the Use of Boundary Characteristic Orthogonal Polynomials in Determining the Fundamental Frequency of Rectangular Plates with Bidirectional Linear Thickness Variation	Applied Mechanics and Materials	852		518-524	September 2016	2016	international
6	Keya Ghonasgi, Kalpit Bakal, Kiran D. Mali	A Parametric Study On Free Vibration of Multi-Perforated Rectangular Plates, in Procedia Engineering	Procedia Engineering	144		60-67	May 2016	2016	international
7	M. Sreedhar Babu, S. Clement and N.K.S. Rajan	Fuel conversion benefit of Producer gas over Gasoline - An experimental analysis	Energy Procedia	100		203-209	November, 2016	2016	international
8	M. Sreedhar Babu, S. Clement and N.K.S. Rajan	Development and Testing of a Laboratory Scale Induction System for a Bottled Producer gas Fuelled IC Engines	Applied Mechanics and Materials	852		659-665	September, 2016	2016	international
9	Femi R, Agrawal A	An FEM study of the effect of temperature on	Sensors & Transducers	202	7	51-58		2016	international

Sl. No.	Authors	Title of the Publication	Journal	Vol	Issue	Page	Month of Publication	Year of Publication	National/International
	and Clement S.	the design of reliable micro electrical contact							
10	R. Femi, Anita Agrawal and Shibu Clement	An FEM Study of the Electrothermal Properties of Microelectrical Contacts for Application in the Design of Arcless Switches	IEEE Transaction on Components, Packaging and Manufacturing Technology	6	3	407-417	March 2016	2016	international
11	Kiran C.P. and Shibu Clement	X-abilities and attributes based decision making in evaluation and selection of a turbine blade material	International Journal of Materials, Mechanics and Manufacturing	4	1	17-24	January 2016	2016	international

C. Conferences attended/papers presented: 10

Sl. No.	Authors	Title of Paper	Conference Name	Location	Date, Month and Year	National/International
1	Y.Y. Xu, X.H. Tang, Q.S. Liu & G. Singh	Three-dimensional simulation for the rock fragmentation induced by TBM with GFEM	Recent Advances on Rock Engineering (RARE)	Bengaluru	16/10/2016-18/10/2016	International
2	G. Singh	Crack growth rate via inclusion of timescale distinction in hydrogen cracking	24th International Congress of Theoretical & Applied Mechanics (ICTAM)	Montreal, Canada	21/08/2016-26/08/2016	International
3	S. Govilkar, A. Patil & G. Singh	An Experimental Study into the Role of Friction Between Crack Faces in Compressive Fracture	2nd International Conference and Exhibition on Fatigue, Durability and Fracture Mechanics	Bengaluru	28/09/2016-30/09/2016	International
4	H. Garg & G. Singh	Solution of two-parameter cohesive zone model using Chebyshev polynomials for singular integral equation	61st Congress of Indian Society of Theoretical & Applied Mechanics (ISTAM)	Vellore	11/12/2016-14/12/2016	International
5	M. G. Kalola, Mahesh Dasar, K. P. Shete, R. S. Patil	Effect of Novel Swirling Perforated Distributor on Fluid Dynamic Characteristics of Circulating Fluidized Bed Riser	ASME 2016 Power and Energy Conference	North Carolina, USA	26/06/2016-30/06/2016	International
6	Tanmay Gupta, Bhagat Kewlani, Kiran D. Mali*	Study on the Use of Boundary Characteristic Orthogonal Polynomials in Determining the Fundamental Frequency of Rectangular Plates with Bidirectional Linear Thickness Variation	International Conference on Mechanical Engineering Design (ICMED 2016)	Chennai.	25/04/16-26/04/2016	International
7	Iniyani N. Kulkarni D M and Savio D.S.A Lourenço	Mechanical performance of dental implants: comparison of Titanium vs. Zirconia*	3rd International Conference on BioTribology (ICoBT 2016).	Imperial College of London (UK)	11-15-Sep-2016	International
8	A.C. Kulkarni, Kulkarni D. M. and Dube A.	Experimental investigation of wear for hip implant material using designed and developed screening devices	3rd International Conference on BioTribology (ICoBT 2016).	Imperial College of London (UK)	11-15-Sep-2016	International
9	Parth Chaturvedi and Varinder Singh	Simulation and Optimization of a supply chain system	9th ISDSI (Indian Subcontinent Decision Sciences Institute) International conference, GIM, Goa, paper no. 215	Goa	Jan 2-4, 2016	International
10	Palash Dhir and Varinder Singh	Implementing Analytics in a Case of e-business	10th ISDSI (Indian Subcontinent Decision Sciences Institute) International conference, MET BKC, NashikGIM, Goa, paper no. 242	Nashik	Dec 28-30, 2016	International

D. Books Published/Edited during the year: 02

Sr. no.	Name of publication/Name of the book	Details
1	International Journal of Vibroengineering	Dr. Kiran Mali Reviewed paper
2	Management and Production Engineering Review	Dr. Varinder Singh reviewed papers for this journal

E. Conferences, seminars & workshops conducted: 03

S. No.	Title	Date	Description
1	one-day workshop on INTRODUCTORY COURSE ON ASME SECTION VIII DIVISION 1 (UNFIRED PRESSURE VESSELS).	10-04-2016	Resource Person : Dr. Dipak K Chandiramani (B. Tech. (Hons.), M. Tech. and Ph.D. degrees in Mechanical Engineering IIT Kharagpur) authorized Inspector Supervisor of ASME Certification Mark stamped vessels Faculty co-coordinators : Dr. PL Ramkumar, Dr. Kiran D Mali
2	Inauguration of Goa Chapter of Indian Institute of Metals	25-09-2016	Lecture by President of Indian Institute of Metals, Prof. Indranil Manna, Director of IIT Kanpur.
3	10th ISDSI International Conference	28-30 Dec, 2016	Dr. Varinder Singh was Program Committee Member

F. Invited Talks given by BITS faculty: 02

Sl. No.	Authors	Host	Title	Date
1	Gaurav Singh	Advanced Systems Laboratory, DRDO	Topics in Fracture Mechanics	25/11/2016
2	Karthikeyan	TATA motors, Supply chain event	SCM New Trends	14/08/2016

G. Invited talks arranged in the department: 01

S.No.	Speaker	Topic	Date
1	Mr. Kedar Hendre (TATA Technologies)	Introduction to Crash and Safety Analysis	17/11/2016

H. Awards and recognitions won by faculty and students: 02

Sl. No.	Name	Association/Society member
1	P M Singru has won best paper third prize for his paper "Modeling of a Magneto-Rheological (MR) Damper using Genetic Programming" in IPROMM 2016 held at Visvesvaraya National Institute of Technology, Nagpur from December 22-23, 2016	Association of Machines and Mechanisms
2	Ranjit S Patil has been invited as Session Co-Chair in the ASME POWER & ENERGY CONFERENCE 2016 held during 26-30th June, 2016 at Charlotte Convention Center, Charlotte, North Carolina, USA	ASME

I. Faculty Development, International Collaboration & Industry Immersion: 02

Sr. No.	Name of Faculty	Name of the programme	Collaborator	Duration date and month
1	Kiran D Mali	Two Days National Workshop on Computational Dynamics	NIT Surathkal	26-27th September 2016
2	Shibu Clement, Pravin M Singru	Workshop on Computational Mathematics and Finite Element Method	NIT Goa	1-11 July 2016

J. Significant new equipments/experimental facility added during the year:2016

Significant equipment added during this year is as follows:

S.No.	Particulars
1	Fog Generator, Features: Output: 20,000 cu.ft/min
2	AIR ROTAMETER
3	NG ROTAMETER
4	SOFTWARE: i) MSC Motion Bundle- Adams, Adams/Car, Easy 5 - (150 Licences), ii) FTire modules - (5

	Licences)
5	SOFTWARE - Moldex3d Solutions - eDesign Package - Educational Perpetuity
6	Altair HyperWorks Software - Altair Research License Software (with Unlimited Nodes) Altair Research License Software includes: HyperMesh, HyperGraph, HyperView, MotionView, Radioss Linear, HyperForm, Radioss Non-Linear, Hypermath, MotionSolve, HyperStudy, OptiStruct, HyperXtrude & AcuSolve
7	Data Acquisition System with accessories (NI Products)a) cDAQ-9178, Compact DAQ Chassis (8 slot USB), b) Power Cord, 250V, 10A, c) NI 9214 16-Ch Isothermal TC, 24-bit C Series Module, d) NI 9212, Ch-Ch Isolation, 24-Bit, 100 S/s, 8-Ch, thermocouple C Series Module, e) NI 9203 Screw Terminal, +/-20 mA, 16-Bit, 200kS/s, 8-Ch, AI C Series Module, f) NI 9927, Strain Relief and Operator Protection for 10-pos Screw Term
8	100 kN Median Test System
9	SOFTWARE: SIMULIA Academic Teaching Suite which provide access to Abaqus, I-Sight, Tosca and Fe-Safe with node limitation of 2.5 lakh nodes
10	2 Component Laser Doppler Velocimetry (LDV) System
11	Booster Air Compressor, , Input pressure 1kg, Output pressure up to 10 kg , Output air 450 m3/hr.
12	Academic TAH License for MATLAB
13	a) SIMULIA Academic Abaqus Research Base License – Qty:1, b) SIMULIA Academic Research Suite Additional License – Qty:4
14	8 Channel Sound Power Measurement System along with Vibration Sensors & Accessories
15	Traverse for Existing LDV System [3-Axis Traverse System, 600 x 600 x 600 mm, includes mounting base, 3-axis controller

K. Departmental association/club activities:

The following students association has arranged different activities under following categories.

(i) MESA:

1. Organized the Department Week for Mechanical Engineering Department in first week of Jan, 2016
2. Total of 5 events were organized for students on Department Day. Events included Design Challenge, Quiz, Simulation Challenge, Design and Build Open Showcase and Coding Challenge
3. Invited talk by Mr. Shailesh Phatak, Assistant General Manager, Corporate Business Excellence, TATA Motors was organized.
4. A series of workshops was conducted on Computational Fluid Dynamics: Basic Theory and Turbulence Modelling; Computation Fluid Dynamics using ANSYS Fluent; FEA (Solid Mechanics) using ANSYS Workbench; Pressure Vessel Design and ASME Codes.
5. A two-day training program on ABACUS was conducted under the guidance of Mr. P. Vignesh from EDS Technologies.
6. An interactive session with Head of the department for the improvement of the teaching learning was organized.
7. An informative session by experts regarding placements, internships, etc was conducted.
8. MESA elections for the post of Coordinator and Secretary were conducted for the academic year 2016-17.
9. A certified workshop on Altair Hypermesh '16 was organized for all the students.
10. Organized a workshop on Spud Gun Making and RC Car basics in association with Quark
11. A talk on Crash and Safety Analysis by Mr. Kedar Hendre, professional working with Tata Technologies was organized with the help of Dr. Kiran Mali.

(ii) Society of Automotive Engineering (SAE):

1. Thanks to the continued support of Director Dr. Sasikumar Punnekkat, Department of Mechanical Engineering, Dr. Shibu Clement, Dr. R. S. Patil and Workshop Staff, SAE club was given a new room for the club in front of the IC Engines Lab.
2. Team Grease Monkeys – BAJA of SAE BITS Goa successfully completed the manufacturing of the second BAJA vehicle of the campus on Feb. 9, 2016.

3. Team Grease Monkeys – BAJA participated in the main event of SAE BAJA India 2016 at Indore, and cleared the technical inspection and figure of eight test for the first time.
4. Unveiling and showcase session of the second BAJA Vehicle 'The Avibhuj' outside B-dome was organized. Inauguration was done by the Director of the campus.
5. Induction for the new team of BAJA was conducted. A new team comprising of 25 members was formed.
6. The newly formed team for BAJA completed their design for the 3rd BAJA Vehicle of campus by May 2016.
7. The BAJA team participated in the virtual event of SAE BAJA India 2017 held at Chirst University, Bangalore in the month of June. The team successfully cleared the virtual event, being eligible to participate in the final Main Event and our design and improvements were appreciated by all the judges. Only 150 teams were given the opportunity to fabricate their vehicles out of a total of 415 teams.
8. Team Grease Monkeys – SUPRA successfully completed the manufacturing of their second Formula Vehicle and participated in the main event of the SAE SUPRA held at the Formula – 1 track of India, Buddh International Circuit in Noida in the month of July, 2016.
9. Club inductions were held for the first and second year students in the month of August. 88 students were inducted into the club after a written test and interview.
10. Unveiling and showcase of the second Formula Vehicle was done in the auditorium during Department Orientation by the Director of the campus.
11. Induction for the new team of SAE SUPRA was conducted. A new team comprising of 25 members was formed.
12. SAE Club in association with Centre for Technical Education organized a course on 'Vehicle Design and Dynamics' from August to December, 2016 and received a turnout of 34 students.
13. SAE Club organized a lab visit of the IC Engines Lab for the students of Automotive Mechanics under the guidance of Dr. Kiran Mali.
14. An invited talk was organized on 'The exciting world of motorsports and the technical support that makes it happen' by Padma Shri Mr. Narain Karthikeyan, India's first F1 driver on 20th November, 2016.
15. Team Grease Monkeys – SUPRA have completed the design of their 3rd Formula Vehicle and will start with the manufacturing of the vehicle.
16. Team Grease Monkeys – BAJA have completed the manufacturing of their 3rd BAJA vehicle and will start with the testing of the vehicle.

(iii) Team Robocon:

1. The Asia-Pacific Robot Competition (ABU Robocon) is a Pan Asia-Oceania University robotics competition. Students compete to design and build robots to complete a specialized task within a set period of time.
2. A 17 member team of undergraduate students from disciplines such as Mechanical, EEE, ENI was formed to participate in National round of ROBOCON held at Pune in March 2016.
3. Problem statement for ROBOCON 2016 was "Clean Energy Recharging the World". The team had to build two robots; Eco Robot and Hybrid Robot. The team began working from August 2015 in ERC room.
4. The team used design thinking methodology with emphasis on making and testing lots of prototypes before finalizing designs.
5. The team made efficient use of Machining tools in workshop such as lathe, mill etc. and 3D printer for their manufacturing needs.
6. The team is making use of electro-pneumatic actuation, omni-directional wheeled motion, BLDC motors, various sensors like laser, RGB, Proximity and Image processing etc. to build and test robots.
7. The team secured 32nd rank out of 100 participating teams in ROBOCON 2016.
8. Currently the team is working on ROBOCON 2017 themed: "The landing disc".

(iv) Aerodynamics Club:

1. Participated in IIT-Delhi's technical festival and won the 1st prize in the quadcopter competition.
2. Held written and P.I. induction rounds and admitted 67 new members into the club.
3. Organised open-for-all lectures on topics such as Aerodynamics, Avionics, Design and RC Flying. Also began with mentored projects and training for the new inductees.
4. Successfully presented two completed projects at an IEEE 'Tech Talk' event attended by 400+ students.
5. Built a brand new 3D Printer and 3D Scanner for the club to use and restructured the existing workspace. A new handbook for RC enthusiasts was published.
6. Organised an invited talk by Colonel Ananthanarayan on 'Indoor Flight' and a short workshop for the same.
7. Demonstrated a Trainer Plane and a Twin-Boom Model Aircraft to young students from Zari during Joy of Giving Week in association with Nirmaan.

8. The club demonstrated its projects at NIT Goa on the inaugural day of their technical festival. A short presentation of our club was given on stage by the members.
9. The club took amazing aerial shots of Waves '16 using a self-built quadcopter.
10. The club successfully participated in three events at IIT-Bombay's Techfest. One of the teams managed to secure a very well-deserved 8th place (out of 90) in the quadcopter competition. The club also made a powered glider (for Boeing's competition) and a model submarine.
11. The Aerodynamics Club is currently working on a Solar-UAV, V-22 Osprey, I.C. Engine Plane and a 4-Axis CNC Foam Cutter.
12. The club will soon conduct a three-day quadcopter-building workshop. 17 teams (including 4 teams from outside BITS) have registered for the same. It will also conduct a brand new case study event on air crashes during Quark '17.

B2.10.10 Department: Physics

Number of faculty members (as on 31 December 2016): 15

Senior Professors, Professors	01
Associate Professors	05
Assistant Professors	09
Lecturers	00
Visiting Faculty	00

Head of the Department: Dr. Toby Joseph

Contact details: toby@goa.bits-pilani.ac.in

Number of PhD Scholars: 11

Ph.D. Thesis Submitted during the year:

A. Sponsored Research activities:

Total number of Sponsored Projects in the department: 04. Details are given below.

(i) Ongoing projects:

1. **Project title:** Improving the energy conversion efficiency of Solar Cells using Spin Caloritronics

Principle Investigator (PI): E.S.Kannan

Co-PI: None

Funding agency: Department of Science and Technology

Funding amount: 22 Lakhs

Project Duration - 3 Years, Started Date: 25/11/13

(ii) Projects sanctioned during the year

1. **Project Title:** Observational signals of quantum gravity in CMB

Principal Investigator: Kinjal Banerjee

Funding Agency: SERB

Funding amount: Rs 318528

Project Duration: 3 years Start date 18/1/2016

(iii) Projects completed this year: (Nil)

1. **Project Title:** Magnetotransport in magnetic tunnel junctions

Principal Investigator: Dr. Ram Shanker Patel

Co-investigator: None

Funding Agency: Department of Science and Technology, Govt. of India, under Nano mission program

Funding amount: Rs. 52.65 Lakhs

Project Duration: 4 years, Started Date: 3/9/2012

2. **Project Title:** Photoluminescence Studies on Undoped and transition Metal Doped ZnO Nanoparticles

Principal Investigator: Teny Theresa John

Co-investigator: None

Funding Agency: Department of Science & Technology, Govt. of India

Funding amount:Rs. 22.34 Lakhs

Project Duration: 3 years+ 6 months (extended), Started Date: 9/8/12

3. **Project Title:**Aspects of some astrophysical systems like supernovae and Neutronstars in the light of new physics

Principle Investigator (PI):Dr. Prasanta Kumar Das

Co-PI: Dr. T. K. Jha and Dr. C. Sharma

Funding agency: DAE, BRNS, Govt. of India

Funding amount: Rs. 17.51 Lakhs

Project Duration: 3+1 (extended) years, Starting date: 27th May, 2011 and date of completion is 31st October, 2015.

4. **Project Title:** Probing new physics at high energy colliders

Principle Investigator (PI): Prasanta Kumar Das

Funding agency: CSIR, Govt. of India

Funding amount: Rs. 13.50 Lakhs

Project Duration: 3 years, Starting date: 15th January, 2013

5. **Project Title:** Neutron stars as potential continuous gravitational wave emitter

Principle Investigator (PI): Dr. Tarun Kumar Jha

Funding agency: DAE-BRNS, Govt. of India

Funding amount: Rs. 13.50 Lakhs

Project Duration: 3 years, Starting date: 15th January, 2013

6. **Project Title:** Searching for new physics in B meson decay

Principle Investigator (PI): Chandradew Sharma

Funding agency: BRNS, DAE, Govt.

Funding amount: Rs. 18.02 Lakhs

Project Duration: 3 years, Started Date 30-10-13

B.Publications:

Journals / Publications (National / International)

1. Arunkarthick Samudram, Bijeesh M.Mangalassery, Meenal Kowshik, Nandakumar Patincharath, Geetha K. Varier (2016), Passive permeability and effective pore size of HeLa cell nuclear membranes. *Cell Biol Int*, 40: 991–998.
2. Dongsuk Lim, E S Kannan, Inyeal Lee, Servin Rathi, Lijun Li, Yoontae Lee, Muhammad Atif Khan, Moonshik Kang, Jinwoo Park and Gil-Ho Kim High performance MoS₂-based field-effect transistor enabled by hydrazine doping *Nanotechnology International 2016*
3. Inyeal Lee¹, Servin Rathi¹, Lijun Li¹, Dongsuk Lim, Muhammad Atif Khan¹, E S Kannan and Gil-Ho Kim Non-degenerate n-type doping by hydrazine treatment in metal work function engineered WSe₂ field-effect transistor *Nanotechnology International 2016*
4. A. Venkatesan, C. K. Ramesha, and E. S. Kannan In-situ reduction of graphene oxide on vertically aligned ZnO nanorods for reliable electrical contacts *Journal of Physics D- Applied Physics International 2016*
5. A. Venkatesan, In-Yeal Lee, Servin, Rathi, Gil-Ho Kim, and E. S. Kannan Improving the hydrogen sensing properties of thermally reduced graphene oxide using tin oxide nanoflowers at low operating temperature *Semiconductor Science and Technology International 2016*
6. PANDA Collaboration (involves A V Kulkarni and P N Deepak) Feasibility studies of time-like proton electromagnetic form factors at PANDA at FAIR e-Print: arXiv:1606.01118 [hep-ex] *International 2016*
7. PANDA Collaboration (involves A V Kulkarni and P N Deepak) Feasibility study for the measurement of πN TDAs at PANDA in $pp \rightarrow J/\psi \pi^0$ e-Print: arXiv:1610.02149 [nucl-ex] *International 2016*
8. Selvaganapathy J, P. K Das and P. Konar Drell-Yan as an avenue to test noncommutative standard model at large hadron collider *Phys.Rev.D 93:116003, 2016. International 2016*
9. Anita R. Warriar, R. Jayakrishnan, Teny Theresa John, C. Sudha Kartha and K. P. Vijayakumar Study on optical, electronic and thermal properties of β -In₂S₃ thin films using photothermal beam deflection technique *J Mater Sci: Mater Electron 27, 3628-3636 International 2016*

C. Conferences attended / papers presented (National/ International) International

1. Thermal hysteresis in Seebeck coefficient of MoTe₂ crystals. Dhavala Suri, S. P. Dash, and R. S. Patel. 5th International Chalcogen Conference, 19-21 December 2016, Goa
2. Electron-electron scattering dominance in MoTe₂ crystals at low temperatures. Dhavala Suri, S. P. Dash, and R. S. Patel. 61st Annual conference on Magnetism and Magnetic Materials, New Orleans, Louisiana, October 31 - November 4, 2016
3. 'Effect of non-linear vector interactions in nuclear matter', by Tuhin Malik, Kinjal Banerjee, T.K. Jha. 2015, Published in *DAE Symp.Nucl.Phys. 60 (2015) 878-879*.
4. 'Modified chiral potential and neutron stars', by Tuhin Malik, Kinjal Banerjee, T.K. Jha and B. K. Agrawal. 2016, Published in *DAE Symp.Nucl.Phys. 61 (2016) 872*.
5. 'Modified chiral potential and neutron stars with hyperons' by Tuhin Malik, Kinjal Banerjee, T.K. Jha and B K Agrawal. 2016, Published in *DAE Symp.High Energy Phys Symposium, 2016*.
6. 'Neutron Stars with Delta Isomers', Debashree Sen and T.K. Jha, *DAE Symp.Nucl.Phys. 61 (2016) 892*.
7. 'Hyperon matter in Neutron Stars', Debashree Sen and T.K. Jha, *DAE Symp.Nucl.Phys. 61 (2016) 894*.
8. Fabrication of p-n junction using ZnO nanopillars and Cu₂O thin films, Anu Roshini, A. Venkatesan and E. S. Kannan, International Conference of Young Researches on Advanced Materials. IUMRS-ICYRAM Dec 11-15 2016. Bangalore.

D. Books Published / Edited during the year:

E. Conferences, seminars & workshops conducted

1. The department arranged a day long meeting of Physics researchers in Goa on 9th December. The meeting had around 50 participants from institutions in Goa. The keynote address was delivered by Prof. Mandar Deshmukh of TIFR, Mumbai. This was followed by short talk by some of the participants and a poster session by PhD students.

F. Invited Talks given by BITS faculty:

Papers presented/ Invited Talks in conferences/ Workshop/ School:

G. Invited talks arranged in the department:

1. Dr. C. Sudhir, Assistant Professor, Department of Physics, Goa University visited the Institute on 20-02-2016. He delivered Lecture on "Plasmonics- Light at the nanoscale"

2. Prof. Bijay. K. Agarwal, Professor, Saha Institute of Nuclear Physics, Kolkata visited the Institute on 22-03-2016 "Journey from terrestrial Nuclei to extra-terrestrial Neutron star"
3. Dr. Satyanarayana, Scientific Officer (G), TIFR Mumbai India visited the Institute on 23-03-2016 . He delivered Lecture on " based Neutrino Observatory-India's very own mega science project".
4. Prof. Deshdeep Sahdev, Professor, Department of Physics, IIT Kanpur visited the Institute on 02-04-2016. He delivered Lecture on "Towards a technological renaissance in India – case study of an innovative high tech start-up".
5. Prof. Deshdeep Sahdev, Professor, Department of Physics, IIT Kanpur visited the Institute on 04-04-2016 . He delivered Lecture on " Was our cosmic dawn extra-dimensional".
6. Prof. Philips Diamonds, Director General SKA visited the campus along with other SKA dignitaries on 10 of November, 2016. Prof. Diamond delivered a public lecture titled: "From Dawn of Time to Life in Universe: How SKA will change our perception of the cosmos"
7. Prof. Mandar Deshmukh, Professor, Department of Physics, TIFR Mumbai visited the institute on 09-12-2016. He delivered a Lecture on nano structures as a keynote address during the Goa Physics Researchers Meeting

Physics Department Seminar Series (Faculties and Students)

Topic : Dark Matter and Compact Mass

Speaker : Dr. Tarun Kumar Jha, Assistant Professor

Date : 05-02-2016

Topic : Science behind temples

Speaker : Dr. E. S. Kannan, Assistant Professor

Date : 13-02-2016

Topic :Direct detection of gravitational waves

Speaker :Dr. Kinjal Banerjee, Assistant Professor

Date :29-02-2016

Topic : Gravitational Bending of Light

Speaker : Prof. A. V. Kulkarni, Professor

Date :04-03-2016

Topic :Phenomenon of synchronization in Nature

Speaker : Prof. Gaurav Dar, Associate Professor,

Date :11-03-2016

Topic :Low temperature hydrogen gas sensor

Speaker :A. Venkatesan, Research Scholar,

Date :18-03-2016

Topic : Searches for Physics Beyond the standard model at LHC

Speaker : Mr. J. Selvaganapathy, Research scholar

Date :15-04-2016

Topic :The SUN

Speaker :Dr. Tarun Kumar Jha Assistant Professor,

Date : 03/09/2016

Topic : Two Photon-Photothermal microscopy : Application in Biomolecular imaging"

Speaker : Mr. M. M. Bijeeesh, PhD Scholar

Date :10/09/2016

Topic :Spin Seebeck Effect in Magnetic Tunnel Junction

Speaker : Dr. Ram Shankar Patel, Assistant Professor,

Date : 20-08-2016

Topic :Binary Stars and Kleplerian Parameters

Speaker :Mr. Tuhin Malik, PhD Scholar

Date :24-09-2016

Topic :A few aspects of thermopower generation and thermoelectric materials"

Speaker : Ms. Dhavala Suri, PhD Scholar

Date :01-10-2016

Topic :Algebraic solution to Hydrogen Atom Problem

Speaker :Prof. Raghunath Ratabole, Associate Professor,

Date :08/10/2016

Topic :Extended $U(1)_X$ Non-commutative Standard Model Speaker :

Mr. Selvaganapathy, PhD Scholar,

Date :15-10-2016

Topic : " Neutron Stars with Hyperons"

Speaker : Ms. Debashree Sen, PhD Scholar.

Date and : 22/10/2016

Topic : " Implication of fermionic dark matter in the supernova SN1987A cooling "

Speaker : Dr. Prasanta Kumar Das, Associate Professor.

Date: 19/11/2016

Topic : " Introduction to Supersymmetry "

Speaker : Ms. Akhila Mohan, PhD Scholar.

Date : 26/11/2016

Topic : Investigating how the brain works : What can Magnetic Resonance Imaging (MRI) tell us?

Speaker : Mr. Mayank

Date and Time " 10/12/2016

H. Awards and recognitions won by faculty and students

I. Faculty Development, International Collaboration & Industry Immersion:

J. Significant new equipments / experimental facility added during the year:

K. Departmental association / club activities:

B2.11 DIVISION / UNIT/ CENTRE-WISE ACTIVITY

Alumni Affairs Division:

Alumni Affairs Division:

Distinguished Alumnus Award 2016:

"BITS Pilani Distinguished Alumnus Award" in 2016 to the following alumni:

Prof. Alok Choudhary	John G. Searle Professor, Dept. of Electrical Engineering & Computer Science, Northwestern University - for Academic Teaching and/or Research
Prof. G Ravindra Kumar	Senior Professor, Tata Institute of Fundamental Research (TIFR), Mumbai - for Academic Teaching and/or Research
Mr. N S Parthasarathy	Co-Founder, President & COO, Mindtree Limited -for Entrepreneurship
Mr. Mathew Cherian	CEO, HelpAge India - for Social Entrepreneurship

This is in recognition of their significant and outstanding contributions to entrepreneurship or academic teaching and/or research.

BITSians Day:

The third edition of 'BITSians Day' was celebrated on 5th of August, 2016.

Embryo & On-campus Lectures:

Alumni Affairs Division of BITS Pilani K K Birla Goa Campus has organized 9 Embryo & On-campus talks from January – December, 2016. Details are as follows:

S. No	Date	Title Of The Talk	Speaker's Name
1	15 th Jan, 2016	BITS To Norway-Opportunities For Higher Studies In Chemical Engineering	Mr. Shareq Mohammed Nazir
2	2 nd Feb, 2016	Social Pressure	Mrs. Natalie Edwards
3	16 th Feb, 2016	CAT Champs	Abhishek Desai Siddharth Sridhar Arpit Sarda Kunal Konde
4	17 th Feb, 2016	Diversity And Demographics Of Distant Rock Worlds	Dr. Leslie Rodgers
5	7 th Mar, 2016	Entrepreneurship	Mr. Kartik Hosanagar
6	9 th Mar, 2016	CS: Competitive Coding & Machine Learning	Mr. Hari Prasad
7	15 th Mar, 2016	Why The Money That You Think Might Keep You Happy, Won't!!	Mr. Nishant Suri
8	8 th Apr, 2016	Opportunities In Aeronautical Industry - A Journey From Bits To HAL	Mr. Sanket Shah
9	9 th Apr, 2016	How To Build Awesome Things - An Intro To Product Management	Mr. Dalan Mendonca
10	6 th Aug, 2016	Distinguished Alumnus Awardee: N S Parthasarathy's Talk on Entrepreneurship	Mr. N S Parthasarathy
11	28 th Aug, 2016	Alumni summit 2.0	Mr. Kartik Aneja Mr. Rishabh Goel Mr. Ankit Taparia Mr. Sanchit Sethi Mr. Prakhar Bindal Mr. Bhaskar E V Mr. Nikhil Tavora
12	29 th Aug, 2016	How to finance your masters abroad?	Mr. Rishabh Goel
13	9 th Sep, 2016	Stand Out, Win Trust and Gain Credibility	Mr. Mark Bowden
14	10 th Sep, 2016	The Deoliwallahs	Mr. Dilip D'Souza
15	30 th Sep, 2016	Anchors weigh in on cytoplasmic dynein regulation	Ms. Vaishnavi Ananthanarayanan
16	6 th Oct, 2016	GRE Champs	Anmol Sahoo Priyanshi Vadalía Dharinee Bhandari and Rishabh Sethunathan
17	12 th Oct, 2016	BITS2MS/PhD	Vikas Goel Danish Khan

			Siddharth Gupta
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Alumni Visits:

Name of the Alumnus	Batch	Profession	Purpose of visit
Aswini Kaarthik	1997	Analyst in Data Management Space	Personal Visit
Kaarthik Sivakumar	1993	Engineer	Personal Visit
Aditya Kambhampati	2004	Data Analytics Consultant	Campus Visit
R Ramanujam	1978	Theoretical Computer Scientist	Lectures
Vivek Ladha	1978	Industrialist	Casual
Smarajit Dey	1974	Executive/Academic	Campus Visit
Vaishnavi Ananthanarayanan	2004	Research Scientist	Delivering Lecture
Rishabh Goel	2009	Associate Relationship Manager	Alumni Summit 2.0 & Talk
Prakhar Bindal	2006	Entrepreneur	Alumni Summit 2.0
Sanchit Sethi	2008	Entrepreneur	
Nikhil Tavora	2010	Entrepreneur	
Ankit Taparia	2005	Entrepreneur	
Kartik Aneja	2008	Entrepreneur	
Bhaskar E V	1997	IRS	
Nithin Sebastian	2005	Pursuing MBA	Campus Visit
N S Parthasarathy	1978	Entrepreneur	DAA
Sanjay Singhai	1977	Founder & CEO	Exploring opportunities
Suresh Narasimhan	1979	Telecommunication executive	General
Sangamitra Kundu Narasimhan	1982	Museum Management	Travel
Sanket B shah	2005	Flight Test Engineer	Students Interaction
Vishrut Shukla	2005	Senior Product Manager	DAA meeting
Aditham G P	2006	IT	Campus Interviews

Alumni Summit:

Keeping in mind its resolute mission to keep the alumni of BITS connected to their Alma mater and to maintain the integrity and strength of the vast alumni community, BITS Alumni Affairs Division – Student Team Goa conducted the second edition of Alumni Summit on 28th of August, 2016. The speakers reminisced about their life back at BITS campuses and their journey thereafter.

Seven speakers who were invited for BITS Alumni Summit 2.0 are:

- Mr. Kartik Aneja, CEO and Co-Founder at Nayi Disha Studios.
- Mr. Rishabh Goel, Associate Relationship Manager at Prodigy Finance
- Mr. Ankit Taparia, Co-Founder of Teramatrix Technologies
- Mr. Sanchit Sethi, CEO and Founder of StayUncle
- Mr. Prakhar Bindal, CEO & founder of NameCart(formerly Axiom)
- Mr. Bhaskar E V, Under-Secretary to Ministry of Finance, Government of India
- Mr. Nikhil Tavora, Former Match Coordinator & Operations Executive at FC Goa

Prof. Suresh Ramasamy Memorial Award 2016:

The project idea 'Cosmic Ray Flux Measurement & Analysis' done by the students: Sanket Deshpande, Lucky Kapoor, Pankaj Tiple and Vibhav Joshi was selected for Prof. Suresh Ramaswamy Memorial Award 2016-17.

Research Scholarship:

One of our alumni Mr. Satish Sankaralingam initiated a research scholarship for BE students and an amount of Rs. 15,000/- was awarded to Hardik Hingorani and Dhruv Shekhawat as recognition to their research work.

Regular Activities:

Other regular activities like bi-annual Director's Tea Party, batch snap sessions, Alumni Affairs Division registrations, souvenir distributions, bringing out the yearbook 'Melange' for out-going students, hosting visiting alumni on campus, etc.

ACADEMICS AND RESOURCE PLANNING

The Academics and Resource Planning (ARP) Division at the BITS Pilani, K K Birla Goa Campus looks after the introduction of new courses, change and addition to the pool of discipline electives, change in pre requisites, change in the course description, formulation of new minor programs, curriculum redesign and running of edX courses. Ever since its inception in the campus at the beginning of the year 2014, a number of activities have been carried out. An office for the same has been established with recruitment of a Non-Teaching Staff as an Office Assistant.

The Division has also been involved in the creation of the Departmental Committee on Academics (DCA) and the ccDCA members for the Goa Campus. The division also helped to enlighten the faculty members about edX courses and the mode of delivery and various aspects related to this teaching platform and pedagogy. Various actions related to introduction of a number of the courses in the edX platform including MOOCs, curriculum appraisal, new minor programmes etc. were taken up in the past year and several more are going to be taken up in the present year as part of Departmental activities.

Two Minor Programmes, one in Physics and the other one in Economics were introduced in the year 2016 by their respective departments.

A Number of Courses from various Departments were sent for Senate Approval in the Year 2016-17

CURRICULUM REVIEWS HELD AT GOA CAMPUS:

The following Curriculum Reviews were conducted for the academic year 2016-17.

- Curriculum Review for Chemistry Department was conducted on 20th of April, 2016 at K K Birla Goa Campus. The Team of External Experts visiting the Goa campus comprised of Prof. Amalendu Chandra, Department of Chemistry, IIT Kanpur, Prof. Samaresh Bhattacharya, Department of Chemistry, Jadavpur University, Prof. J. M. Khurana, Department of Chemistry, Delhi University and Dr. Vilas Dahanukar from Dr. Reddy's Laboratories Ltd.
- Curriculum Review for Computer Science and Information Systems (CS & IS) was conducted on 27th of August, 2016 at K K Birla Goa Campus. The Team of External Experts who visited our campus comprised of Prof. C Pandurangan, Department of Computer Science and Engineering, Indian Institute of Technology, Madras, Prof. Y.N. Srikant, Department of Computer Science and Automation, Indian Institute of Science, Bangalore and Dr. HemaGopal, Vice President, Tata Consultancy Services Limited, Chennai.

ACADEMIC RESEARCH DIVISION

First Degree Thesis off Campus list Second Semester 2015-2016

S.No	Name of the student	ID No	Place of thesis work
1	Bhavan Jasani	2011B5A3305G	Nanyang Technological University, Singapore
2	Vaishnavi Narayanan	2011B4A8547G	National University Of Singapore, Singapore
3	Harikrishna Valiyath	2012A8PS383G	Absentia Virtual Reality Private Limited, Thane
4	Nihanth Subramanya	2012A3PS151G	Mozilla Corporation, USA
5	Vrushali Prasade	2012A3PS219G	Absentia Virtual Reality Private Limited, Thane
6	R. Sumukh	2012A3PS152G	Solar Energy Research Institute Of Singapore, National University Of Singapore, Singapore
7	Geethika P	2012B2PS619G	Monash University, Melbourne
8	Chirag Vartak	2012A3PS242G	IIIT Hyderabad
9	Sumit Tiwari	2011B4A8559G	Duronto Tech Pvt Ltd (Travelkhana.com), New Delhi
10	Sanjukta Krishnagopal	2011B5A4438G	Technische Uiversitat Berlin
11	Prajwal V P	2011B5A3096G	National Centre for Radio Astrophysics, Pune
12	Cariappa K S	2011B5A3440G	BITS- Pilani, Rajasthan

S.No	Name of the student	ID No	Place of thesis work
13	Ganesh R	2011B3A3323G	Abdul Lateef Jameel Poverty Action LAB(J-PAL) South Asia at IFMR, Chennai
14	Abhishek Saikia	2011B3A1372G	Capital Float (Zen Lefin Pvt Ltd),Bangalore
15	Mudit Badlani	2011B3A1262G	PDPM Indian Institute of Information Technology,Design and Manufacturing, Jabalpur
16	Shivesh Anand	2011B2A3637G	Khademhosseini Lab, Harvard-MIT Health Sciences & Technology, US
17	Abhishek Kumar Annamraju	2012A3PS118G	Tata Elxi Ltd. Bangalore
18	Anirudh Ravichandran	2011B4A3556G	Telecom Paristech,France
19	G.Amit Jamadagni	2011B4A3620G	Fudan University,China
20	Raunaq Vohra	2011B4A8521G	Tractable Ltd,United Kingdom
21	Prodyumna Kumar Mohanta	2012A4PS256G	National Tsing Hua University,Taiwan
22	Neeraj Joshi	2012A4PS336G	Spinny, Yellow Drive Technologies Pvt ltd (Gurgaon, India)
23	Arpan Agrawal	2012A4PS203G	MSAS, Ecoworld Bengaluru (India)
24	Shriniket jakati	2011B5A4459G	Tirupati packaging, Daman
25	Chawla Karan Gansham	2012A4PS338G	National university Of Singapore, Singapore
26	Jiten saini	2010A4PS538G	Shapecrunch Technology pvt ltd, New Delhi
27	Prabhadatta Das	2010A4PS660G	MeraDoctor(Health Ventures Private ltd), Maharashtra
28	MVS Sai Revanth	2012A4PS238G	SMS India, Gurgaon
29	Sanjeev Kannan	2012A4TS169G	Alstom transport Andhra pradesh
30	Keya ghonasyal	2011B4A4604G	IIT Bombay
31	Hrishikesh Joshi	2011B2A4589G	Nanyang Technological University,Singapore
32	Aditya Kandaswamy Aiyer	2011B5A4412G	TIFR Hyderabad
33	Jaya Tiwari	2011B4A4554G	IIT Kanpur
34	Aditya Sunil Joshi	2012A7PS004G	IIT Madras
35	Ritesh Kumar Singh	2012A7PS072G	Department of computer science & Information Technolgy University of Leipzig, Germany
36	Vandan Phadke	2012A7PS006G	Edurance International Group, Mumbai
37	Shubham Maheshwari	2011B5A3295G	Indian Institute Of Science, Bangalore
38	Bhavul Gauri	2011B4A7439G	Edurance International Group
39	Anshu Aviral	2011B5A7289G	Carnegie Mellon University,Pittsburgh USA
40	Palash Karia	2012C6PS 606G	MARA Studios Pvt. Ltd. Bangalore
41	Sugandhita	2011B1A8674G	IIS Bangalore
42	Manasi Prashant Kane	2011B1A8460G	Ecole Polytechnique Federale de Lausanne, Switzerland
43	Aditya Khanduri	2011B1A3679G	Niki.ai(Techbins Solutions pvt Ltd. Bangalore)
44	ADITYA AGARWAL	2011B5A4433G	IIIT Hyderabad
45	Shardul Bhusari	2011B1A4666G	NTU, Singapore
46	Anurag kashyap	2012C6PS461G	NTU Singapore
47	Kunal Bajpai	2012A7PS075G	Center for Development of Adanced Computing, Pune
48	Amrita Suresh	2012A7PS054G	IIT, Bombay

S.No	Name of the student	ID No	Place of thesis work
49	Akshay Pai Raikar	2011B2A4651G	Ben Gurion University of the Negev, Israel
50	Meera Haridas	2011B2A1043G	Louisiana State University, USA
51	Ankur Agarwal	2011B4A4400G	Neurorobotics Laboratory, Beuth Hochschule fur Technik Berlin Germany
52	Madhuri R Iyer	2011B4A4467G	Aker Powergas Subsea Pvt Ltd, Pune
53	Devansh Mehta	2011B4A4026G	Gala Precision Engineering Pvt Ltd, Thane
54	Nipun Thammatam	2011B3A8495G	ISRO, Bangalore
55	Abhinav Gupta	2011B2A7611G	Carnegie Mellon University, USA
56	Tushar Nagarajan	2011B5A7432G	SERC, IISC, Bangalore
57	Nishanth Chandrasekhar	2011B5A3365G	Iisc, Bangalore

First Degree Thesis on Campus list Second Semester 2015-2016

S.No	Student Name	ID No	Faculty Name	Organization
1	Kalpita Bakal	2012A4PS245G	Dr. Shibu Clement	Bits Pilani K.K Birla Campus
2	Saurabh A. Mahindre	2011B2A3658G	Dr. Sukanta Mondal	Bits Pilani K.K Birla Campus
3	Rituparna Ghosh	2012A7PS109G	Dr. Biju K Raveendra	Bits Pilani K.K Birla Campus
4	Mohana Bhattacharya	2011B2A7541G	Dr. Neena Goveas	Bits Pilani K.K Birla Campus
5	Sanskriti Dawle	2012A7PS083G	Dr. Neena Goveas	Bits Pilani K.K Birla Campus
6	Aman Karan Srivastava	2012A7PS126G	Dr. Neena Goveas	Bits Pilani K.K Birla Campus
7	Divya Verma	2011B1A8678G	R. Femi	Bits Pilani K.K Birla Campus
8	Shivank Mehra	2011B5A8292G	Dr. Veeky Baths	Bits Pilani K.K Birla Campus
9	Akash Deep Singh	2012A8PS321G	Dr. Nitin sharma	Bits Pilani K.K Birla Campus
10	Rajat Mishra	2011B4A7564G	Dr. Radhika vathsan	Bits Pilani K.K Birla Campus
11	Mehta Deven Atul	2012A8PS384G	Dr. Debasis Patnaik,	Bits Pilani K.K Birla Campus
12	Animesh Choudhary	2012A3PS137G	Dr. Debasis Patnaik,	Bits Pilani K.K Birla Campus
13	Himanshu Jethani	2012A8TS364G	Dr. Mridula Goel,	Bits Pilani K.K Birla Campus
14	Sumit Jain	2012C6PS430G	Dr. Debasis Patnaik	Bits Pilani K.K Birla Campus
15	Mihir Kakrambe	2011B5A7437G	Mr. T.S.R.K. Prasad	Bits Pilani K.K Birla Campus
16	Palash Dhir	2011B2A4630G	Dr. Varinder Singh	Bits Pilani K.K Birla Campus
17	Adheesh Bhatia	2011B4A3535G	Dr. Tarkeshwar Singh	Bits Pilani K.K Birla Campus
18	Alwin Michael Tomy	2011B4A1588G	Dr. Saibal Ganguly and	Bits Pilani K.K Birla Campus
19	Ronit Dutta	2011B3A8492G	Dr. Debasis patnaik	Bits Pilani K.K Birla Campus
20	Abhinav Arora	2011B1A4680G	Dr. Raviprasad Aduri	Bits Pilani K.K Birla Campus
21	Kajal Varma	2012A7PS009G	Dr. Santonu Sarkar	Bits Pilani K.K Birla Campus
22	Anmol Anand Panda	2012A7PS123G	Dr. Neena Goveas	Bits Pilani K.K Birla Campus
23	Shaurya Garg	2011B1A8691G	Dr. Arnab Banerjee	Bits Pilani K.K Birla Campus
24	Sarweshwer Gupta	2011B2A1595G	Dr. P. Bhavana	Bits Pilani K.K Birla Campus
25	Sushruth S	2012A7PS014G	Dr. Neena Gveas	Bits Pilani K.K Birla Campus
26	Onkar Suhas Samant	2012C6PS413G	Mr. Rajendra Kumar Roul	Bits Pilani K.K Birla Campus
27	Anugu Venkata Saith Reddy	2012C6PS468G	Mr. Rajendra Kumar Roul	Bits Pilani K.K Birla Campus
28	Anish Chattaraj	2012A1PS758G	Debasis Patnaik	Bits Pilani K.K Birla Campus
29	Kunal Konde	2012A8PS731G	Debasis Patnaik	Bits Pilani K.K Birla Campus
30	Abhinav Kumar Pandey	2012A4TS291G	Dr. Shibu Clement	Bits Pilani K.K Birla Campus
31	Vishakha Gupta	2011B5A3258G	Dr. Ram Shankar Patel	Bits Pilani K.K Birla Campus
32	Sundar Ganesh	2011B5A4313G	Dr. Shibu Clement	Bits Pilani K.K Birla Campus
33	Kailash Meiyappan	2012A7PS025G	Dr. Prabal Paul	Bits Pilani K.K Birla Campus

34	Samarth Kishnani	2012A4PS253G	Dr. Varinder Singh	Bits Pilani K.K Birla Campus
35	Krishna Gupta	2012A1PS531G	Dr. Jegatha Nambri Krishnan	Bits Pilani K.K Birla Campus
36	Shubham Gupta	2012A8PS683G	Dr.R.P.Pradhan	Bits Pilani K.K Birla Campus
37	Prithu Bhatnagar	2011B5TS380G	Dr. Kinjal Banerjee	Bits Pilani K.K Birla Campus
38	Ananth Narayan	2012A7PS507G	Dr.Prabal Paul	Bits Pilani K.K Birla Campus

First Degree Thesis on Campus list Fiest Semester 2016-2017

S.No	Student Name	ID No	Faculty Name
1	Abhinav Gupta	2013A8PS480G	Prof. Neena Goveas
2	Aditya Dave	2013A3PS133G	Dr. K.R.Anupama
3	Mohit Menghani	2013A3PS128G	Prof. M.K.Deshmukh
4	Akshar Gupta	2012B4A3737G	Dr. J.K.Sahoo
5	Swapnil Milind Mhatre	2012B5A8366G	Dr. E.S.Kannan
6	Varun Mathur	2013B5PS418G	Dr. Kinjal Banerjee
7	Kevin Abraham	2012B5A7530G	Dr. Radhika Vatsan
8	Sagnik Bhattacharya	2012B5A4329G	Dr. Prasanta Kr. Das
9	Shaikh Saif	2013A4PS183G	Dr. Neena Goveas
10	K. Balaje	2012B4A4443G	Dr. P dhanumjaya
11	Ankit Nanda	2013A4PS383G	Dr. Shibu Clement
12	Shubham Maheshwari	2013A4PS217G	Dr. Sachin Waigaonkar
13	Hajare Apurv Bhaskarrao	2013A4PS391G	Dr. Sachin Waigaonkar
14	Anuraag Gupta	2012B1A4594G	Dr. Sukanta Mondal
15	Prasun Anad	2012B1A1645G	Dr.Veeky Baths
16	Ankur Madiyan	2012B3A8440G	Dr.Debdulal Thakur
17	Tushar Singh	2012A3PS132G	
18	Shrey Pareek	2012B5A8276G	Dr. Anita Agrawal
19	Dharm Skandh Jain	2013A7PS696G	Dr.Raviprasad Aduri
20	Sanket Rajan Gupte	2013A7PS078G	Dr.Raviprasad Aduri
21	Neha Garg .	2013A8PS417G	DR.Gautam Bacher
22	Rempa I s Chaitanya .	2013A8PS831G	Dr.Chandram K
23	Kandregula S.S.Priyanka	2012B4A7616G	Dr.Prabal Paul
24	Krishnan G	2012A4A7207G	Dr.Aswin Srinivasan

First Degree Thesis Off Campus list First Semester 2016-2017

S.No	Name of the student	ID No	Place of thesis work
1	Parag Jain	2013A1PS585G	Uttar pradesh Expressway industrial Development Authority, Lucknow
2	Prithiv Natarajan	2013A1PS823G	Technische Universitat Braunschweig,
3	Devdutt Sharma	2012B5A1727G	IIT, Kharagpur
4	Vijit Maithel	2012B5A4716G	IISc, Bangalore
5	Akshay biniwale	2012A4B5299G	NUS, Singapore
6	M Ashwin Krishnan	2012B5B4247G	Radboud University, Nijmegen, Netherlands
7	sahil Tapiawala	2012B2A3495G	Singapore University of Technology and Design

S.No	Name of the student	ID No	Place of thesis work
8	Shashwat Verma	2012B2A4638G	NUS, Singapore
9	siddhant Baweja	2012B5A4548G	IIIT, Hyderabad
10	Joshi Kushal Rajendra	2013A4PS136G	NUS, Singapore
11	Sukirt	2013A4PS243G	IIT, Bombay
12	Kevin Agrawal	2013A4PS254G	IIT, Bombay
13	Hemaditya Malla	2013A4PS397G	Nanyang Technological University, Singapore
14	Parth Thakkar	2013A4PS022G	IIT, Kharagpur
15	Harnoor Singh	2013A4PS059G	IIT, Kharagpur
16	Aastha Shah	2013A4PS377G	Technische Universitat Braunschweig,
17	Sanmit Mukund more	2012B5A4717G	IIT, Bombay
18	Ambareesh Rathi	2012B4A4412G	Tu Delft, Netharlands
19	Sanath Keshav	2013A4TS359G	Barcelona Supercomputing Center, Spain
20	Bhavya Aggarwal	2012B3A8411G	centre for International Trade & Development, New Delhi
21	Siddharth Sankaran Dinesh	2012B3A7519G	National Institute of Informatics, Japan
22	Chirag shekhar	2012B4A3545G	Institute of Econometrics , Westfalische Wilhelms-Universitat, Muenster
23	Shreyas Rajagopal	2012B4A4726G	IIT, Bombay
24	Rahil Parikh	2012B1A3696G	Politecnico Di Torino, Italy
25	P. Bharath Srinivas	2012B1A3700G	Technische Universitat Dresden
26	Varun chopra	2012B4A4517G	BIAS, Bremen, Germany
27	Karthik Srinivasan	2012B1A4652G	California Institute of Technology, Pasadena
28	Janani Durairaj	2012B1A7735G	Wageningen University, Netherlands
29	Radhika Nikam	2012B5A3427G	NUS, Singapore
30	Samyukta Ramnath	2012A3B5038G	Technische Universitat, Ilmenau
31	T Sai Ruthvik	2013A8PS489G	Institute Superieur D'electronique de ,Paris
32	Janvi Palan	2012B4A3712G	Politecnico Di Torino, Italy
33	Achint kumar	2012B5A3325G	Carleton University, canada
34	K S Bhargav Ram	2013A8PS145G	IIT, Bombay
35	Mandar Pradhan	2013A3PS008G	IISc, Bangalore
36	Syed Shamoail Haque	2013A8PS708G	Peeply Technologies pvt Ltd. Socialcops, New Delhi
37	Aayush Attri	2013A8PS378G	Carnegie Mellon University, Pittsburg
38	Pritish Gautam Nahar	2013A3PS148G	NUS, Singapore
39	Shubham Sandeep Sarwate	2013A3PS316G	Carnegie Mellon University, USA
40	Tanvi Nitin Jadhav	2013A3PS305G	Technische Universitat Braunschweig, Germany
41	Devansh Raj	2012B1A3662G	AU-KBC Research Centre, Chennai
42	Naman Gupta	2012B3A8498G	University of california, San Diego
43	Ketan Pant	2013A8PS413G	IISc, Bangalore
44	Anusha Kamat	2013A8PS453G	PESIT, Bangalore
45	Riddish Umesh Pandharkar	2012B2A3579G	Freie Universitat, Berlin
46	Ameya Riswadkar	2012A3B5042G	TIFR, Mumbai
47	Kshirsagar Rutuja Milind .	2012B4A3711G	University of Hyderabad
48	Abhay Sarda .	2012B2A3547G	Solar Energy Research Institute, Singapore
49	Yerramilli Subramanya Vamsi	2013A8PS303G	First green Pvt Ltd, Gurgaon
50	Savant Apoorva Avadhoot	2012B5A8419G	IIT, Bombay
51	Aashima Garg	2012B3A8464G	IIIT, Bangalore

S.No	Name of the student	ID No	Place of thesis work
52	Srikrishna V	2013A3PS244G	ParallelDots, Haryana
53	Siddharth Gupta	2013A7PS017G	University of Edinburgh
54	Yash Shirish Kasture	2012B4A7571G	University of Helsinki, Finland
55	Rohith.R	2013A7PS124G	Nanyang Technological University, Singapore
56	Bhargav Srinivisa Desikar	2013A7PS053G	INRIA Modal, France
57	Siddhartha Govilkar	2012B4A4452G	IIT Madras
58	Sumit Kumar	2012B1A1650G	JNU, Delhi
59	Hardik rajesh Hingorani	2012B2A1636G	Nanyang Technological University, Singapore
60	Aayush Chaturvedi	2012B3A8248G	Institute for Social and Economic change, Bangalore
61	Abhishek Srivastava	2012B4A7756G	Technische Universitat Munchen, Germany
62	Mohak Chadha	2012B4A7524G	Technische Universitat Dresden
63	Shreyash Mohatta	2012B4A7421G	TCS Innovation Labs, Gurgaon
64	Tanmay Netke	2012B2A1610G	Nanyang Technological University, Singapore
65	Roshan M Regy	2013A1PS646G	IIT, Madras
66	Vibha Nasery	2012B2A8639G	IISc, Bangalore
67	Shivesh Anand	2011B2A3637G	Harvard-MIT, Cambridge
68	N Bittu	2012B5A3514G	Quazar Technologies Pvt Ltd, New Delhi
69	S RamanaSubramanyam	2013A8PS467G	Telecom Paristech, Paris, France
70	Priyanka Bedarkar	2012B2A7586G	IISc, Bangalore
71	R.Srinath	2012B5A7560G	Vrije Universiteit Brussel, Belgium
72	Sraddha Barke	2013A8PS344G	TIFR, Mumbai

Second Semester 2015-2016 M.E. (BITS G629T) "DESSERTATION"

S.No.	ID No.	Name of student	Topic	Supervisor	Place
1.	2014H140037G	Dattatray Londhe	Over the air Programming of WSN mute Platform, with minimal turn off network time.	Prof. K.R Anupama	Bits Pilani K.K Birla Campus
2.	2014H123031G	Kundan Kumar	GNSS Receiver Design	Dr. Nitin Sharma	Bits Pilani K.K Birla Campus
3.	2014H129002G	Sundram S	In silico analysis of animal toxin target interactions	Sukanta mondal	Bits Pilani K.K Birla Campus
4.	2014H103020G	Prateek Khandelwal	Refactoring of GPU Kernels for optimal performance and verification	Prof Santonu sarkar	Bits Pilani K.K Birla Campus
5.	2014H103018G	Avi Bhargava	Understanding and implementation of machine learning algo. for detection of unknown malware	Dr S.k Sahay	Bits Pilani K.K Birla Campus
6.	2014H103016G	Indrajeet Khandekar	Efficient implementation of developed algo. For detection of unknown malware	Dr S.k Sahay	Bits Pilani K.K Birla Campus
7.	2014H103019G	Prashant	Energy Efficient Scheduling in multicore multi processor or RTS	Dr Biju K.R	Bits Pilani K.K Birla Campus

S.No.	ID No.	Name of student	Topic	Supervisor	Place
8.	2014H103023G	Alen K shabu	Performance improvement of multicore scheduler in homogenous and heterogenous systems	Dr Biju K.R	Bits Pilani K.K Birla Campus
9.	2014H101010G	Anubha Deo	Rheology of Poly-layered silicate clay nano composite	Dr. Asima Shaukat	Bits Pilani K.K Birla Campus
10.	2014H101015G	Narendra Chundi	Kinetics and Thermodynamics of gas hydrate systems	Dr. Srinivas Krishnaswamy	Bits Pilani K.K Birla Campus
11.	2014H101011G	M. Dileep	Dynamic Matrix Control of a chemical system	Prof. Saroj S. Baral	Central salt and Marine Chemicals Research Institute, Gujrat
12.	2014H101013G	Geeta Dasila	Synthesis and Characterization of hydroxyapatite based sustained release nano fertilizer	Prof. Sutapa Roy Ramanan	Bits Pilani K.K Birla Campus
13.	2014H101012G	Haiom	Removal of Diclofenac sodium from waste water using adsorption process	Prof. S. D. Manjare	Bits Pilani K.K Birla Campus
14.	2014H101009G	Mohit Tiwari	Optimizing Biogas from waste water by anaerobic digestion	Prof. S. S. Baral	Bits Pilani K.K Birla Campus
15.	2014H123032G	Rahul Jaiswal	Statistical forecasting of Solar irradiance data analysis	Dr.Wilfred Walsh	NUS, Singapore

First Semester 2016-2017 M.E. (BITS G629T) "DESSERTATION"

S.No.	ID No.	Name of student	Topic	Supervisor	Place
1.	2015H101008G	Shubhangi Singh	Hybrid Desulfurization of high sulfur Indian coal	Dr. Srinivas Krishnaswamy	Bits Pilani K.K Birla Campus
2.	2015H101009G	Shah Manovi Tailap	Molten Salt gasification of carbonaceous materials	Dr. Srinivas Krishnaswamy	Bits Pilani K.K Birla Campus
3.	2015H101014G	Subrejha J	Multilevel inferential control of reactor producing ethanol	Dr. Dhanya Ram V Dr. Saibal Ganguly	Bits Pilani K.K Birla Campus
4.	2015H101006G	Krupa Balakrishnan	Graphene Composite coatings for anticorrosion behaviour	Prof. Sutapa Roy Ramanan	Bits Pilani K.K Birla Campus
5.	2015H101007G	Vinay Kaushik	Effect of shapes and size of magnetic hydroxyapatite	Prof. Sutapa Roy Ramanan	Bits Pilani K.K Birla Campus
6.	2015H101010G	Rushabh Ketan Mevawala	Microwave assisted beneficiation of iron-ore	Dr. Saroj Baral	Bits Pilani K.K Birla Campus
7.	2015H101013G	Bhati M Khavir M Khalid	Tribological (lubrication) behaviour of biogreases	Dr. Asima Shaukat	Bits Pilani K.K Birla Campus
8.	2015H101011G	Shaifali Tyagi	A study of rheological dynamics exhibited by biogreases	Dr. Asima Shaukat	Bits Pilani K.K Birla Campus

CATEGORY-WISE DISTRIBUTION OF Ph.D. STUDENTS ON ROLLS DURING THE YEAR 2016

S.No.	CATEGORY	NO. OF STUDENTS ON ROLL
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		II Sem 2015-2016	I Sem 2016-17
1.	Staff	26	23
2.	Staff (Pre-Ph.D course work)	0	0
3.	Research Scholars	141	159
GRAND TOTAL		167	182

I. Statistical Information for Ph.D. Programme

Sem.	Permitted to Appear in Quali. Exam.	Appeared	Passed	Failed
II Sem. 2015-16	16	16	15	01
I Sem. 2016-17	34	34	32	02
Total	50	50	47	03

II. Statistical Information for Faculty Development Scheme

Sem.	Permitted to Appear in Quali. Exam.	Appeared	Passed	Failed
II Sem. 2015-16	0	0	0	0
I Sem. 2016-17	05	05	04	01
Total	05	05	04	01

III. Analysis of candidates permitted to appear in Ph.D. qualifying examination

(i)	BITS Faculty (Total)	(ii)	Aspirants of High Standing and proven competence (Total)	(iii)	Full time Students (Total)
	05		0		45

Discipline wise Break-up		Discipline wise Break-up	
EEE	1	Biosciences	09
		Chemistry	05
		Chemical	02
		EEE	07
		Mathematics	02
		Mechanical	09
		CSIS	07
		Lang. & Hum.	05
		Management & Eco &Fin.	02
		Pharmacy	0
		Physics	02
		Civil	0

COMMUNITY WELFARE**Faculty in charge: Prof. Radhika Vathsan, Department of Physics.**

The Community Welfare Unit facilitated the following activities during the calendar year 2016.

The Medical Centre has been providing OPD services as well as 24 x 7 emergency medical services to all the campus residents. A 24x7 ambulance service is also available. An in-house pharmacy is available at

the medical centre and a lab collection point to provide diagnostic facilities has been functional with a tie-up with a local diagnostic laboratory, Ranbaxy and Thyrocare. The Medical Centre has state-of-the-art equipment such as Dental Chair, Digital X-ray machines, Tread mill (TMT), ECG machine, Lung function test, X-ray, Multiparameter monitors, Defibrillator, Syringe pumps.etc

A Cashless Medical Reimbursement Scheme has been operational to provide easily accessible medical care to the residents of the campus. The Scheme can be accessed through a health card, which can also be used to receive treatment for various medical and surgical ailments from the Specialists from Goa. Following are the specialties available for routine and on call basis for out-patient care – Gen. Medicine / Gen Surgery / Orthopaedics / Dermatology.

Drinking water hygiene on campus is maintained by periodic testing of water at all the water coolers installed in food outlets, hostels and administrative buildings. Water testing from a few crucial points for the campus supply is also being implemented.

The Child Care Centre on campus is operating as a playschool for infant children in the morning and a Day Care in the afternoon for providing invaluable support and care to the children of BITS faculty and staff. The center is run by 4 dedicated staff assisted by 3 maids. It is provided with all necessary facilities (toys, activities, educational material, infrastructure with outdoor play area, etc.). In addition, campus children are exposed to a variety of activities such as drawing, dance, karate, violin, roller-skating and mental arithmetic, for which classes by professionals are being conducted.

The Student Activity Center, apart from providing sports and wellness facilities to the students and campus residents, also has a designated as Music/Yoga/prayer hall that is being well utilized by the whole campus community. Various activities such as yoga and meditation, chanting of Vishnu Sahasranama, Sunderkand Path, Conducting of Holy Mass and choir practice. Classes for Hindustani music, Carnatic music, Western classical music, violin and guitar, as well as Bharatanatyam, Zumba etc are also being conducted.

The SAC also houses musical instruments including violins, sitars, tanpuras, veenas, tablas, harmoniums, electronic tanpura and tabla, and keyboards. Many books on music are kept there for reference of the students, taken on loan from the Central Library. The unit also facilitated procurement of new instruments and repair of old ones for the students' Music Club.

National and religious festivals like Republic day, Independence day, Lohri, Basant Panchami (which is also BITS Pilani Founder's Day), Holi, Ram Navami, Janmashtami, Ganesh Chaturthi, Onam, Durga Pooja, and Deepavali were celebrated with active participation of all the campus residents and students. During these festivals cultural performances of campus children and students were organized.

This year, a new initiative on forming a Socio-Cultural Association of teaching and non-teaching staff materialized. The aim was to create an appropriate forum to inform and promote faculty, NT staff and their family members' involvement in various activities, initiatives and efforts at the campus, regional, national and international levels. The Association was received with great enthusiasm by campus members. A core committee formed of members of teaching and non-teaching staff came up with activities planned for the comingling of all staff. An end-semester dinner-cum-cultural event "Sangam" was organized on 7 May. It received enthusiastic participation in the form of cultural shows by staff, faculty and children. On 11 December, a "Fun Fair" was organized where staff members put up stalls of eats, drinks and handicrafts. There were fun and games, karaoke and spot prizes and the whole campus responded with great enthusiasm.

Srutilaya, the Indian Classical Music and Dance Society of the campus, also organized a variety of events. On 27 February, in association with ICCR, we presented an Odissi Dance concert by renowned exponents Shri Udaykumar Shetty and Smt Soumya Shetty, trained under the rich tradition of Shri Kelucharan Mohapatra. This performance was preceded short Bharatanatyam recital by Ms Sruti Balaj, PhD student with the Biology Dept, BITS Goa. On 28 February, we organized Thyagaraja Aradhana in which students, alumni and club members render Saint Thyagaraja's compositions as a tribute to him. On 2 October, we had a Veena Recital by Dr. Radhika Vathsan. On 15 October was Sursangam, a tribute concert to Prof. Suresh Ramaswamy one of the founding fathers of Srutilaya. Renowned artists perform in these events many of who are alumni. In this year's event we had Ustad Bahauddin Dagar on the Rudra-veena with Sanjay Pant Agle on Pakhawaj. It was preceded by Carnatic vocal by Alumni Sreecharan S., accompanied by Ramanujan N. on Mridangam and Pranav Palande on harmonium.

International Yoga Day was observed on 21 June with a lecture demonstration and live yoga session in the SAC.

Quark 2016, the 3-day annual techno-management festival, was held in February. Inaugurated by Mr Shail Maniar, VP and MD, Sabre India, more than 1500 participants battled it out in various techno-management events as well as gaming and literary events. Workshops and exhibits drew large crowds. The speakers inspired the young minds, and the performances were a great way to end each fun-filled day.

In March, SPREE, the annual sports festival, stood testimony to some high-intensity games, good sportsmanship, and entertainment.

Waves 2016, the annual students' intercollege cultural festival was celebrated in November.

Student volunteers under the banner of Abhigyaan have been regularly holding classes in basic subjects for the underprivileged: children from Birla slums, of the security guards, gardeners and mess workers of the campus, and some special children. They organized a "Joy of Giving" (JoGW) week and a collection drive for donating used clothes and other articles to orphanages and old age homes. They also organized a "no food wastage" day in the messes on this day.

Wildlife enthusiast Benhail Antao, who is also an expert on snakes, came to campus for an interactive session. SLITHERS, as it was called, was a snake awareness program for all students and faculty, wherein everyone learnt about snakes found in and around the campus, how to handle them, and snake bite first-aid.

A beach cleanup drive was organised as a part of the Joy of Giving Week (JoGW), in association with NIRMAAN. Nirmaan has also conducted various events to recognize, thank and include the service communities in and around the campus, including the teachers, security guards, cleaning personnel etc. They organized a blood donation camp on campus and a free eye-checkup camp for the dwellers of Birla. They held career counseling and general awareness sessions in Birla, as well as "Street of Joy" and sky watching sessions with them.

INTERNATIONAL PROGRAMMES AND COLLABORATION DIVISION

The objectives of the International Programmes and Collaborations division are as follows

- Identify and collaborate with 2 or 3 universities for large scale, high impact student and faculty exchange (100 students and 25 faculty members in 3-4 years)
- Work with other divisions to facilitate projects funded by international agencies
- In this regard, MoU was signed after delegation visit to partner university on both the sides.
- Two co operations are currently active
- Associated Partner in *Erasmus Mundus* Joint Master Degree (JMD) programme

Excellence in Analytical Chemistry (EACH).

Partner in Erasmus + programme. Fully funded programme for 1 student visit for 5 months and 1 faculty visit for 7 days to Univ of Tartu and 1 faculty visit for 7 days and two students for 5 months each to Goa campus.

MoUs were also signed with

- **University of Perpignan**
- **University of Limoges, France**
- **University of Newcastle, Australia**
- **University of Tunghai, Taiwan**
- **The Great St.Petersburg Polytechnic University, Russia**

Department of Economics and International Programmes and Collaboration division of BITS

Pilani K K Birla Goa campus jointly organized EURAXESS Information Session on Friday 25th September 2015 at BITS-Pilani, K K Birla Goa Campus. The Objectives of the event were

The speakers were Dr.Vivek Dham EU Delegation to India, Dr.Srini Kaveri Director - CNRS Dr.Sandrine Maximillien, Scientific Attache - Embassy of France Dr.Arhets Phillippe, Scientific Attache - Embassy of France Mrs.AinhitzeBB, Country Coordinator Euraxess

158 participants attended

Collaboration with Labfab

- Goa campus in collaboration with French Embassy hosted Mr. Nicolas Hutchet who has a prosthetic hand developed at Labfab, France. He participated in Students Tech Festival – Quark
- Mechanical Engineering Department developed a prosthetic hand in collaboration with Labfab, France
- Thomas Meghe, Research Engineer from Labfab, France was invited for further discussions
- Associate Dean IPCD and Mr. Thomas Meghe attended a brainstorming session at French Embassy, Mumbai.

French Embassy interested to collaborate with us on developing Labfab.

Invited Talks

- Dr. Srinivasa Kaveri, Director, Bureau CNRS, New Delhi, India, Gave a talk on 'Antibodies : The story of Good and Bad Samaritans' on 19th September, 2016.
- Prof Paul Bishop, Dean of Engineering Sciences at University of Rhode Island, Gave Talk on 'The Future of Environmental Micro sensing' and 'The Impact of the Water: Energy Nexus on Water and Energy in the Near Future' on 21st and 23rd November, 2016 respectively.
- Prof. Florent Chazarenc, Ecole des Mines de Nantes, France Gave Talk on 'Use of treatment wetland systems for water pollution control design and implementation and 'Treatment wetlands for domestic wastewater treatment : intensification vs extensification what are the trends for the future? On 23st and 25rd November, 2016 respectively.
- Prof. B.V.R Chowdari, Senior Executive Director, President's office, Nanyang Technological University (NTU), Singapore and Prof. Bo Liedberg, Dean, Interdisciplinary Graduate School, NTU addressed the Faculties and Students on 29th September, 2016

Travel Grants

Partial Travel grants were provided to selected students in both the semesters for their thesis / internships abroad.

PRACTICE SCHOOL:

During SEM II, 2015-16 and SEM I, 2016-17 522 first degree students and 18 higher degree students went for PS-II from Goa campus. The faculty members who were involved as PSII Instructor for the stations in Goa were Dr. Anita B Agarwal and Dr. Raviprasad Aduri.

During summer term 2016, total of 602 students went to 141 PS-1 stations from the Goa campus. A total number of 16 faculty members & 15 student co-instructors accompanied the students for PS-1. Total no. of stations opened by Goa campus students are 13.

PS 1-2016 Faculty Members

SR.NO	PSRN	FACULTY NAME
1	56	VARINDER SINGH
2	112	SHALINI UPADHYAY
3	298	K P. JAYADEVAN
4	310	SAROJ S. BARAL
5	343	AMIT SETIA
6	416	JAJATI KESHARI SAHOO
7	502	ETHIRAJULU SENTHAMARIA KANNAN
8	511	ALPESH M DHORAJIA
9	541	RAYSON K. ALEX
10	551	GAVAX JOSHI
11	618	ANOOP GEORGE
12	633	SHASHIDHARA KOTIAN
13	637	PRADEEP BOGGARAPU
14	652	VINAY BUDHRAJA
15	653	ABHILASH KUMAR TILAK
16	654	RAVINDRA SINGH SALUJA

PS-1-2016 Student Co-Instructors

Sr. No	ID	NAME
1	2012PHXF016G	YOGESH WALAWALKAR
2	2012PHXF011G	ASHU SHARMA
3	2012B5A4717G	MORE SANMJIT MUKUND
4	2015PHXP007G	RIYANKA SWAIN
5	2013B2A8770G	AKSHAY KUMAR JHA
6	2013B3A7309G	ABHIJITH S WARRIER
7	2013A8PS862G	TANISHA SHARMA

Sr. No	ID	NAME
8	2013A8PS496G	PRANAV KUMAR
9	2015PHXP014G	JOSEPH FERNANDES
10	2013B3A7710G	PIYUSH DHINGRA
11	2013A4PS180G	GRANDHI CHINNI VENKATESH
12	2013B2A8941G	D. AKHILA DEVI
13	2014H101012G	HARIOM
14	2013B4A7381G	PANKAJ TIPLE
15	2012B1A4652G	KARTHIK SRINIVASAN

PUBLICATIONS DIVISION:

The Publications Division published the BITScan Semester Newsletter Issue 12 and 13 and the Convocation Proceedings 2016 in this year. The division also regularly sent Press Releases to National and local media after every Campus event. The website Banner News and Latest News were also updated regularly with current events. Various student achievements, campus events and significant research projects were published in Local and National media

PUBLIC RELATIONS:

Public Relations office coordinated following events:

S.No.	Topic	Date	Requested by
1	University Review	5 th - 7 th Jan 2016	Dean's Office
2	Campus visit - Prof. D P Singh, Director, NAAC	14 th - 18 th Jan 2016	Director's office
3	TEDx 2016	24 th - 26 th Jan 2016	Director's office
4	IIChe Inaugural Function - Prof. MM Sharma, Padma Bhushan	5 th - 6 th April 2016	Prof. Saibal Ganguly
5	CCFAC Meeting	29 th April - 3 rd May 2016	Dean's Office
6	Shiv Yog Shivir 2016	28 th May - 6 th June 2016	PR Office
7	Quiz competition- MaRRS Wordmaster Pvt Ltd	15 th June 2016	PR Office
8	Convocation 2016 Chief Guest: Hon. Defence Minister of India, Shri Manohar Parrikar	7 th August 2016	Director's Office
9	Coalescence 2016	4 th - 5 th Sept 2016	Dr. Mridula Goel
10	National Symposium: Digital Humanities, Perspectives and Challenges	9 th Sept 2016	Prof. Meenakshi Raman
11	IEEE workshop 2016	10 th - 11 th Sept 2016	Prof. Dipankar Pal
12	Campus visit by Indian Diaspora Youth - Bharat ko Jaaniye Yatra	15 th Sept 2016	Director's office
13	Inauguration of Indian Institute of Metals (IIM) Goa Chapter	25 th Sept 2016	Dean's Office
14	International Seminar & Workshop in Photography	3 rd - 6 th Oct 2016	BITSAA Office
15	Classical Musical Festival, Sursangam 2016 Performance by Ustad Baha'ud-din Dagar	15 th Oct 2016	Dr. Radhika V
16	Waves 2016- Annual Cultural Festival	3 rd - 6 th Nov 2016	Director's office
17	Symposium on 'Recent Advancements in Chemical Sciences and Research Scholar Meet-2016	11 th - 13 th Nov 2016	Dr. N N Ghosh
18	DAE School in Analytical Chemistry	15 th - 21 st Nov 2016	Dr. Sunil Bhand
19	Campus visit by Goan Diaspora Youth - 9 th Know Goa Programme	30 th Nov 2016	Director's office

B2.12 CENTRAL FACILITIES REPORT

(I) CENTRAL LIBRARY

The Library complex of BITS, Pilani – K K Birla Goa Campus comprises of a spacious building covering an area of 3512 m². It is designed to provide several reading halls and a digital library with 11 public access internet terminals for convenient internet reference, apart from a large area earmarked for books storage. The Library has been provided with a wireless network whereby users can access the internet using their laptops. The Library is equipped with modern furniture well designed taking into consideration the future growth of the Library collection and the needs of the users. Presently, it has a seating capacity of 450 which is likely to be expanded in the coming years.

The Library remains open throughout the year (except on 5 public holidays) from 09.00 am to 11.00 pm on all working days, from 9.00 am to 8.00 pm on Saturdays and from 10.00 am to 8.00 pm on Sundays and other holidays when the academic session is on. During recess and vacations, it is open from 09.00 am to 05.00 pm.

The Library web-site has been linked with the Institute home page for easy access. The home page was designed and developed by students. The Library had been using LIBSYS Library Management Software to automate all its housekeeping activities; from July 2014 a switch to LibLime Koha software system has been made. The Library Koha Web OPAC includes advanced search options for books and journals. The Library also hosts an online repository of publications of the students and faculty members of the Campus. As of 2016, these services (Koha OPAC and the repository) are accessible only while connected to the Campus intranet. In future, Internet connectivity will be offered.

The Online Portal

We have our catalogue and transactions management on the Koha server which is a FLOSS. We also are developing a repository of our own (campus-level) research output like theses and publications. Together, using FLOSS tools, we are in the process of organizing a library portal that we hope will become an academic social networking platform for the Campus. Sooner or later, this will become a component in the University-level library portal in the offing for some time. We have taken the opportunity created after the exit of a staff member to recruit a person with a technical profile instead of non-tech library professionals, in order to drive this development forward. This is a new beginning.

Acquisition and circulation

The Library collection has reached 36643 volumes, growing by 3%. The average growth in the last decade had been around 10%. The decline in this year had been foretold, during the budgeting exercise for the current FY: unfavorable exchange rate rise and aggressive price rise by journal publishers is putting pressure on the share of journals and online resources in the budget. In order to continue subscriptions to all the important content, the Library has been forced to cut down on the budget for books.

Reference Section

The Library has a good collection of reference materials, like encyclopedias and handbooks. However, a clear trend among users has emerged that is making the print versions obsolete: the rise in the use of online databases and search engines. The Library, through deliberations in the Library Committee, is planning to shift to this mode in future. Just as many journal and online content publishers are raising subscription rates, there is also a mitigating trend of free online access and shared resources. The Library is gearing up to become an efficient facilitator for accessing this online treasure trove through Koha.

Journals and Online Resources

The Library subscribes to 73 Indian Journals and 13 Foreign Journals in print, 18 online journals, 6 digital library packages for researchers of different disciplines. Digital library packages include IEL Online, ASME, ScienceDirect, AEA Journals, ProQuest, ACM Digital library. Apart from these, online access to more than 3000 journals through INFLIBNET is available to the Campus. The Library home page gives links to the resources available, for easy location and access. Useful articles, news, newspaper clippings are displayed from time to time on the notice board for the information of readers.

Other services

The Library has a collection of 35 educational video cassettes and 1342 CDs. The Library keeps the readers informed of all the books added to the Library through a regular display of new arrivals as well as updates on email. From time to time book exhibitions by publishers are arranged to facilitate faculty members selecting books for the library.

New Reading Lounge

As a part of an effort to make library a happening place on campus, a new lounge area has been designed in the library. Created with the purpose of encouraging reading, it brings a welcome splash of color to the library. A plush room boasts of comfortable couches and carpet flooring meant to dampen sound and allow discussion between students without disturbing those outside the room. These spaces play host to book discussions; in

future we want to organize author talks and more. We have earmarked exhibition spaces on the walls for displaying artwork, encouraging our Campus community's creativity. Some new installation for this purpose, including a glass-board for brainstorming and collaboration, is happening now. Reading area that welcomes younger children is also developed with couches. Our Library is an alcove of reading, collaborating and thinking.

(II) COMPUTER CENTRE

(A) Computer Hardware

No.	Make	Configuration	Number	Area of utilization
01	DELL 7010	Intel Core i7 Processor,8GB RAM,1TB HDD	22	Central Computing Labs, Various Department Labs, Faculty members and Staff members for carrying out their academic teaching and research work.
02	Dell Optiplex 9020 MT	Intel Core i7, 4th Generation, 8GB RAM, 1TB HDD	50	
03	Lenovo Edge73	Intel Core i7 Processor,8GB RAM,500GB HDD	56	
04	Dell Optiplex 3010	Intel Core i3 / i5 Processor, 8GB RAM,500GB/1TB HDD	100	
05	Dell Optiplex 990	Intel Core i3 Processor,4GB RAM,500GB HDD	49	
06	Dell Optiplex 390	Intel Core i3 Processor,8GB RAM,500GB HDD	70	
07	Dell Optiplex 380	Intel Core 2 Duo Processor,2GB RAM,320GB HDD	28	
08	Dell Optiplex 360	Intel Core 2 Duo Processor, 2GB RAM,160GB HDD	37	
09	Dell Optiplex 330	Intel Core 2 Duo Processor,2GB RAM,160GB HDD	73	
10	Dell Optiplex 755	Intel Core 2 Duo Processor,2GB RAM,160GB HDD	66	
11	HP Compaq DX2700	Intel Core 2 Duo Processor,1GB RAM,80GB HDD	56	
12	HP Pavilion P6730IN	Intel Core i3 Processor,4GB RAM,1TB HDD, DVD ROM	2	
13	IBM Thinkcentre	Intel Pentium 4 Processor,250MB RAM, 40GB HDD, CD-RW ROM	100	
14	Lenovo G510	Intel Corei5 Processor,4GB RAM,500GB HDD	22	
15	LenovoThinkPad EdgeE430	Intel Core i3 Processor,4GB RAM,500GB HDD	5	
16	Dell Latitude E5430	Intel Core i3 Processor,4GB RAM,500GB HDD	18	
17	Dell Vostro 1550	Intel Core i3 Processor,4GB RAM,500GB HDD	31	
18	Dell Vostro 2420	Intel Core i3 Processor,4GB RAM,500GB HDD	9	
19	Dell Vostro 3550	Intel Core i3 Processor,4GB RAM,500GB HDD	60	
20	Dell Vostro 3500	Intel Core i3 Processor,4GB RAM,500GB HDD	25	
21	HP Tablet PC	Intel Core i3 Processor, 2GB RAM, 500GB HDD	4	
22	HP Elite Book Tablet 2730P	Intel Core i3 Processor, 2GB RAM, 500GB HDD	1	

(B) Servers

Sl. No.	Server	Make	Qty	Configuration	OS
Network servers					
1	DNS	DELL	2	[DELL Optilex 755,Core 2 Duo 2.33GHZ, 2 GB RAM,160GB HDD]	Windows 2003
2	DHCP	DELL	2	[DELL Optilex 755,Core 2 Duo 2.33GHZ, 2 GB RAM,160GB HDD]	Windows 2003
3	LDAP	DELL	1	[DELL PowerEdge T410, Quad Core 2.26 GHz 8 GB RAM, 500 GB HDD]	Cent OS

Sl. No.	Server	Make	Qty	Configuration	OS
4	Cisco Works	DELL	1	[DELL Optilex 755,Core 2 Duo 2.33GHZ, 2 GB RAM,160GB HDD]	Windows 2000
Communication Servers					
1	Web Server	DELL IBM	3	[DELL PowerEdge T410, Quad Core 2.26 GHz 8 GB RAM, 500 GB HDD] [IBM x3650 M4 Dual Processors(6 Core),128GB RAM, 3TB Hard Disk]	Windows 2003
2	Call Manager	Cisco	2	1 GB RAM, 40 GB HDD	Windows 2000
3	SWD Server	DELL	1	[DELL Optilex 755,Core 2 Duo 2.33GHZ, 2 GB RAM,160GB HDD]	Windows 2003
4	Cyberoam Report	IBM	1	[IBM x3650 M4 Single Processors(6 Core),32GB RAM, 500GB Hard Disk]	Fedora
Academic Servers					
1	Academic FTP	IBM	1	[IBM x3650 M4 Dual Processors(6 Core),128GB RAM, 3TB Hard Disk]	Fedora
2	Staff/ Faculty FTP	IBM	1	[IBM x3650 M4 Dual Processors(6 Core),128GB RAM, 3TB Hard Disk]	Fedora
3	Mech (Ansys, MATLAB,)	DELL	1	[DELL Optilex 755,Core 2 Duo 2.33GHZ, 2 GB RAM,160GB HDD]	Windows XP2
4	Pro-E	DELL	1	[DELL Optilex 755,Core 2 Duo 2.33GHZ, 2 GB RAM,160GB HDD]	Windows 8
5	Course Management (Moodle)	DELL	1	[DELL PowerEdge T410, Quad Core 2.0 GHz,8GB RAM, 500 GB HDD]	CentOS
6	BITSAT	DELL	3	[DELL Optilex 755,Core 2 Duo 2.33GHZ, 2 GB RAM,160GB HDD]	Windows 2003
(C) COMPUTER CENTER (Central Facility)					
Central Computing Lab, Zone I	DELL 7010 [Intel Core i7 Processor,8GB RAM,1TB HDD]	22	Windows 8 and Linux Office 2010, AutoCAD Modelsim, Xilinx		
	Dell Optiplex 9020 [Intel Corei7, 4th Gen, 8GB RAM, 1TB HDD]	50			
	Lenovo Edge73 [Intel Core i7,8GB RAM,500GB HDD]	28			
Central Computing Lab, Zone II	Dell Optiplex 3010 [Intel Core i3 / i5, 8GB RAM,500GB/1TB HDD]	60	Windows 8 and Linux, Office 2010, AutoCAD Modelsim, Xilinx		
	Dell Optiplex 990 [Intel Core i3,4GB RAM,500GB HDD]	40			
Central Computing Lab, Zone III	Dell Optiplex 390 [Intel Core i3,8GB RAM,500GB HDD]	40	Linux		
	Dell Optiplex 380 / 360 / 330 / 755 [Intel Core 2 Duo, 2GB RAM,320GB HDD]	60			
(D) Operating System and Software Licenses					
Windows	Windows 8	250			
Windows	Windows Server Standard 2008 / 2010	10			
Seqrite	Seqrite End point Security	600			
Microsoft Office	Office 2007 and Office 2010	250			

Network Facilities

Campus Local Area Network

The Campus LAN Project of BITS Pilani – K K BIRLA Goa Campus is a state of the art, completely switched, voice enabled LAN infrastructure. LAN is able to provide 100 Mbps fibre channel network connectivity to all faculty cubicles, offices, library, Labs, lecture theatres, workshop, auditorium all hostel rooms, staff quarters, visitors' guest house, shopping complex, student activity center & other public facility locations in the campus. There are 4000+ nodes across the campus.

The network is a three-layer network, namely core, distribution and access. The core & distribution layer is connected through gigabit fibre optic backbone, while the access layer is using enhanced CAT5 / CAT6 cabling. The network is designed to provide link level and device level redundancy.

Wi-Fi Network

The Institute building, Visitors' Guest House, Student Activity Center and Medical Center are provided with secured Wi-Fi network facility. The Wi-Fi solution used for this is from RUCKUS. All hostels have WiFi connectivity. This Wi-Fi solution is using CISCO access points.

Cloud Based Services (e-mail and File Storage)

University e-mail solution is supported by Google for 30,000 users of BITS campuses and WILP students. This solution is an integrated solution covering e-mail with 30 GB space, file storage with 5 GB space, collaboration tool, file sharing, personal web-pages, calendaring system, etc.

LAN Security

The LAN security is provided by Cyberoam firewall with high availability and redundancy. The facility also supports high availability of internet lines and support on-demand bandwidth at any location with load balancing.

Voice Communication

All faculty members have been provided with a laptop / desktop and VoIP telephone facility in their chambers. The VoIP facility facilitates receiving of incoming call directly on the individual telephone.

Video Communication

Multi-point video conferencing facility is made available using POLYCOM HDX machine. This facility is utilized for online meetings of research groups in India as well as across the world apart from the administrative meetings.

Internet Bandwidth

No.	Area	Bandwidth Allocated	Service Provider
01	Hostels, Guest House	200 Mps	GWave (150) Vodafone (50)
02	Institute Building, Staff Quarters	100 Mbps	Vodafone (100)
03	Cross Campus Teaching and Lectures/talks from BITS Alumni using web-based technology	45Mbps	Tata Tele Services

Cross Campus Connectivity

No.	Area	Bandwidth Allocated	Service Provider
01	MPLS Connectivity connecting Pilani, Hyderabad, Goa campus with the Data center co-hosted at Mumbai for the ERP applications.	5 Mbps	Tata Tele Services
02	MPLS Connectivity connecting Pilani, Hyderabad, Goa campus with the Data center co-hosted at Mumbai for the BITS Connect 2.0 applications.	30 Mbps	Tata Tele Services

Virtual Class Room (BITS Connect 2.0)

Virtual classroom is set up at K K BIRLA Goa campus. This facility will enable faculty to deliver lectures to all four BITS campuses simultaneously; alumni and experts to remotely deliver lectures and conduct workshops or panel discussions to multiple BITS campuses simultaneously, with recording and streaming of lectures.

Telepresence Conferencing Room (BITS Connect 2.0)

(III) Telepresence Director and Placement Office conference room of 18 capacity have been set up at K K BIRLA Goa campus to facilitate virtual meetings for academic and administrative decisions at University level. Licenses for webex (web conferencing software) have been provided to all the faculty to facilitate discussions related to course work and research. This facility will also open up avenues of multimedia collaboration with anybody outside the campus. High end (CISCO EX 90) desktop systems are set up on the desk of.

Workshop

The central workshop is equipped with following equipments purchased during the year 2016 are as follows:

S.No.	Particulars
1	Mastercam X9 Software
2	Lathe Tool Dynamometer, With Digital Multicomponent Force Indicator with 3 Independent Display for XYZ axis, Range: 200KgF.
3	Absolute Digimatic Height Gage, With absolute Linear encoder
4	Iron Worker Machine
5	PILLAR DRILLING MACHINE - ALL GEARED - HEAVY DUTY

6	GRANITE PLATE SIZE:600X450X100MM
7	TIG AC/DC Welding Machine – 200
8	WOOD TURNING LATHE MACHINE, 4.5 Ft. Heavy Duty Wood Turning Lathe Machine

(iv) Central Facilities & Monitoring:

The central facilities on campus include central water receiving and distribution facility, central electric power receiving distribution center, Sewage Treatment plant, Diesel Generator, and central Air-conditioning plant. The details of these facilities are as follows:

Central Facilities	Installed Size/Capacity
PWD Water Connection	500cumec
Water Storage Sump	1800 cumec . Three tanks of 600 cumec each
Overhead Water Tank	150 cumec. Water pumped from the main sump to over head tank and distributed to campus residences through gravity.
No. of Bore Wells	6 Nos. / 55 cumec
GEB Electricity Supply	3000KVA and 2000 KVA transformers at 33 KV substations is energized with distribution of load by completing loop. A separate 11 KV line connected at PCC2 for AC plant with 1000 KVA transformer
Transformer	500/1500/750/750 KVA at PCC1,2,3 and 4 respectively. 3000KVA and 2000 KVA transformers installed at 33 KV substation step down power from 33 KV to 11 KV
Diesel Generator	2X500 connected to main building lighting, 750 KVA DG connected to air condition plant. One 62.5 installed for pump house for to pump water in case of power failure another 62.5 installed at VGH and 35 KVA DG connected to medical centre.
AC Plant	660 TR load connected to main building includes class rooms, cubicles, computer centre, Library and Auditorium etc.
Sewage Treatment Plant	Capacity 600 cumec and treated water is used for campus garden watering
Hybrid Power	Installed one of 3.7 KW each and power generated from solar and wind is fed to street light.
Solar Power	6.5 KV solar panel placed over roof and is connected to street lights.
Solar Water Heater	47 nos of solar water heater in hostels
Tele presence class room	200 capacity class room has been built for across three campus live class with the help of latest technology.

B2.13 MAJOR MAINTENANCE, RENOVATIONS OR NEW CONSTRUCTION REPORTS**Main Building**

Three new labs are constructed for Physics, Chemistry and Biology near Wing C with a carpet area of 150 Sq m each. Scholar student area has been created to carry out their theoretical research work.

The Biology and EE labs are developed to accommodate research and academic purpose

B2.14 MAJOR EQUIPMENTS ACQUIRED DURING THE YEAR

SNo.	Asset Description	Location	Rate	Qty	Amount
1	Wooden Baggages Cabinet Rack	CC-219	117300	1	117,300
2	Wooden Tables with drawers	DST FIST Lab Behind CC lab	15500	8	124,000
3	Computer steel wheel chair with composite leather model AC-040	DST FIST Mathematics Dept	4387	25	109,687
4	Executive Chairs	New Project Office -in SAC	4965.05	22	109,231
5	Godrej bravo high back chair	Admn. Office	8187	24	196,488

SNo.	Asset Description	Location	Rate	Qty	Amount
6	Cockpit workstation with 60mm thick tiles base partition 1500*1500*600	server room	57142.85	7	400,000
7	Sofa in teakwood frame single seater size 750*750*750mm	Library Reading Room	19322.24	16	309,156
8	19mm marine ply grade 710 1mm laminate	Library Reading Room	163394.24	1	163,394
9	Solid core marine flushdoor 2050*900mm	Faculty cubicales Liabrary	19332.5	8	154,660
10	Main Table 600mm*1800mm*750mm	Faculty cubicales Liabrary	20691	8	165,528
11	Filling Cabinet	Faculty cubicales Liabrary	37620	8	300,960
12	Dice make task chair balck leather	Admn. Office	5500	25	137,500
13	Alkon shelving unit without door ASU1875*900*400 and kick plate	qty-1 Emergency Room and qty-1Pharmacy	64921	2	129,842
14	Movie Chair 4leg base PC black without arms	All Hostels	3247	61	198,058
15	Orinet Fan energy saver 120mm white without regulator	CH-1 and CH-3	1440	286	411,840
16	Blue star make air cooled ceiling suspended ductable split AC 5.5 TR DSA661R1 with scroll compressor	CC UPS Room	128836	1	128,836
17	3HW18FB1 1 TR 3 STAR FB HT WALL SPLIT AC	Project Office	32827	4	131,307
18	1.5 ton Hitachi Make Logicool split AC	Chemcial Eng.A-104	35000	3	105,000
19	Split star 1.5 ton 3 star Split AC	Medical Centre	43306	3	129,918
20	Photosensor Moduel with Photomultiplier tube	B-109	153592	1	153,592
21	PMT power supply and amplifier	B-109	148772	2	297,543
22	Canon EOS 70D20 nMP digital SLR camera balck with ef s 18 135 mm is stm kit lens'	B-106	100749	1	100,749
23	Digital Thickness Monitor with sensor & accessories make Inficon Pte	SSP Lab B-108	283806	1	283,806
24	Nwxt4000d water colling accessory	SSP Lab B-108	482648	1	482,648
25	RF -3-XIII 300 watts ,ATN controller	Physic B-113	349077	1	349,077
26	Model 224 roatary electron beam source and power supply	Physic B-113	1541648	1	1,541,648
27	Laws of collison/demonstration track	Physic B-113	315492	1	315,492
28	Sandwich 1100*900-6.00 active vibration isolation platform based on sandwich TM technology	Central Instrumention A-104	2025484	1	2,025,484
29	Nano plus DLS practicle potential analyzer	A-104	3637718	1	3,637,718
30	LCMS 8040 Ultra fast triple quadropole mass spectrometer	IMA Lab	14302889	1	14,302,889
31	KEIL/ MCBSTM32F400UM E-ED kit	Embedded system lab A-307	26032	6	156,194

SNo.	Asset Description	Location	Rate	Qty	Amount
32	Aplab four output 0-32V/0-2A,5V/5A+12VTO+15V/0.5A Bench rack adaptable power supply	Instrumentation lab	16566	10	165,656
33	Digital Storage Oscilloscope 100MHz bandwidth	Analog & Digital Lab A-202	37350	14	522,900
34	Arbitrary Function Generator	Analog & Digital Lab A-202	23906	8	191,250
35	EK Z7 ZC706-G DEVELOPMENT KIT	A-205 Reconfigurable computing lab	259800	1	259,800
36	Interactive Projector	Mathematics Dept. DST FIST Lab	162500	1	162,500
37	Zen Air Makes Booster	Workshop	502308	1	502,308
38	Motion Blitze Sens Cube6 base unit	Workshop-Rsearch project Dr Ranjit Patil	472069	1	472,069
39	100KN median test system for fatigue test facility	W/S-108	3969715	1	3,969,715
40	Yamaha stage pass 400I	class room C-402,403 &404	65740	3	197,219
41	Dell Projector 1510x DLP @ & Brilliant colour TM technology 3D capable 3500ANSILumens (Max) contrast ratio 2100 typical XGA resolution of 1024*768 2.4 kg 8 watt. Speaker	A-602,A-504,503,C-304,305	42500	5	212,500
42	TM 2657P Full Automatic BPM	Medical Centre	112628	2	225,256
43	WIFI Softwareit's a machinery	CC office for Phase -1	4091581	1	4,091,581
44	A&H QU 32 Digital mixer	Auditorium	188910	1	188,910
45	A&H AB168 Audio Rack QU	Auditorium	72939	2	145,877
46	30280030Rush MH 4 beam martin lighting by harman	Auditorium	126438	2	252,876
47	90240000MAC QUANTUM PROFILE IN BARDBOARD MARTIN LIGHTING BY HARMAN'	Auditorium	380058	1	403,683
48	Fujikura 62S splicing machine	Server Room CC-119	235000	1	235,000
49	Dell power edge R530 server	server room for accounts	323113	1	323,113
50	Dell power edge R530 server	server room for SWD	323113	1	323,113
51	Canon DSLR Camera with accessories with lowerpro AW DSLR bag	CC-122 Language Lab(Humanities Dept0	149755	1	149,755
52	Ariam X real time PCR systems sYBR/FAM 516 mm optical cartridge	C-103	750000	1	750,000
53	Cisco Catalyst,Universal k9image,power supply-network switches	CS & IS A-200	101850	2	203,700
54	Extension WIFI all quarters-WS-C360-24TS-L	Server Room CC-119	101850	11	1,120,350
55	Extension WIFI all quarters-WS-	Server Room CC-119	127050	4	508,200

SNo.	Asset Description	Location	Rate	Qty	Amount
	C3650-24TS-L				
56	Extension WIFI all quarters-WS-C3650-24TS-L	Server Room CC-119	34650	20	693,000
57	IBM Server	Server Room CC-119	376000	1	376,000
58	IBM Server QC xeon es 2407 v2 2.4GHZ	Admin office	145000	1	145,000
59	2 way full range 800 watts	Class room C-401,405 & A-605,602	39439	8	315515
60	Iron worker machine model WSP-65T with standard tools and accessories	Workshop	692244	1	692,244
61	Nexo LS 18 Lsub 18 sub bass for PS15/GEOS 12 flyable	Auditorium	136332	2	272,663
62	NXAMP4X1C powered digital TD Controller	Auditorium	233712	1	233,712
63	Cisco UC phone 7841	Computer centre	9450	20	189,000
64	IBM server X3630-M4-XEON E5	server room	202,000	1	202,000
65	DAS action 12M Monitor speaker	Auditorium	34344	6	206,064
66	Cisco IP phone CP-7841	server room	9450	14	132,300
67	EMC Storage VNX-5600 with below config	server room	3000000	1	3,000,000
68	Zen Air Makes Booster	Workshop	502308	1	502,308
69	3D printer-Ultimaker 2 extended +	EEE Mechanicla & Computer sicence	225750	1	225,750
70	David SLS 3 Scanner	EEE Mechanicla & Computer sicence	341250	1	341,250
71	CEL Robox	EEE Mechanicla & Computer sicence	182910	1	182,910
72	GDS 320 200Mhz 2 channels digital storage	EEE Mechanicla & Computer sicence	137693	1	137,693
73	AFG 3051 50 MHz arbitrary function generator	EEE Mechanicla & Computer sicence	119659	1	119,659
74	GSP 830 + Opt 01 3 GHz spectrum analyser with tracking generator	EEE Mechanicla & Computer sicence	369619	1	369,619
75	PSW 80-27 programmable DC power supply	EEE Mechanicla & Computer sicence	123607	1	123,607
76	Libelium eva-for minor experiments sandbox project	EEE Mechanicla & Computer sicence	516950	1	516,950
77	APT Thin Film Deposition systems	B-108	1197000	1	1,197,000
78	Plant growth chamber Microcontroller PID based cap.600 Ltr.	C-112 Bio Lab	335812	1	335,813
79	NI USB 6356 X series DAQ device with BNC termination	B-109	288914	1	288,914
80	Pillar drilling machine all geared heavy duty eifco brand model EP-50 AG	Workshop	415799	1	415,799
81	FMC Foga mezzanine card	A-205 EEE dept	205000	1	205,000

SNo.	Asset Description	Location	Rate	Qty	Amount
82	EDS analysis system with manual slide	A-103	2126103	1	2,126,103
83	High Performance Liquid chromatography	C-207	1995116	1	1,995,116
84	UV-VIS Spectrophotometer(Model UV-3000)	A-104	315000	1	315,000
85	Micro Balance model CM2	C-207	562500	1	562,500
86	Semi Automated distillation analyser with accessories	A-102	198976	1	198,976
87	MSB Auto Susceptibility balance with specification measurig ranges and weighjt & length	C-207	1141228	1	1,141,228
88	Jasco UV VIS spectrophotometer model V-730IRM	C-114	1443801	1	1,443,801
89	Quanta 250 FEG scanning electron microscope including accessories	A-104	14952487	1	14,952,487
90	Data Acquisition system with accessories	Workshop 313/11	328545	1	328,545
91	Radio Educational lab station with vertical antena	A-201 Digitl Communication Lab	467460	2	934,920
92	Octoclock 8 channel clock distribution system (10Mhz ref & PPS)	A-201 Digitl Communication Lab	104580	1	104,580
93	Dry Freezer and accessory with rotational vaccum concentrator	C-112 Bio Lab	1094118	1	1,094,118
94	Excelitas SPCM RoHS complaint	B-109	809565	1	809,565
95	Thermo Scientific revco model EXF40086V Upright freezer	C-103	542658	1	542,658
96	Leica Ultramicrotome EM UC7 upgradable for eryo	A-103	6601375	1	6,601,375
97	Table Top stainless steel fume hood	A-104	157500	1	157,500
98	Next 300D Cf,water cooling accessory,TIC mains cable	B-108	338488	1	338,488
99	HP VC300r High pressure view chamber recirculating unit	A-102	1481207	1	1,481,207
100	Tiger Brand 500kg walk behind pitch Roller	Cricket Ground	172200	1	172,200
101	Ride on lawn mover model MTD 420/38 with collector	Cricket Ground	201244	1	201,244
102	Pitch Mower model pitch 550 with collector	Cricket Ground	173230	1	173,230
103	Water cooler cum purifier 80LPH & cooling 60LPH	A & C Mess	65500	2	131,000
104	Exhaust system for dosa & chapati	C Mess	208625	1	208,625
105	Exhaust system for Blower & steam Line	C Mess	208625	1	208,625
106	Dell Optiplex 3040 mini tower XCTO	CC-219	49350	46	2,270,100
107	Dell Optiplex 3040 mini tower XCTO	CS & IS Lab A-200	49350	33	1,628,550
108	Server EMC storage & file controllers	Server Room	2500000	1	2,500,000

SNo.	Asset Description	Location	Rate	Qty	Amount
	gateway 3 24*7 academic storage campus data				
109	Dell Latitude 3460 CTO	Faculty Members	49585	15	743,775
110	Dell Latitude 3460 CTO	Faculty Members	49585	25	1,239,625
111	Dell Latitude 3460 CTO	Faculty Members	49585	25	1,239,625
112	Dell Latitude 3460 CTO	Faculty Members	49585	25	1,239,625
113	Dell Optiplex 3040 mini tower BTX	C--113 Physic Lab	42820	6	256,922
114	Dell Optiplex 3040 mini tower BTX	C--113 Physic Lab	51470	2	102,939
115	Lenovo Idea centre A740 27-desktop AIO PC with touchscreen	Director's Office	113925	1	113,925
116	Dell Precision tower 7810XCTO Base	Dr Ranjit patil_mechanical dept.	233864	1	233,864
117	HP Laserjet MFP M725 DN Mono Printer P/n-CF066A	Accounts Office B-104	225750	1	225,750
118	APC UPS SRC10KUXI-12V,65AH	A-104	256978	2	513,956
119	Numeric 10 kVA true online double conversion UPS System with DC power pack	Embedded system A-307	125000	1	125,000
120	120KVA Frame	CC UPS Room	280875	1	280,875
121	20 KVA Power Module	CC UPS Room	152250	5	761,250
122	Battery Set	CC UPS Room	192150	2	384,300
123	11KVA feeder towards parallel line from 33kVA substation New academic block	Project office	3271689	1	3,271,689
124	Cadence software	Microelectronic Lab CC-123	929837	1	929,837
125	Academic permanent single user	EEE dept. CC-123	101611	1	101,611
126	Academic Tah Licence for Matlab	EEE, Mech. Eng., physic and mathemicts	1329555	1	1,329,555
127	Intel PCL999LFAE05X1Z software XE cluster edition for linux	CS&Is A-200	795488	1	795,488
128	Deployment services	CS&IS A-200	230000	1	230,000
129	SIMULIA academic abaqus research base additional models and licenses	Mechanical Engg Dept kept in CC qty 1 & 4	258702	4	1,034,806
130	NSS data for eco. Dept.	Economics B-310	273198	1	273,198
131	EC Economic Census	Economics B-310	193036	1	193,036
132	Winhome 10 singl olp nl acdmc legalization getgenuine	CC	7077	113	799,677
133	Cadence software	Microelectronic Lab CC-123	929837	1	929,837
134	MSC Motion Bundle adams	Workshop	350000	1	350,000

SNo.	Asset Description	Location	Rate	Qty	Amount
135	Moldex3d solutions e design packages	Workshop	335000	1	335,000
136	MEMS+Library for cdenance simulation	Microelectronic Lab CC-123	485300	1	485,300
137	Mastercam X9 educational on Hasp	Workshop	17574	20	351,471
138	Altair Hyper Works units	Workshop	100380	5	501,900
139	Origin Pro ver2016	B-113-Physic	151200	1	151,200
140	SIMULIA academic teaching	Computer centre CC	362965	1	362,965
141	ArcGis for Desktop Basic (CU) Spatial	Economics Dept	274850	1	274,850
142	Rsoft optSIM v 2014.09 software single user	EEE Dept.	147000	1	147,000
143	Academic permanent single user	EEE dept. CC-123	101611	1	101,611
144	Nvivo 11 pro	Eco dept-A-302	155700	1	155,700
145	cWIP JV 31.03.16	Server Room Partition	548,685		548,685
146	cWIP JV 31.03.17	Mathematics Lab	354,970		354,970
147	cWIP JV 31.03.18	Dr Veek baths nero bio tech lab	479,561		479,561
148	cWIP JV 31.03.19	EEE Lab Wing A	433,369		433,369
149	cWIP JV 31.03.20				
150	Racold Solar Water Heater 500LPD FPC		380,016		380,016
Total cost of Equipment					126,516,728

B2.15 STUDENTS ACTIVITIES, ACHIEVEMENTS, SCHOLARSHIPS, CULTURAL AND ACADEMIC FESTIVAL

AC promotes the student activities, games and sports like Cricket, Football, Tennis, Squash, Volleyball, Basketball, Badminton, Chess, Carom, Pool, and Table Tennis. SAC also promotes extra-curricular activities for students, faculty and their dependents in the campus. Daily training in football and cricket is conducted for the institute team. New Squash court has been constructed

The cricket and football ground out field has been re-laid and been developed to higher standard. Up gradation of gymnasium has been done by installing latest machines and other equipment's. The gymnasium functions strictly under the guidance of a trainer for safety measures.

Sports Achievements 2016 - SPREE – 2016

- Institute Tennis TEAM A – Winners in Annual Sports meet of BITS Pilani K.K.Birla Goa Campus "Spree" March 2016
- Tennis TEAM B – Runner's Up Sin Annual Sports meet of BITS Pilani K.K.Birla Goa Campus "Spree" March 2016
- Chess team won the finals in BITS Pilani K.K.Birla Goa campus annual sports festival "spree" March 2016

Open tournaments – 2016

- Tennis team Runner's Up – ARENA 2016, BITS Hyderabad Sports Fest(Tennis Event)
- Institute Tennis team won the BITS Pilani Hyderabad Sports festival tennis event February 2016.
- Institute Basketball Girls Team won the KJ Somaiya sports festival in Girls basketball tournament Beating IIT Bombay Girls Basketball team in the finals , February 2016
- Siddhartha Mohan and Chirag Ramdas won the all Goa doubles Badminton championship April 2016
- Rachit Aiyappa won the all Goa Tennis Tournament Organized by Goa Tennis Association at Cidade Goa, Panjim April 2016

November – 2016

- Badminton Boys team won the final at BITS Pilani Dubai, Dubai Campus Annual sports meet November 2016
- Basketball Girls team lost in the finals (Runner-Up) at the BITS Pilani Dubai, Dubai Campus Annual sports meet November 2016
- Badminton Girls team lost in the finals at the BITS Pilani Dubai, Dubai Campus Annual sports meets November 2016. Emerged as Runner- up in the championship
- Goa Football Association (GFA) Illrd Division League Mormugao Zone –BITS Pilani K.K.Birla Goa Campus Institute Football (Men's) Team Runners –Up and Qualified for the GFA IInd Division league

Award of Scholarship to Students

SCHOLARSHIP	NO. OF. STUDENTS (figures indicates no. of awards in 2016)	AMOUNT
INSTITUTE'S MERIT & MCN SCHOLARSHIP	1015	43414154
MERIT SCHOLARSHIP TO INTERNATIONAL STUDENTS	34	4617128
STUDENT AID FUND FINANCIAL ASSISTANCE	14	781950
ADITYA BIRLA GROUP SCHOLARSHIP	1	65000
SCH FROM BITSAA INTERNATIONAL	6	223400
OTHER SCHOLARSHIP	4	232887
TOTAL :	1074	49334519

Note :

- Students are also in receipt of scholarship like INSPIRE, KVPY, NTS and other scholarships from state government etc.

Teaching Learning Centre

During the year 2016, Teaching Learning Centre at KK Birla Goa Campus evolved its programs further and worked on its vision, which is to provide a foster a thriving culture for excellence in teaching-learning processes. It provided a forum to discuss and evolve new ideas in education to address current challenges. The following activities were carried out by Teaching Learning Centre during the year 2016.

1. The website of TLC was enriched with many new resources. Some articles discussing areas such as the effect of new practices in specific courses as well as the possibilities and methods of improving teaching-learning processes were published through active participation of faculty members of KK Birla Goa Campus. Links to many new video/audio resources for motivating/guiding the educators were also provided in the website.
2. Dr. Varinder Singh, Faculty in Charge of TLC at BITS Pilani KK Birla Goa Campus was invited to participate in the symposium of Global Learning Council visited NUS, Singapore during April 12-13, 2016 to participate in the international deliberations on improvement possibilities in teaching-learning processes. Global Learning Council has many leading universities of the world as its members and it was initiated by Carnegie Mellon University, USA.
3. Dr. Varinder Singh also participated in a National Convention on Future of Classroom Teaching held at BITS Pilani Pilani Campus during Sep 30-Oct 1, 2016
4. Workshop on effective teaching and learning was organized during 4th-6th Jan, 2016 as well as on 4th-5th Nove, 2016 for newly joined faculty members across different disciplines at BITS Pilani KK Birla Goa Campus. First workshop was jointly conducted by TLC members, senior faculty members including Prof. K.

E. Raman as well as an external expert Dr. Rajendra Joshi. Prof. Lakshmi Narayan Samavedam from NUS, Singapore also joined some sessions through skype. The first workshop was opened to older faculty members as well and many members participated with enthusiasm. The second workshop was mainly conducted by TLC members along with few additional senior faculty members

5. Intensive teaching workshop for 18 new faculty members was also organized with sessions spread across several weeks during February-April, 2016.
6. TLC workshop for TA's from M.E. and Ph.D. programs was organized on Sep 10, 2016.
7. TLC Teaching seminar series was started through first lecture by Prof. A V Kulkarni on several attributes and skills that one must acquire to be an effective teacher.