

FIST PROGRAM

PROJECT No.
SR / FIST / College-214 / 2014(C) dated 16th June 2015

PROJECT COMPLETION REPORT (FOR THE YEARS 2015 – 2017)

Submitted to
Department of Science & Technology



सत्यमेव जयते
Department of Science and Technology
Ministry of Science and Technology
Government of India



October 2018

ST. JOSEPH'S COLLEGE (AUTONOMOUS)

175 years of Educational Excellence

Accredited at 'A' Grade (3rd Cycle) by NAAC

DBT-STAR & DST-FIST Sponsored College

Special Heritage Status Awarded by UGC

TIRUCHIRAPPALLI 620002

CONTENTS

Details of the Departments	Page
BOTANY	01
CHEMISTRY	17
COMPUTER SCIENCE	32
MATHEMATICS	56
PHYSICS	71
APPENDIX I List of Books	
APPENDIX II Audit Statements	

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PG and Research Department of Botany

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**DST – Fund for Improvement
in Science and Technology Infrastructure (FIST 2014)
Department of Botany
School of Biological Sciences**

FORMAT 1

Brief Outline of the Department

- The history of the Plant Biology & Plant Biotechnology Department dates back to the year 1912, when the study of Natural Science was introduced.
- Many students of this department later became brilliant Doctors in India and abroad. In 1952, the BA Botany degree course became B.Sc. Botany.
- In 1958, St Joseph's College became the first College to offer M.Sc. in Botany outside Madras City under the University of Madras.
- Former President of India Dr S Radhakrishnan, declared open the present Botany Block in 1958, when he was Vice-president.
- It is one of the Departments that has received the DBT-Star Status

Teaching and Research Activities

- The department is FIST supported, have separate research facilities for Molecular biology, Physiology and Bioinformatics.
- The Faculty members undertake research in Molecular Genetics and Biotechnology; Taxonomy, and Medicinal plant research; Clinical Microbiology.
- The Faculty has received several awards and Research grants from funding agencies like DST.
- The Department has so far awarded more than 50 Ph.D.s, published 500 research papers and 5 books.
- The Department has organized 1 International and 5 National conferences and 6 workshops.

Facilities Created

- A separate FIST Lab has been created. It is housed with three different units namely Common Instrumentation Lab, Molecular Biology Lab and Bioinformatics Lab.

S.No.	Laboratory & Equipments	Details
1	Common Instrumentation Lab	* It is equipped with UV Laminar, Air-flow Chamber, Monopan Digital Balance, Digital pH Meter * These equipments are used for the regular Practical Sessions by the UG and PG Students
2	Molecular Biology Lab	* It is equipped with UV Laminar, Air-flow Chamber, Monopan Digital Balance, Digital pH Meter, PCR, GelDoc, Ultracentrifuge Electrophorogram * These equipments are used for the regular Practical Sessions by the UG and PG Students
3	Bioinformatics Lab	* It is equipped with Computer Terminals (11 Nos) for the information retrieval regarding Plant Genomic Studies. * This Lab is used by UG & PG Students of Botany

- **Sophisticated Instrumentation Facility**

S.No.	Laboratory & Equipments	Details
1		

Funding

- The Details of funding are given here.

Details of Grants : Grant for the College as a whole			
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000



Microscope



UV-Vis Spectrometer

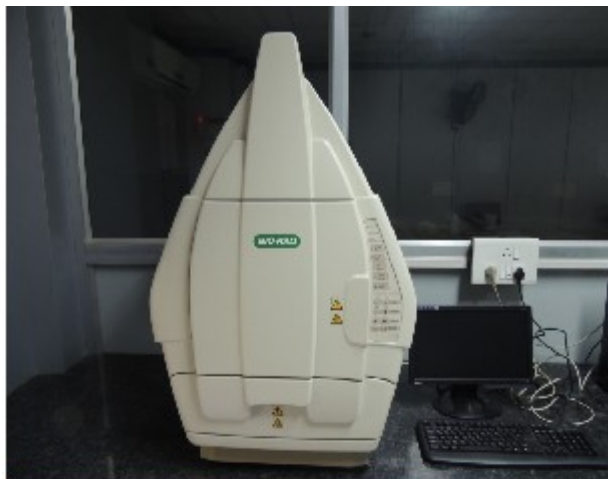


Centrifuger



Digital Balance

Instruments purchased through DST-FIST 2015 Fund



Gel Doc



Gel Electrophoresis



Gradient Thermal Cycler



Autoclave



pH Meter



Computer Lab

Instruments purchased through DST-FIST 2007 Fund

FORMAT 2**Pro-forma for Report for utilization of FIST support**

S.No.	Aspects	Details
1	Name of the Department and University	Plant Biology and Plant Biotechnology, St. Joseph's College (Autonomous) Tiruchirappalli 620002 Bharathidasan University, Tiruchirappalli 620024
2	Address for Communication Name and Address of the Head of the Dept with e-mail and telephone	Dr J John Head, Dept. of Plant Biology and Plant Biotechnology, St. Joseph's College (Autonomous), Trichy 620002 e-mail: john61sjc@yahoo.com telephone: 0431-4226389
3	Date and Ref.No. Of DST Sanction Letter	SR/FIST/College-214/2014(C) dated 16 th June 2015

4	Details of Grants: Grant for the College as a whole		
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000

5	Equipment ordered / purchased /installed			
	Name (Model & Make)	Order Date	Installation Date	Cost in INR
5.1	Weighing Balance – Shmadzu ATY224 (3 Nos)	12.09. 2015	16.09.2015	1,71,990.00
5.2	UV-VIS Spectrometer – ANUV 7000M UVA (1 No)	12.09.2015	16.09.2015	3,70,125.00
5.3	Clinical Centrifuge (5 Nos)	12.09.2015	31.12.2015	30,993.00
5.4	Binocular Microscope – Olympus CH 201 (18 Nos)	12.09.2015	16.09.2015	5,58,900.00

6	Details of Infrastructure developed	
	<i>FIST before 2015</i>	<i>FIST 2015-2017</i>
		Weighing Balance – Shmadzu ATY224 (3) UV-VIS Spectrometer – ANUV 7000M UVA Clinical Centrifuge (5) Binocular Microscope – Olympus CH 201 (18)

7	Details of Networking	

8	Utilization of the facilities created under FIST	
	<i>For Teaching</i>	<i>Details of utility</i>
	* Practical Courses on Molecular Biology and Genetic Engineering conducted for III UG and PG Students * Research Methodology Course and related Practical Sessions are conducted for M. Phil students	The facilities of Common Instrumentation Lab, Molecular Biology Lab and Bioinformatic Lab are used

8	Utilization of the facilities created under FIST	
	<i>For Reseach</i>	<i>Details</i>
	M.Phil and Ph.D Scholars use these facilities for their Research Works in the following Thrust Areas 1. Taxonomy (Dr. S Soosairaj, Dr. R Senthikumar, Dr. Y Justin Koilpillai) 2. Microbiology (Dr. J John, Dr. R Jayachandran, Dr. G Melchias, Dr. T Francis Xavier) 3. Phytochemistry (Dr. S Sahaya Sathish, Dr. A Egbert Selwin Rose, Dr. M Francis Sathyaseelan, Dr. H David Raja)	The facilities of Common Instrumentation Lab, Molecular Biology Lab and Bioinformatic Lab are used

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
Dr G. Melchias			
1	<i>Ficus benghalensis</i> mediates synthesis of silver nanoparticles: the green approach yields NPs that are its anti-bacterial and anti-oxidant World Journal of Pharmaceutical Sciences	International 2321-3310	4(7), 1-12, 2016
2	Evaluation of silver bio-nanoparticles synthesized with the mediation of Zizyphus jujuba fruit extract on bactericidal compatibility and seed viability Indo American Journal of Pharmaceutical Research	International 31-6876	6(07), 6125-34 2016
3	Epigallocatechin gallate attenuates behavioral defects in sodium valproate induced autism rat model Research Journal of Pharmacy and Technology	International 74-360X	10 (5), 1477- 80, 2017
4	Dose-dependent amelioration of epigallocatechin-3-gallate against sodium Valproate-induced autistic rats International Journal of Pharmacy and Pharmaceutical Sciences	International 2348-0319	9(4), 203-206. 2017
Dr R Jeyachandran			
1	Apogamous Sporophyte Development through spore reproduction of a South Asia - Critically Endangered Fern: Pteris tripartita Sw. Asian Pacific Journal of Reproduction	International 2305-0500	4(2), 135-139, 2015
2	Biosynthesis and Characterization of Silver Nanoparticles and Antimicrobial activity of Trichoglottis tenera (Lindl.) an endangered orchid of Western Ghats International Journal of Advanced Research	International 2320 - 5407	3(3), 533-552 2015
3	Ex situ Conservation of Trichoglottis tenera (Lindl.) A Threatened and Endangered orchid of Western Ghats Using Asymbiotic Seed germination Technique International Journal of Recent Scientific Research	International 76-3031	6(4), 3488-3496, 2015
4	Green Synthesis of Silver Nanoparticles from Diplocyclos palmatus (L.) C. Jeffrey International Journal of Innovative and Applied Research	International 0975-1491	4(10), 14-22, 2016
	Green Synthesis of Silver Nanoparticles Using Aqueous Leaf extract of Spilanthes calva DC. World Journal of Pharmaceutical Research	International 2277-7105	5(11), 822-828, 2016
	In vitro Micropropagation of Diplocyclos palmatus (L.) C. Jeffrey- An Endemic Medicinal Plant International Journal of Current Science and Technology	International 2320-8090	4(9), 271-274, 2016
	Micropropagation from Ageratu conyzoides L Indo American Journal of Pharmaceutical Research	International 2231-6876	7 (9), 674-677, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
Dr R Jeyachandran Contd.....			
	Antifeedant activities of <i>Ageratum conyzoides</i> L. against <i>Hemiteles duplifacialis</i> Larvae <i>International Journal for Science and Advance Research in Technology</i>	International 2395-1052	3(9), 269-272, 2017
	A suitable Protocol for Micropropagation of <i>Spilanthes calva</i> DC. An Endemic medicinal Plant <i>World Journal of Pharmaceutical Research</i>	International 2277-7105	6(10), 529-534, 2017
	Phytochemical Characterization of <i>Blumea bifoliata</i> L. <i>European Journal of Biomedical and Pharmaceutical Sciences</i>	International 2349-8870	4(10), 735-739, 2017
Dr S R Senthil Kumar			
	Uncultured Bacterium clone MA05-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	KX059337, 2017
	Uncultured <i>Streptomyces</i> sp clone MJC19-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289404, 2017
	Uncultured <i>Bacillus</i> sp clone MJC18-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289403, 2017
	Uncultured <i>Bacillus</i> sp clone MJC17-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289402, 2017
	Uncultured <i>Bacillus</i> sp clone MJC17-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289402, 2017
	Uncultured <i>Bacillus</i> sp clone MJC16-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289401, 2017
	Uncultured <i>Bacillus</i> sp clone MJC15-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289400, 2017
	Uncultured <i>Bacillus</i> sp clone MJC14-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289399, 2017
	uncultured <i>Brevibacterium</i> sp clone MJC13 -16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289398, 2017
	Uncultured bacterium clone MJC12-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289397, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr S R Senthil Kumar		
	Uncultured Bacillus sp clone MJC11-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289396, 2017
	Uncultured Bacillus sp clone MJC10-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289395, 2017
	Uncultured Streptomyces sp clone MJC20-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289405, 2017
	Uncultured Streptomyces sp clone MJC20-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289405, 2017
	Uncultured Streptomyces sp clone MJC21-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	0289406, 2017
	Uncultured Pseudomonsa sp clone MAV02--16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	KX059336, 2017
	Uncultured Acinetobacter sp clone MAV01-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	Kx059335, 2017
	Uncultured Pseudomonas sp clone MAV03-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	KX059334, 2017
	Uncultured Pseudomonas sp clone MAV03-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	059334, 2017
	Uncultured Bacterium clone MAV04--16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	059333, 2017
	Uncultured Bacillus sp clone RAZ03-16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	059332, 2017
	Uncultured Bacillus sp clone RAZ01 -16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	059331, 2017
	Uncultured Bacterium clone RAZ02--16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	059330, 2017
	Uncultured Bacterium clone MN02--16S ribosomal RNA gene, partial sequence <i>NCBI, USA</i>	International	059329, 2017

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr S R Senthil Kumar		
	Uncultured Bacterium clone MN04--16S ribosomal RNA gene, partial sequence NCBI, USA	International	KX0059328, 2017
	Uncultured Streptomyces sp clone MJC22-16S ribosomal RNA gene, partial sequence NCBI, USA	International	289407, 2017
	Uncultured Bacillus sp clone MJC09-16S ribosomal RNA gene, partial sequence NCBI, USA	International	0289384, 2017
	Uncultured Bacillus sp clone MJC02-16S ribosomal RNA gene, partial sequence NCBI, USA	International	0289393, 2017
	Uncultured Bacillus sp clone MJC07-16S ribosomal RNA gene, partial sequence NCBI, USA	International	0289392, 2017
	Clinical Profile of Opportunistic bacterial and fungal pathogens in HIV/AIDS patients of Thuraiyur region of Tiruchirappalli District, Tamil Nadu, India Internation Journal of Current Research and Academic Review	International 2347-3215	5(9), 10-14, 2017
	Dr S Sahaya Sathish		
	Chromosome study on the fern species <i>Leptochilus decurrens</i> Blume (Polypodiaceae) of Kolli Hills, Eastern Ghats, Tamil Nadu, India International Journal of Research in Engineering and Bioscience	International 2321-743X	6, 7-13, 2015
	Studies on the spore morphology of pteridophytes from Kolli Hills, Eastern Ghats, Tamil Nadu, India. International Journal of Research in Engineering and Bioscience	International 2321-743X	4(1), 1-12, 2016
	A new cytotype of <i>Asplenium decrescens</i> from Kolli Hills, Tamil Nadu Journal of Cytology and Genetics	International 0253-7605	17 (1 & 2), 69 – 71, 2016
	Antioxidant and antimicrobial studies on biosynthesized silver nanoparticles using <i>Bryum medianum</i> Mitt. a bryophyte from Kolli hills, Eastern Ghats of Tamilnadu, India. Journal of Pharmaceutical Sciences and Research (JPSR).	International 0975-1459	2016
	<i>Pyrrosia porosa</i> (C. Presl) Hovenkamp A new diploid cytotype of South India from Kolli Hills of Eastern Ghats, Tamil Nadu, India. International Journal of Plant Biology & Research	International 2333-6668	5(1), 1057-1058, 2016

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr S Sahaya Sathish		
	Ecology, phytogeography and life form of Mosses (Bryopsida) Bodamalai hills of Eastern Ghats of Tamil Nadu, India <i>International Journal of Current Science</i>	International 2250-1770	20(1), 63 – 71, 2017
	Checklist of Mosses (Bryophyta) of Bodamalai Hills in Eastern Ghats, Tamil Nadu <i>Plant Science Today</i>	International 2348-1900	4(1), 49-54, 2017
	Moss (Bryophyte) Mediated Synthesis and Characterization of Silver Nanoparticles from <i>Campylopus flexuosus</i> (Hedw.) Bird <i>Journal of Pharmaceutical Sciences and Research</i>	International 0975-1459	9(3), 292-297, 2017
	Green synthesis, characterization and antibacterial activity of silver nanoparticles from <i>Bryum salakense</i> card. a moss plant (Bryophyte) <i>World journal of pharmacy and pharmaceutical sciences</i>	International 2278-4357	6(7), 1880-1892 2017
	Palynomorphic studies of ferns of Kolli Hills, Eastern Ghats, Tamilnadu <i>Bioscience Discovery</i>	International 2231-024X	8(4), 752-761 2017
	<i>Pohlia wahlenbergii</i> (F. Weber & D. Mohr) A.L. Andrews, a new addition to the Bryoflora of South India <i>Bioscience Discovery</i>	2231-024X	8(3), 592-595, 2017
	New additions to fern flora of Tamil Nadu, India. <i>International Journal of Advance Research and Innovative Ideas in Education</i>	2395-4396	5(2), 56-64, 2017
	Enumeration and Phytogeographical Pattern of Mosses (Bryopsida) In Kalrayan Hills, of Eastern Ghats of Tamilnadu, India <i>International Journal of Development Research</i>	2230-9926	8(1), 18212-16, 2017
	Dr K Rajan		
	Apogamous sporophyte development through spore reproduction of a South Asia - critically endangered fern: <i>Pteris tripartita</i> Sw. <i>Asian Pacific Journal of Reproduction</i>	2305-0500	4(29), 135-139, 2015
	Dr A Ebgert Selwin Rose		
	Assessment of Mycorrhizal Status in The Ferns of Kolli Hills <i>Biodiversity and Climate Change Adaptation-Current Status, Trends And Policy Responses</i>	National	2015
	Studies on the mycorrhizal association of <i>Rhododendron arborium</i> Sm. ssp <i>nilagiricum</i> (Zenker) Tagg <i>Tropical Ecology</i>	0564-3295	57(1), 69-76, 2016
	Status of arbuscular mycorrhizal fungi in tree species from Eastern Ghats of Tamil Nadu India <i>International journal of science and research</i>	2319-7064	6, 415, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr. S Soosairaj		
	Status assessment of the Saddlepeak Dewflower (<i>Murdannia saddlepeakensis</i> Ramana & Nandikar: Commelinaceae): an endemic spiderwort plant of Andaman Islands, India. <i>Journal of Threatened Taxa</i>	0974-7893	8, 9643-47, 2016
	Composite Aster <i>Inula</i> L. (Asteraceae): A new generic report for Nicobar Islands, India <i>Journal of Threatened Taxa</i>	0974-7893	8, 9584-85, 2016
	Native vegetation pattern and the spread of three invasive species in Palani Hill National Park, Western ghats of India <i>Acta Ecologica Sinica</i>	1872-2032	36,367-376, 2016
	Two additions to the flora of Palni hills, southern India <i>Journal of Threatened Taxa</i>	0974-7893	8, 9216-20, 2016
	Bioactive compounds analysis and characterization in ethanolic plant extracts of <i>Justicia tranquebariensis</i> L. (Acanthaceae)-using GC-MS <i>International Journal of ChemTech Research</i>	0974-4290	9, 260-265, 2016
	Green synthesis of Copper bionanoparticles to control the bacterial leaf blight disease of Rice <i>Current Science</i>	0011-3891	110, 2011-2014, 2016
	Screening and characterization of non caloric sweeteners in <i>Scoparia dulcis</i> L <i>Asian Journal of Plant Science and Research</i>	2249-7412	6, 46-51 2016
	Derris <i>gamblei</i> sp. nov. (Fabaceae) from Tamil Nadu, India <i>Nordic Journal of Botany</i>	1756-1051	35,423-425, 2017
	Dr T Francis Xavier		
	Activity Profile of Five Selected Medicinal Plants Against Fifteen Bacterial pathogens <i>Pakistan Journal of Botany</i>	2070-3368	47(2), 2-5, 2015
	Observation on the traditional phytotherapy among the Malayali tribes in Eastern Ghats of Tamil nadu , South India <i>Journal of Ethnopharmacology</i>	0378-8441	165, 198-214, 2015
	Isolation and Characterization of UTI pathogens from HIV positive patients of Karur District, Tamil nadu, India <i>International Journal of Microbiology and Applied Sciences</i>	2319-7706	4(1), 558-563, 2015
	Phytochemical screening and antimicrobial studies on the medicinal plant <i>Flueggea leucopyrus</i> (Willd). <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	2278-4357	4(9), 717-26 2015
	Isolation and Characterization of Bacterial and fungal pathogens from hospitalized HIV/AIDS patients of Namakkal District, in Tamil nadu <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	2278-4357	4(7), 742-750, 2015

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr T Francis Xavier		
	Phytochemical screening and antimicrobial studies on the medicinal plant Vitex Altissima L. <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	2278-4357	4(9), 705-716 2015
	Traditional Medicinal plants used in the treatment of different skin diseases <i>International Journal of Current Microbiology and Applied Sciences</i>	2319-7706	4(5), 1043-1053, 2015
	Sensitivity Pattern of Opportunistic Bacterial Pathogens of HIV/AIDS Patients on Cyclea peltata (LAM.) Hook.f. & Thomson ? A Potential Medicinal Plant. <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	2278-4357	5(3), 844- 870, 2016
	An Antibacterial Potential of Tragia involucrate L. Against Opportunistic Bacterial Pathogens of HIV/AIDS Positive Patients of Karur District <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	2278-4357	5(3), 871-877, 2016
	DNA Barcoding of Vanda species from the regions of shevaroy and kolli hills using rbcL gene <i>Biotechnological Research</i>	2395-6763	3(4), 94-98, 2017
	Clinical profile of opportunistic bacterial and fungal pathogens in HIV/AIDS patients of Thuraiyur region of Tiruchirappalli District, Tamil Nadu, India. <i>International Journal of Current Research and Academic Review</i>	2347-3215	5(9), 10-14, 2017
	In vitro Antibacterial Activity of Clausena dentata (Wild.) M. Roem leaf extracts against opportunistic bacterial pathogens of HIV/AIDS patients <i>International Journal of Current Research and Academic Review</i>	2347-3215	5(9), 60-65, 2017
	Dr M Francis Sathyaseelan		
	Green Synthesis of Silver Nanoparticles using Delonix regia leaf extract and evaluation of their Antimicrobial Efficacy <i>World Journal of Pharmaceutical Sciences</i>	2321-3310	5(3), 209-215 2017
	Biological Synthesis of Silver Nanoparticles Using Portulaca quadrida leaf extract and their Antimicrobial Activitiy <i>World Journal of Pharmaceutical Research</i>	2277-7105	6(2), 1309-1316 2017
	Dr H David Raja		
	Micropropagation of Solanum trilobatum from Shoot-tip explant <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	2278-4357	4, 1730-34, 2015
	Micropropagation of Phyllanthus amarus from nodal explant <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	2278-4357	4, 1153-57, 2015
	In vitro propagation of Nyctanthes arbor-tristis L. <i>Indian Journal of Biotechnology</i>	0972 - 5849	16, 340-43, 2017

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr H David Raja		
	Survey and enumeration of anoectochilus elatus lindl and dendrobium aquem lindl - threatened medicinal orchids of kolli hills (eastern ghats) tamil nadu, india. World Journal of Pharmacy and Pharmaceutical Sciences	2278-4357	6(9), 1417-1424, 2017
	Effect of Cytokinins on Micropropagation of Anoectochilus elatus Lindl. from shoot tip explants - An Endangered Medicinal Orchid. IOSR Journal of Biotechnology and Biochemistry (IOSR-JBB)	2455-264X	3, 73-76, 2017
	Dr Y Justin Koilpillai		
	Antimicrobial Activity Study of Flavanoids and Salicylic acids Extracted from Tagetes erecta Linn Nanobio Pharmaceutical Technology		493-497, 2015 Special Issue
	Quantitative analysis of bioactive compounds from tagetes erecta (linn) Asian Journal of Pharmaceutical and Clinical Research	0974-2441	8(6), 185-187, 2015
	Anti-inflammatory effect of bioactive compound of Tagetes erecta (Linn.) flower extract Journal of Pure and Applied Microbiology	0973-7510	9(3), 2547-2550, 2015
	Phytochemical Screening and Gas Chromatograph Mass Spectrometer Profiling in the leaves of Solanum incanum L. Asian Journal of Pharmaceutical and Clinical Research	0974-2441	8(3), 179-188, 2015
	Column chromatographic separation of bioactive compounds from tagetes erecta linn. International Journal of Pharmaceutical Sciences and Research	2320-5148	6(2), 762-766, 2015
	Antimicrobial Potensial of Petroleum Ether Extract and Active Column Fractions of the Solanum incanum Leaves Journal of Pure and Applied Microbiology		9(4), 2949-2954, 2015
	Pharmacognostic and Physicochemical Evaluation of Solanum virginianum L . Leaves (Solanaceae) International Journal of Pharma and Biosciences	0975-6299	7(1), 40-44, 2016
	Physicochemical Evaluation of Solanum incanum L. Research Journal of Pharmacy and Technology.	0974-3618	9(4), 415-418 2016
	Ex situ Conservation of the Rare and Endemic species of Poeciloneuron pauciflorum Bedd World Journal of Pharmacy and Pharmaceutical Sciences.	2278-4357	6(12), 1505-1509 2017

10 Sponsored research projects in operation during the period 2015-16 & 2016-17				
S.No.	Name of the Investigator	Title of the Project	Funding Agency	Amount Rs.
1	Dr R. Jeyachandran	Phytopharmacological evaluation and QSAR study of bioactive principles of most critically endangered fern <i>Pteris tripartita</i> Sw. from South India	UGC, New Delhi	Rs.8,78,800
2	Dr S. Sahaya Sathish	Study of the diversity and the distribution pattern of mosses in Eastern Ghats of Tamilnadu	UGC, New Delhi	Rs.9,71,800
3	DR.S. Soosairaj	Geospatial modelling of ecological niche and distribution of some threatened species in eastern ghats of tamilnadu	DST, New Delhi	Rs.11,70,000
4	DR.S. Soosairaj	Status and distribution Survey of selected CR/EN/DD taxa in wild	Tamil Nadu Forest Dept	Rs.3,80,000
	DR.T. Francis Xavier	Isolation and characterization of opportunistic pathogens from hospitalized AIDS patients of Namakkal district and antimicrobial screening of traditional medicinal plants of kolli hills on opportunistic pathogens	UGC, New Delhi	Rs.6,72,300

11 Utilization of Equipment from outside the department	
	The equipments are not used for Scholars / Students from outside the department

12 Self-Assessment of the Impact of FIST support:	
Please specify, if any of the following activity emerged / improved as a consequence of the FIST support	
Aspects	
a.	New class-room experiments at B.Sc / M.Sc or other levels
b.	Success of students at national level tests (various PG / PhD entrance tests and test for JRF, etc.) 2016-17: NET Qualified Candidate – KG Gayathri (319812)
c.	Any new research project that emerged on the basis of the FIST support
d.	Did the newly created facility lead to betterment of quality of research publications
e.	Any training program / workshop organized by the department during the period of report, specifically those involving the newly created facility International Conference on Frontiers in Life Science – ICFLS-'16 (8 & 9 Jan 2016) National Level Science Academies' Lecture Workshop on Bioprospecting and Bioresources BIBIO-'16 (12 & 13 Feb 2016) Workshop on Molecular Taxonomy and Bio-Informatics Tools (22 – 29 Feb 2016) Seminar on Bio-Informatics: Challenges & Applications (15 Feb 2016) State Level Workshop on Plant Tissue Culture Techniques (3 Feb 2016) Workshop on On-Farm Food Processing (11 Jan 2016) One-day hands on training on Electrophoretic Techniques (19 Jan 2016) State Level Training Workshop on Grafting Techniques (25 Aug 2015) Regional Level Workshop on Value added food Products (22 Jul 2015) Workshop on Electron Microscopy for the PG Students and the Research Scholars (25 Jul 2016)

12	Self-Assessment of the Impact of FIST support: Continued..... Please specify, if any of the following activity emerged / improved as a consequence of the FIST support
	Aspects
	e. Any training program / workshop organized by the department during the period of report, specifically those involving the newly created facility Science Academies Sponsored Refresher Course on Experimental Biology: Orthodox to Modern (7 – 19, Nov 2016) One Day State Level Workshop on Plant Tissue Culture Techniques (8 Feb 2017) International Seminar on Frontiers in Biological Sciences - ISFBS '16 (16 Dec 2016) National Symposium on Medicinal and Aromatic Plants - NASYMP' 17 (15 Feb 2017)

13	Is any problem faced in utilization of the grant / facilities?
	No

A Report Highlighting the Research Activities of the Department

during the period under review, may also be provided

Research Profile of the Department of Botany		
Research Program	Ph.D	M.Phil
No. of Scholars	24	4
Areas of s and the Guides	Research Works in the following Thrust Areas 1. Taxonomy Dr. S Soosairaj, Dr. R Senthikumar, Dr. Y Justin Koilpillai 2. Microbiology (Dr. J John, Dr. R Jayachandran, Dr. G Melchias, Dr. T Francis Xavier) 3. Phytochemistry (Dr. S Sahaya Sathish, Dr. A Egbert Selwin Rose, Dr. M Francis Sathyaseelan, Dr. H David Raja)	
Success rate of Scholars per year	3 per year	3 year
Total Number of Papers Published during 2015- 2017	68	

FIST PROGRAM

PROJECT No.
SR / FIST / College-214 / 2014(C) dated 16th June 2015

PROJECT COMPLETION REPORT (FOR THE YEARS 2015 – 2017)

PG and Research Department of Chemistry

Submitted to
Department of Science & Technology



सत्यमेव जयते
Department of Science and Technology
Ministry of Science and Technology
Government of India



October 2018

ST. JOSEPH'S COLLEGE (AUTONOMOUS)

175 years of Educational Excellence
Accredited at 'A' Grade (3rd Cycle) by NAAC
DBT-STAR & DST-FIST Sponsored College
Special Heritage Status Awarded by UGC
TIRUCHIRAPPALLI 620002

**DST – Fund for Improvement
in Science and Technology Infrastructure (FIST 2014)
Department of Chemistry
School of Physical Sciences**

FORMAT 1

Brief Outline of the Department

- The Department was established in 1906 with the Under-graduate programme
- The Postgraduate programme in chemistry was started as early as 1960
- The Department initiated its Ph.D. Programme in the year 1967
- One of the oldest departments that has been doing academic service by imparting chemistry education to the society locally and globally
- Presently about 300 students are studying B.Sc Chemistry, nearly 100 students study M.Sc Chemistry in both Shift I and Shift II.
- There are about 18 M.Phil and 8 Full-Time Ph.D Scholars doing research in Chemistry
- It is one of the Departments that has received the DBT-Star Status

Teaching and Research Activities

- Teaching core chemistry (Theory and Practicals) at the UG and PG programmes
- The chemistry curriculum involves Choice-Based-Credit-System (CBCS)
- Teaching is done by chalk-and-talk method and employing ICT tools
- Microlevel Techniques are incorporated in practicals
- The curriculum has formative and summative assessments. The formative assessment is done as a continuous assessment and the summative assessment is the semester examination
- Postgraduate students of Chemistry do mini-research project in the final semester
- CSIR NET & GATE coaching classes are conducted for PG Chemistry students, every year for about 6 months (July – December)
- IIT-JAM coaching classes are conducted for UG Chemistry Students, every year during for 3 months (January - March)

- M.Phil is a one-year research programme. It has one semester course work comprising four theory papers and one semester project work.
- The M.Phil project work is assessed based on the viva-voce examination

- Ph.D in chemistry is offered as a full-time or a part-time programme. It has the course work comprising three papers for the first year. The actual research work for the rest of the years
- The research works are duly published in scientific journals before submission of the Thesis
- The Thesis is evaluated by the Three Examiners including the Guide.
- The Following are the thrust areas of research – *Adsorption Studies, Coordination Chemistry, Corrosion Studies, Electroorganic Synthesis, Environmental Chemistry, Macrocyclic Chemistry, Microwave-assisted Synthesis, Natural Products Chemistry, Oxidation Kinetics, Physical Chemistry, Synthetic Organic Chemistry*

Facilities Created

- Chemistry Labs are equipped with the following Instruments, mainly for teaching and to some extent for research purposes

S.No.	Laboratory & Equipments	Details
1	Chemical Instrumentation Lab FT-IR Spectrophotometer, UV-VIS Spectrometer, Electrochemical Analyser, Polarimeter, HPLC	The instruments are used for the mini-research project work by the PG Chemistry students Research Scholars use these facilities for their work
2	M.Sc Chemistry Labs (2) Digital Balance, Hot-Air Oven Muffle Furnace, Potentiometer, Conductometer, Thermostat, Deionizer, Fume Chamber	These equipments are used for the regular practicals by the PG Students and for the project works
3	B.Sc Chemistry Labs (2) Digital Balance, Hot-Air Oven Muffle Furnace, Potentiometer, Conductometer, Thermostat Deionizer	These equipments are used for the regular practicals by the UG Students and for the project works
4	Research Labs <i>Hot-air Oven, Digital Balance, Muffle Furnace, Heating Mantle, Thermostat, UV-Chamber, Guoy Balance, High Vacuum Pump, Refrigerator, Electromotor, Water-bath, Double Distiller, Kjeldhal's Apparatus</i>	These equipments are used for the practicals by the PG Students and for their project works Ph.D and M. Phil Scholars use these facilities for their research works



Centrifuger



Hot-air Oven



Muffle Furnace



Digital Balance



Melting-point Apparatus



Fume Chamber

Instruments purchased through DST-FIST 2015 Fund



Potentiometer



Digital Balance



Fume Chamber



Deionizer



Computer Lab

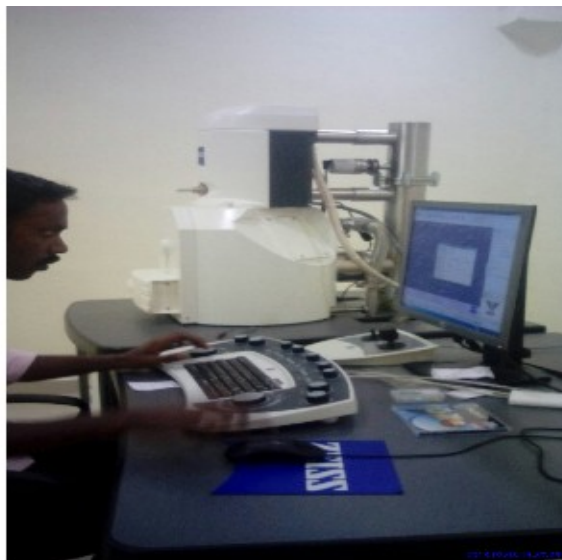


Dept Library

Instruments purchased through DST-FIST 2007 Fund

- **Sophisticated Instrumentation Facility**

S.No.	Laboratory & Equipments	Details
1	Scanning Electron Microscope	Utilized by the PG students and the Research Scholars (Ph D and M Phil) for doing surface morphological studies 2D maging of solid samples with the resolution of 3-4.5nm



Scanning Electron Microscope – Instrumentation Centre

Instruments purchased through DST-FIST 2015 Fund

S.No.	Laboratory & Equipments	Technical Details
1	Scanning Electron Microscope CARL ZEISS – EVO 18 – MA 15 SEM	SEM – 5 Axis Motorized Stage Large specimen Chamber SE-BSE Detectors Manufacturer: Carl Zeiss Microscopy Ltd., 509, Coldhams Lane Cambridge CB 1 3JS United Kingdom <u>Contact Details</u> Local Agent / Supplier: Carl Zeiss India (Bangalore) Pvt Ltd., No. 119, II Floor, Opp. Savera Hotel, Dr. Radhakrishna Salar Mylapore, Chennai 600 004 Tamilnadu, India <u>Contact Details</u> Actual Cost: GBP 60500 INR 6016137.00 Date of Order: Date of Purchase:

Funding

- The Details of funding are given here.

Details of Grants: Grant for the College as a whole			
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000

Pro-forma for Report for utilization of FIST support

S.No.	Aspects	Details
1	Name of the Department and University	Chemistry, St. Joseph's College (Autonomous) Tiruchirappalli 620002 Bharathidasan University, Tiruchirappalli 620024
2	Address for Communication Name and Address of the Head of the Dept with e-mail and telephone	Dr M Amaladasan Head, Dept. of Chemistry St. Joseph's College (Autonomous), Trichy 620002 e-mail: mamaladasan@gmail.com telephone: 0431-4226390
3	Date and Ref. No. of DST Sanction Letter	SR/FIST/College-214/2014(C) dated 16 th June 2015

4	Details of Grants: Grant for the College as a whole		
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000

5	Equipment ordered / purchased /installed			
	Name (Model & Make)	Order Date	Installation Date	Cost in INR
5.1	Oval Universal Super Delux Lts 224 1 No. NSW Size-Inside-Chamber Stainless Steel (Model:OSS-5) WxDxH 605x605x605MM	12/09/15	24/11/15	84,990.00
5.2	Oval Universal Super Delux Lts 95 1 No. NSW Size-Inside-Chamber Stainless Steel (Model:OSS-3) WxDxH 455x455x455MM	12/09/15	24/11/15	59,667.00
5.3	High Temperature Furnace 2 No. NSW Size-Inside-Chamber Stainless Steel (Model:THF-2) WxDxH 255x255x255MM 3.0kw	12/09/15	24/11/15	1,73,576.00
5.4	Centrifuge Machine 12 No. Hand Operated for 4 tubes-Aluminium Metal Body and Head Ball Bearing Heavy	12/09/15	24/11/15	13,740.00

5	Equipment ordered / purchased /installed			
	Name (Model & Make)	Order Date	Installation Date	Cost in INR
5.5	Digi Melt Digital Melting Point Apparatus MPA-161 Type:4 Digit LED WxHxD 6.5x9.5x5.3	12/09/15	24/11/15	1,84,244.00
5.6	Floor Model Fume Hood Size 3'(i)x2(W)x8(H) Bed size: 1400x700mm Motor 1HP 3 phase / Kirlosker RPM-1380 Temp 18-60C / Pressure 2.5WG	12/09/15	24/11/15	96,117.00
5.7	Wighing Balance ATY-224 Shimazu	12/09/15	16/09/15	1,71,990.00
5.8	Clinical Centrifuge Machine	12/09/15	31/12/15	61,845.00
	Total			8,46,179.00

6	Details of Infrastructure developed	
	<i>FIST before 2015</i>	<i>FIST 2015-2017</i>
	Instrumentation Lab FT-IR Spectrophotometer, UV-VIS Spectrometer, Electrochemical Analyser, Polarimeter, HPLC	Chemistry Labs Digital Balance, Hot-Air Oven Muffle Furnace, Centrifuge Machine, Digital Melting Point Apparatus

7	Details of Networking
	No networking facility is created as there is no funding admitted in the first instalment. Networking facility will be realized, if the funding is allotted exclusively, in the subsequent instalment(s).

8	Utilization of the facilities created under FIST	
	<i>For Teaching</i>	<i>Details of utility</i>
	Hot-air Oven, Digital Balance & Muffle Furnace,	PG and UG Practicals: Gravimetry and Titrimetry
	Centrifuge Machine,	PG and UG Practicals: Qualitative Analysis
	Digital Melting Point Apparatus	PG and UG Practicals: Determination of melting point

8	Utilization of the facilities created under FIST	
	<i>For Reseach</i>	<i>Details</i>
	<p>The following are the Research Groups:</p> <p><i>Adsorption Studies & Corrosion Studies</i> <i>Oxidation Kinetics</i> (Dr Pascal Regis)</p> <p><i>Coordination Chemistry,</i> <i>Macrocyclic Chemistry,</i> (Dr. M Amaladasan, Dr A Paulraj)</p> <p><i>Electroorganic Synthesis</i> (Dr. S Antony Sakthi)</p> <p><i>Environmental Chemistry,</i> (Dr A Edwin Vasu, Dr A Simi)</p> <p><i>Microwave-assisted Synthesis,</i> (Dr A N Paul Angelo)</p> <p><i>Natural Products Chemistry,</i> (Dr V Alex Ramani, Dr. A S Stella Shalini),</p> <p><i>Physical Chemistry</i> (Dr A Rose Venis)</p> <p><i>Synthetic Organic Chemistry</i> Dr K Joseph Santharaj, S Joseph Selvaraj</p>	<p>The available facilities at the Department, at the Sophisticated Instruments Centre (ACIC) are used based on the need</p>

9	Details of full length research publications (in peer-reviewed journals) for the year 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr J Joseph Santhanaraj		
	Discovery of Novel GSK-3 β inhibitors using pharmacophore and virtual screening studies <i>Interdiscip. Sci. Comput. Life Sci.</i>	International	DOI: 10.1007/s12539-015-0100-4
	In silico studies on new indazole derivatives as GSK-3 β inhibitors <i>International journal of pharmacy and pharmaceutical sciences</i>	International 0975-1491	Vol. 7, Issue 3, 295-299, 2015,
	In vitro Antioxidant Activity of <i>Cissus vitifolia</i> Leaves <i>World Journal of Science and Research</i>	International 2455-2208	44-49, 1(1), 2015
	Electrocatalytic Oxidative Side Chain Bromination of Alkyl Aryl Ketones <i>International Journal of Research in Pharmacy and Chemistry</i>	International 2231-2781	843-48, 6(4), 2016
	Electroselective α -bromination of acetophenone using in situ bromonium ions from ammonium bromide <i>RSC Advances</i>	International	35602-08, 6, 2016
	Gas chromatography and mass spectroscopic determination of phytochemicals in <i>Cissus vitifolia</i> leaf <i>Der Pharmacia Letters</i>	International 0975-5071	292-97, 8(1), 2016
	Analysis of Bio-Active Compounds and Elements in <i>Cissus vitifolia</i> Leaf Extract <i>International Journal of Scientific Research</i>	International 2277-8179	5(10), 2016
	Molybdenum disulfide nanosheet coated multiwalled carbon nanotubes composite for highly sensitive determination of chloramphenicol in food samples milk, honey and powdered milk <i>Journal of Colloid and Interface Science</i>	International 0021-9797	129-36, 485, 2017
	Dr M Amaladasan		
	Synthesis, characterization and biological evaluation of unsymmetrical 12 membered pentazamacrocyclic complexes <i>International journal of innovative research in science, engineering and technology</i>	International 2347-6710	5(2): 2053-2059 (2016)
	Synthesis, characterization and biological screening of 10 membered Tetraazamacrocyclic cobalt complex against drug resistant bacterial pathogens <i>International Journal of Advanced Scientific Research and Development</i>	International 2395-6089	Vol. 02, Issue 04, 112-120, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr A Paulraj		
	Synthesis and Characterization of new Mannich Base Ligand (SAP) and Co(II), Ni(II), Cu(II) and Zn(II) Metal Complexes <i>Asian Journal of Biochemical and Pharmaceutical Research</i>	International 2231-2560	209, 4, 2015
	Surface chemical and textural modifications of activated carbon prepared from wastewood shavings by wet oxidations <i>Chemical Science Transactions</i>	International 2278-3458	4(4): 1107-1115 (2015)
	Removal of Rhodamine B and congo red from aqueous solutions by adsorption onto activated carbons <i>Chemical Science Transactions</i>	International 2278-3458	5(1): 87-96 (2015)
	Synthesis and Characterization of New Mannich Base of 1-[(2-Hydeoxy-phenyl)-Phenyl Amino-Methyl]-Pyrrole-2-5-dione (L) with some Transition Metal Complexes <i>Asian Journal of Biological and Pharmaceutical Research</i>	International 0974-4290	176-181, 9(2), 2016
	Dr. A. Peter Pascal Regis		
	Removal of Congored dye by adsorption using activated ipomoea carnea <i>International Journal of Nano Corrosion Science and Engineering</i>	International 2395-7018	2(5): 39-48 2015
	Inhibition of corrosion of carbon steel in well water by sodium molybdate – Zn ²⁺ -A phosphonic acid system <i>Researcher</i>	International 1553-9865	7(3): 66-73 2015
	Influence of aloe vera Extract on Corrosion Inhibition of mild steel in well water <i>RETELL</i>	National 0973-404X	19-29, 15, 2015
	Inhibitive Properties of Sodium Molybdate – Zn ²⁺ System and its Synergism with Galic Extract <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	International 2278-4357	921-938, 5, 2016
	Dr V Alex Ramani		
	Phytochemical screening and antimicrobial studies on the medicinal plant <i>Flueggea Leucopyrus (willd)</i> <i>World journal of pharmacy and pharmaceutical sciences</i>	International 2278-4357	Vol. 4, Issue 09, 717-726, 2015
	Phytochemical screening and antimicrobial studies on the medicinal plant <i>Vitex Altissima L.</i> <i>World journal of pharmacy and pharmaceutical sciences</i>	International 2278-4357	Vol. 4, Issue 09, 705-716, 2015
	Phytochemical and GC-MS analysis of methanolic extract <i>Pisonia Grandis R.Br</i> <i>International Journal of chemical sciences</i>	International 0972-768X	13(3), 1295-1304, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr S Joseph Selvaraj		
	Deoimination of p-substituted Benzaldoxmes in Biphasic Medium using Platinum electrode <i>Internatonal Journal of Medicobiological Research</i>	International 0976-8971	437-39, 1(8), 2016
	A Novel Benign Electrochemical Reaction of Benzaldoximes with Perchlorate Salts <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	International 2278-4357	849-53, 5, 2016
	Dr A N Paul Angelo		
	synthesis and characterization of [16]-membered dioxa diaza naphthaldehyde based macrocyclic ligand and its complexes of Co(iii), Ni(ii) and Cu(ii) perchlorate ions <i>International Journal of Pharmaceutical Sciences and Research</i>	International E-0975-8232; P-2320-5148	Vol.6(11): 4895-4903, 2015
	Dr A Rose Venis		
	Molecular interactons in Ternary Liquid Mixtures of 1,2-dichlorobenzene with Cyclohexane and Toluene at 318K <i>World Journal of Pharmacy and Parmaceutical Sciences</i>	International 2278-4357	1602-09, 5, 2016
	Molecular Interaction Studes on Bnary Liquid Mixtures of dichloromethane with o-Xylene, p-Xylene and m-Xylene at 308.15K <i>Asian Journal of Biochemical and Parmaceutical Research</i>	International 2231-2560	33, 6, 2016
	Study on Thermodynamic Properties of Ternary Liquid Mixtures of 1,2-dichlorobenzene with Benzyl chloride and Cyclohexane at 308.15K <i>International Journal of Medicobiological Research</i>	International 0976-8971	419-22, 8, 2016
	Molecular interaction Studies on Binary Liquid Mixtures of 1,2-Dichlorobenzene and Toluene at 308.15K ReTeLL	National 0973-404X	38, 15, 2016
	Dr A S Stella Shalini		
	Synthesis, characterization and biological screening of 10 membered Tetraazamacrocyclic cobalt comples against drug resistant bacterial pathogens <i>International Journal of Advanced Scientific Research and Development</i>	International 2395-6089	Vol. 02, Issue 04, 112-120, 2015
	Synthesis, characterization and biological evaluation of unsymmetrical 12 membered pentazamacrocyclic complexes <i>International journal of innovative research in science, engineering and technology</i>	International 2347-6710	5(2): 2053- 2059 (2016)
	Dr A Simi		
	Liquid Crystalline Carborane Diester Molecules: Structure and Ultraviolet Absorption Behavior based on DFT and Semiempirical Methods <i>International Advanced Research Journal in Science, Engineering and Technology</i>	International 2394-1588	Vol. 2, Issue 11, November 2015
	Estimation of Spectral Shifts of Fluorinated Liquid Crystals n Ultraviolet Region: Role of Correlations in Molecular Structures <i>Journal of Optoelectronic and Advanced Materials</i>	International 1454-4164	1-2, 19, 2017

9 Details of full length research publications (in peer-reviewed journals) for the year 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Page, Vol. & Year
	Dr S Britto		
	2-Amino-4-methoxy-6-methylpyrimidin-1-um Trifluoroacetate <i>IUCr Data</i>	International 2414-3146	X161010, 1, 2016
	Dr A John Jeevagan		
	<u>Facile route for the preparation of ordered intermetallic Pt3Pb–PtPb core–shell nanoparticles and its enhanced activity for alkaline methanol and ethanol</u> <i>Journal of Power Sources</i>	International 0378-7753	273, 990- 998, 2015
	Photocatalytic decomposition of various organic compounds over WO ₃ -supported ordered intermetallic PtPb co-catalysts <i>Applied Catalysis B: Environmental</i>	International 0926-3373	181, 475-480, 2016
	Mr C Rajarathnam		
	Mr. C. Rajarathinam Inhibitive Properties of Sodium Molybdate – Zn ²⁺ system and its Synergism with Garlic Extract <i>World Journal of Pharmacy and Pharmaceutical Sciences</i>	International 2278-4357	921-38, 5, 2016
	Dr A Leo Standly		
	Electrosynthetic studies on ethoxylation at graphite and platinum anodes <i>International of Chemistry and Pharmaceutical Sciences</i>	International 2321-3132	4(2): 11-15, 2016

10 Sponsored research projects in operation during the period 2015-16				
S.No.	Name of the Investigator	Title of the Project	Funding Agency	Amount Rs.
1	Dr A N Paul Angelo	Design, Microwave Assisted Synthesis Characterization and Electrochemical Investigation of Potential Sequestrands for the isolation of Radioactive Lanthanide and Actinide metal ions	UGC-DAE CSR	6,26,000
2	Mr. A. Antony Sakthi	Synthetic studies on aniodic ethoxylation of heterocyclic compounds	UGC	1,56,000
3	Mr.C. Rajarathinam	A Novel Electrochemical Approach to Corrosion Control By Phosphonic Acids	UGC	2,45,000
4	Mr. A. Arun Joseph Rosario	A Novel Electro synthetic Approach on Acetoxylation of Alkyl Aromatic Compounds	UGC	4,60,000
Sponsored research projects in operation during the period 2016-2017				
5	Dr. S Joseph Selvaraj	Electrochemical Oxidation and Reduction of Oximes in Biphasic Medium	UGC	1,90,000
6	Dr A Rose Venis	A Study on Nature of Molecular Interactions in Liquid mixtures involving ionic liquids and organic solvents	UGC	1,80,000

11	Utilization of Equipment from outside the department	
	The equipments are not used for Scholars / Students from outside the department	
12	Self-Assessment of the Impact of FIST support: Please specify, if any of the following activity emerged / improved as a consequence of the FIST support	
	a. New class-room experiments at B.Sc / M.Sc or other levels	
	b. Success of students at national level tests (varous PG / PhD entrance tests and test for JRF, etc.)	
	The following Students, qualified NET: 2014-15: Arokiyadoss P (133071) Gurunathan V (134813) 2015-16: Justice D (126107) Vimala V (128937)	The following Students, qualified GATE 2014-15: Prabaharan T (CY710501074) Arokiyadoss P (CY10601212) 2015-16: Thiyagarajan S (CY77078S1152) Ragupathi S (CY706038-M2)
	The following students, qualified JAM/Other Exams 2014-15: BDU PG URE Christhuran S 2017-18: JAM S. Simon Ranjith Kumar Joe Sam K 2017-18: BDU PG URE Simon Abishek S Esokkia A	
	c. Any new research project that emeged on the basis of the FIST support	
	d. Did the newly created facility lead to betterment of quality of research publications	
	PhD Completed 2014-15: 6, 2015-16: 12, 2016-17: 4	M.Phil Completed 2014-15: 16, 2015-16: 12, 2016-17: 15
	e. Any training program / workshop organized by the department during the period of report, specifically those involving the newly created facilty Workshop on Chemical Instrumentation conducted on NET-SET Coaching Programme (July – November 2016) every year Computer Skill Training Programme for Chemistry Students during National Conference on Recent Advances in Chemistry Research and its Applications (19 Jan 2017) Rev Dr Mathew J Moollel and Dr SJ Arulraj Endowment Lectures (19 Dec 2017)	
13	Is any problem faced in utilization of the grant / facilities?	
	No	

A Report Highlighting the Research Activities of the Department

during the period under review, may also be provided

Research Profile of the Department of Chemistry		
Research Program	Ph.D	M.Phil
No. of Scholars	80 (both part-time & full-time)	20 (full-time, only)
Areas of Research	<i>Adsorption Studies, Coordination Chemistry, Corrosion Studies, Electroorganic Synthesis, Environmental Chemistry, Macrocyclic Chemistry, Microwave-assisted Synthesis, Natural Products Chemistry, Oxidation Kinetics, Physical Chemistry, Synthetic Organic Chemistry</i>	<i>Adsorption Studies, Coordination Chemistry, Corrosion Studies, Electroorganic Synthesis, Environmental Chemistry, Macrocyclic Chemistry, Microwave-assisted Synthesis, Natural Products Chemistry, Oxidation Kinetics, Physical Chemistry, Synthetic Organic Chemistry</i>
Success rate of Scholars per year	3 per year	20
Total number of Research Papers, published during 2015 - 2017	37	

FIST PROGRAM

PROJECT No.
SR / FIST / College-214 / 2014(C) dated 16th June 2015

PROJECT COMPLETION REPORT (FOR THE YEARS 2015 – 2017)

PG and Research Department of Computer Science

Submitted to
Department of Science & Technology



सत्यमेव जयते
Department of Science and Technology
Ministry of Science and Technology
Government of India



October 2018

ST. JOSEPH'S COLLEGE (AUTONOMOUS)

175 years of Educational Excellence
Accredited at 'A' Grade (3rd Cycle) by NAAC
DBT-STAR & DST-FIST Sponsored College
Special Heritage Status Awarded by UGC
TIRUCHIRAPPALLI 620002

**DST – Fund for Improvement
in Science and Technology Infrastructure (FIST 2014)
Department of Computer Science
School of Computing Sciences**

FORMAT 1

Brief Outline of the Department

- 1983: B.Sc(Computer Science) started
- 1984: MCA program was started
- 2000: M.Phil(Computer Science) started
- In 1983 St. Joseph's College and Nehru Memorial College in Puthanampatti started the B.Sc Computer Science course – the first to start the course.
- In 1984 St. Joseph's College, PSG Tech-Coimbatore, Anna University-Chennai and REC, Trichy (Now, National Inst. Of Technology) were permitted to start the MCA course – The first one among arts and science colleges to start MCA.
- In the year 2000, again St. Joseph's is the first one to start M.Phil in Computer Science in Bharathidasan University, Trichy.
- St. Joseph's College produced the first Ph.D in Computer Science in Bharathidasan University, Trichy.
- Till date, St. Joseph's produced maximum number of Doctorates in Computer Science in Bharathidasan University and also the M.Phil in Computer Science.
- CS department is the first one to receive PG grant in Bharathidasan University.

Teaching and Research Activities

- The department is involved in teaching Core-Computer Science to B.Sc Computer Science and Bachelor of Computer Applications. Computer Science as Allied subject taught to the students of B.Sc Physics.
- Computer Literacy Course is offered to all the UG Students to propagate the fundamental knowledge about the computer and its applications.
- Teaching core and Elective subjects under PG program.
- The methods of teaching in chalk and Talk Method, power point presentation, video conferencing.
- Conduct workshop and endowment lectures and National conference.
- Research scholars attend work shop, National conference and present papers.
- Internship given to UG and PG Students to have the field exposure.

Facilities Created

- Every year 20 to 25 new computers are replaced in our computer center. For example, Pentium based systems are replaced with Intel I3 processor based systems and I5 based systems replace I3 processor based systems. .

S.No.	Laboratory & Equipments	Details
1	Fr Savariraj Computer Science Lab	* It is equipped with 90 Terminals and connected the Blade Server at ICT * C++, JAVA, ASP.Net, Distributed Computing Practical courses are conducted for PG Students of Computer Science
2	Fr Erhart Computer Science Lab	* It is equipped with 160 Terminals and connected the Blade Server at ICT * C++, Php, JAVA, RDBMS, ASP.Net Practical Courses are conducted for UG Students of Computer Science
3	ICT	* It is equipped with Blade Servers to support all the Computers of the College, including the Computers, at the Computer Science Labs

- **Sophisticated Instrumentation Facility**

S.No.	Laboratory & Equipments	Details
1		

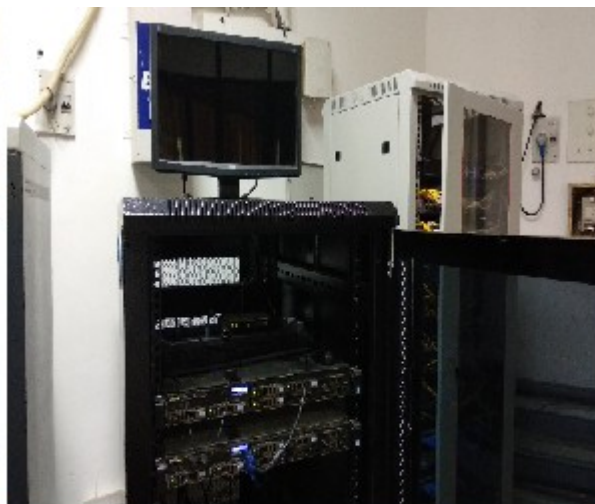
Funding

- The Details of funding are given here.

Details of Grants: Grant for the College as a whole			
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000



DELL SERVER & PROCESSORS



DELL SERVER & PROCESSORS

Instruments purchased through DST-FIST 2015 Fund

Pro-forma for Report for utilization of FIST support

S.No.	Aspects	Details
1	Name of the Department and University	Department of Computer Science St. Joseph's College (Autonomous) Tiruchirappalli 620002 Bharathidasan University, Tiruchirappalli 620024
2	Address for Communication Name and Address of the Head of the Dept with e-mail and telephone	Dr D P Jeyapalan Head, Dept. of Computer Science St. Joseph's College (Autonomous), Trichy 620002 e-mail: dpjeyapalan@gmail.com telephone: 0431-422 Mobile: 9443374051
3	Date and Ref.No. Of DST Sanction Letter	SR/FIST/College-214/2014(C) dated 16 th June 2015

4	Details of Grants: Grant for the College as a whole		
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000

5	Equipment ordered / purchased /installed			
	Name (Model & Make)	Order Date	Installation Date	Cost in INR
5.1	Desk Top DELL Server			2,93,000.00
5.2	Intel 1790K Processor			72,000.00
5.3	Intel IS 4460 Processor			4,25,600.00

6	Details of Infrastructure developed	
	<i>FIST before 2015</i>	<i>FIST 2015-2017</i>
		JCICT, added with the Facilities – DELL Server and Intel 1790K & IS4460 Processors

7	Details of Networking
	<ul style="list-style-type: none"> • Internet is available to students through a common browsing center with 150 computers. • WiFi is enables at 72 locations inside the campus.

8	Utilization of the facilities created under FIST	
	<i>For Teaching</i>	<i>Details of utility</i>
	Softwares: GIMP, SYNFIG, APTANA, C-Programming, R-Programming, LAMP, Adobe-based Softwares, VISIO Design	Practicals, given for UG and PG Students

8	Utilization of the facilities created under FIST	
	<i>For Reseach</i>	<i>Details</i>
	Softwares: MATLAB, LATEX, GIMP, SYNFIG, APTANA, and C-Programming, R-Programming, LAMP, Adobe-based Softwares, VISIO Design	Facilities are used by the Reseach Scholars- M.Phil and Ph.D. programmes

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Mr D S Ravi		
	A Study of Learning Standards in E-Learning using Artificial Intelligence <i>International Journal of Advanced Research Trends in Engg. and Technology</i>	2394-3777	3, 2016
	Dr S Albert Rabara		
	An Integrated Inter-Mobility IPv4/IPv6 Address Translation Architecture for Corporate Networks <i>IEEE Sponsored 9th International Conference on Intelligent Systems and Control (ISCO 2015) in association with National University of Kaohsiung-Taiwan, Oakland University-USA, IEEE Computational Intel</i>	978-1-4799-6479-6	103-109, 2015
	An Integrated Seamless Mobility and IPv4/IPv6 Address Translation Architecture between IPv4 and IPv6 Networks <i>Journal of Recent Research in Engineering and Technology (JRRET)</i>	02349-2252	2(4), 142-151, 2015
	An Integrated Security Architecture for Next Generation Networks <i>International Journal of Computer Applications (IJCA)</i>	0975-8887	1, 1-6, 2015
	Design and Development of Integrated, Secured and Intelligent Architecture for Internet of Things and Cloud Computing <i>IEEE IEEE Xplore Digital Library Pages: 2015</i>	978-1-4673-8103-1	DOI: 10.1109/FiCloud.2015.23, 817-822, 2015
	Internet of Things (IoT) based Smart Environment Integrating various Business Applications <i>International Journal of Computer Applications (IJCA)</i>	0975-8887	128, 32-37, 2015
	Internet of Things (IoT) Architecture for Smart Services <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562	10, 543-548, 2015
	An Integrated Secure Architecture for IPv4/IPv6 Address Translation Between IPv4 and IPv6 Networks <i>Advances in Intelligent Systems and Computing, Springer</i>	978-81-322-2522-5	380, 669-679, 2015
	An Integrated Secure Inter-Mobility IPv4/IPv6 Address Translation Architecture for Corporate Networks <i>International Journal of Future Computer and Communication (IJFCC)</i>	2010-3751	4(5), 316-319, 2015
	Quality of Service Architecture for Internet of Things and Cloud Computing <i>International Journal of Computer Applications (IJCA)</i>	0975 - 8887	128(7), 23-28, 2017
	Elliptic Curve Cryptography based Security Framework for Internet of Things and Cloud Computing, <i>International Journal of Computer Science and Technology (IJCST)</i>	2229-4333/0976-8491	6, 223-229, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
Dr S Albert Rabara			
	An Architecture For Secure Mobile Database Transaction For Corporate Environment <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562I	10, 14813-828, 2015
	Elliptic Curve Cryptography based Security Framework for Internet of Things (IoT) Enabled Smart Card <i>IEEE INTERNATIONAL CONFERENCE WCCCT-2017</i>	978-1-5090-5573-9/16	43-46, 2017
	A Secure Architecture for Mobile Web Service (SAMWS) <i>IEEE INTERNATIONAL CONFERENCE WCCCT-2017</i>	978-1-5090-5573-9/16	207-211, 2017
	Enhanced Security Architecture for IPv6 Transition <i>IEEE INTERNATIONAL CONFERENCE WCCCT-2017</i>	978-1-5090-5573-9/16	61-64, 2017
	Algorithmic Approach to security Architecture for Integrated IoT Smart Services Environment <i>IEEE INTERNATIONAL CONFERENCE WCCCT-2017</i>	978-1-5090-5573-9/16	24-29, 2017
Dr L Arockiam			
	Big Data Migration in the Cloud Environment - An Overview <i>IJCA Proceedings on International Conference on Advanced Computing and Communication Techniques for High Performance Applications ICACCTHPA 2014</i>	0975-8887	5, 16-20, 2015
	A Review on Big Data Integration <i>IJCA Proceedings on International Conference on Advanced Computing and Communication Techniques for High Performance Applications ICACCTHPA 2014</i>	0975-8887	5, 21-26, 2015
	AROMONcrypt: A Technique to Optimize the Security by Ensuring the Confidentiality of Outsourced Data in Cloud Storage <i>Elixir International Journal</i>	2229-712X	9535-2959, 2015
	Data Integration in Big Data Environment <i>Bonfring International Journal of Data Mining</i>	2277-5048	5, 1-5, 2015
	Big Data for Education in Students` Perspective <i>IJCA Proceedings of International Conference on Advanced Computing and Communication Techniques for High Performance Applications (ACCPTHA 2014)</i>	0975-8887	4, 11-17, 2015
	HMM_MLCS: Hidden Markov Model (HMM) based algorithm to identify Multiple Longest Common Subsequence (MLCS) in DNA Sequences <i>Journal of Chemical and Pharmaceutical Sciences (JCHPS)</i>	0974-2115	8, 881-886, 2015
	A Novel Edu-CloudSec Framework for E-Learning <i>IJCA Proceedings of International Conference on Advanced Computing and Communication Techniques for High Performance Applications (ACCPTHA 2014)</i>	0975-8887	4, 41-46, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr L Arockiam		
	A Novel Approach for Ensuring Data Confidentiality in Public Cloud Storage <i>IJCA Proceedings of International Conference on Advanced Computing and Communication Techniques for High Performance Applications (ACCPHTA 2014)</i>	0975-8887	5, 1-5, 2015
	Cost Aware Dynamic Rule Based Auto-scaling of Infrastructure-as-a-Service in Cloud Environment <i>IJCA Proceedings of International Conference on Advanced Computing and Communication Techniques for High Performance Applications (ACCPHTA 2014)</i>	0975-8887	4, 35-40, 2015
	A Unified Cloud Authenticator for Mobile Cloud Computing Environment <i>IJCA Proceedings on International Conference on Advanced Computing and Communication Techniques for High Performance Applications (ACCPHTA 2014)</i>	0975-8887	4, 29-34, 2015
	AROCrypt: A Confidentiality Technique for Securing Enterprises` Data in Cloud <i>International Journal of Engineering and Technology (IJET) (Scopus)</i>	0975-4024	7, 245-253, 2015
	Parallelized Contextual Valance Shifter Algorithm for Sentiment Analysis on Big Data <i>International Journal of Advanced Research in Computer Science and Software Engineering (IJARCSSE)</i>	2277 128X	5, 590-595, 2015
	A Hybrid Approach for Aspect Based Sentiment Analysis on Big Data <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0056	2, 1-5, 2015
	Dynamic Key Based User Authentication (DKBUA) Framework for MobiCloud Environment <i>International Journal of Computer and Communication System Engineering (IJCCSE)</i>	2312-7694	2, 671-675, 2015
	Virtual Machine Behavior Identifier (VMBI) for VM Level Auto-scaling in Cloud Environment <i>International Journal of Emerging Technology and Advanced Engineering (IJETAE)</i>	2250-2459	5, 255-260, 2015
	Improved Parallel Time Series Based Algorithm for Big Data using MapReduce Programming Model <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562	10, 791-796, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr L Arockiam		
	Load Pattern Identifier (LoPI) for Threshold Based Auto-scaling in Cloud Environment, <i>International Journal of Emerging Research and Technology (IJERT)</i>	2278-0181	10, 460-466, 2015
	A Predictive Model to Forecast and Pre-Treat Diabetes Mellitus using Clinical Big Data in Cloud <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562	10, 55-59, 2015
	A Dynamic Two Stage Authentication Framework to Enhance Security in Public EduCloud, <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562	10, 126-131, 2015
	Issues and Challenges hampering the evolution of IoT big data analytics, <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562	10, 247-251, 2015
	Parallel Prediction Model for Big Data using MapReduce Programming Model, <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562	10, 286-291, 2015
	Confidentiality Framework to Enhance Data Security in Public Cloud Storage, <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562	10, 484-488, 2015
	Confidentiality Technique to Enhance Security of Data in Public Cloud Storage Using Data Obfuscation <i>Indian Journal of Science Technology</i>	0974-5645	8, 1-10, 2015
	Parallel Bottom-up Generalization Approach for Data Anonymization using Map Reduce for Security of Data in Public Cloud, <i>Indian Journal of Science Technology</i>	0974-5645	8, 1-9, 2015
	Analysis of Prediction Techniques in Time Series for Big Data using R, <i>International Journal of Applied Engineering Research</i>	0973-4562	10, 6712-6715, 2015
	AROMO Security Framework to Enhance Security of Data in Public Cloud <i>International Journal of Applied Engineering Research</i>	1087-1090	10, 6740-6746, 2015
	SBCOHC: An Optimized Task Scheduling Approach for Public Cloud Environment <i>International Journal of Applied Engineering Research</i>	1087-1090	10, 6807-6810, 2015
	A Novel Architectural Framework to Enhance Scalability in a Federated Heterogeneous Cloud Environment <i>International Journal of Applied Engineering Research</i>	1087-1090	10, 6854-6861, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr L Arockiam		
	Performance Evaluation of Task Scheduling in Cloud Environment Using Soft Computing Algorithms <i>International Journal of Computer Science and Network (IJCSN)</i>	2277-5420	4, 387-391, 2015
	AUTOPRED: An Architectural Framework to Predict the Service Requests to Enhance Scalability in Federated Clouds <i>International Journal of Electronics Communication and Computer Technology (IJECCCT)</i>	2249-7838	5, 15-20, 2015
	Enhanced Framework for Authentication as a Service to Ensure Security in Public Cloud Environment <i>International Journal of Engineering Research and Technology (IJERT)</i>	2278-0181	4, 442-445, 2015
	PBCOPSO: A Parallel Optimization Algorithm for Task Scheduling in Cloud Environment <i>Indian Journal of Science Technology</i>	0974-5645	8, 1-5, 2015
	A Study on Basic Concepts of Big Data <i>International Journal of Emerging Trends in Computing and Communication Technology (IJETCCT)</i>	2348-4454	1, 119-124, 2015
	A Survey on User Authentication Mechanism in Mobile Cloud Environment <i>International Journal of Emerging Trends in Computing and Communication Technology (IJETCCT)</i>	2348-4454	1, 114-118, 2015
	EnBloAES: A Unified Framework to Preserve Confidentiality of Data in Public Cloud Storage <i>Indian Journal of Science Technology</i>	0974-5645	8, 1-8, 2015
	A Study of User Authentication Techniques in Cloud Computing, <i>International Journal of Emerging Technologies and Innovative Research (IJETIR)</i>	2349-5162	2, 3309-3314, 2015
	An Improved Particle Swarm Optimization Algorithm for Meta Task Scheduling In Cloud Environment <i>International Journal of Computer Science Trends and Technology (IJCST)</i>	2347-8578	3, 108-112, 2015
	Applications of Big Data Analytics for Diagnosing Diabetic Mellitus: Issues and Challenges <i>International Journal of Resent Trends in Engineering and Research</i>	2455-1457	2(6), 454 -461, 2016
	A Study on Security Issues and Challenges in IoT <i>International Journal of Engineering Sciences and Management Research</i>	2349-6193	3(11), 34-43, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr L Arockiam		
	Decode_HMM_MLCS: An efficient algorithm to identify Multiple Longest Common Subsequence (MLCS) in Large DNA Sequences by using Decoding HMM <i>Journal of Chemical and Pharmaceutical Sciences (JCHPS)</i>	0974-2115	9(1), 59-64, 2016
	A Survey on Noisy Data Elimination Using Clustering Techniques <i>International Journal of Information Technology and Mechanical Engineering (IJITME)</i>	2349-2865	2(8), 11-17, 2016
	Energy Efficiency in Internet of Things: An Overview <i>INTERNATIONAL JOURNAL OF RECENT TRENDS IN ENGINEERING & RESEARCH</i>	2455-1457	2(6), 475-482, 2016
	EOCIPHER: A Hybrid Approach To Enhance Security Of Outsourced Data In Public Cloud Storage Proceeding of the 4th International Conference on Artificial Intelligence and Computer Science (AICS2016),28 - 29 November 2016, Langkawi, MALAYSIA	2289-5965	3, 33-42, 2016
	Performance Improved Holt-Winter`s (PIHW) Prediction Algorithm for Big Data Environment <i>International Journal on Intelligent Electronic System</i>	0973-9238	10(2), 23-31, 2016
	EDSHA: An Efficient Data Skew Handling Approach For Mapreduce Model Using Time Series Data <i>I J C T A (SCOPUS Indexed)</i>	0974-5572	7(27), 423-430, 2016
	Lexicon Based Approach to Enhance the Accuracy of Sentiment Analysis on Tweets <i>International Journal of Computer Science and Information Technology & Security (IJCSITS)</i>	2249-9555	6(3), 33-38, 2016
	Machine Learning Based Approach to Enhance the Accuracy of Sentiment Analysis on Tweets <i>International Journal of Advance Research in Computer Science and Management Studies</i>	2321-7782	4(5), 72-82, 2016
	Hybrid Based Approach to Enhance the Accuracy of Sentiment Analysis on Tweets <i>IJCSET</i>	2231-0711	6(6), 185-190, 2016
	Accentuating the necessity for new-fangled IoT missing data imputation technique, <i>International Journal of Computer Technology and Applications(I J C T A) (scopus indexed)</i>	0974-5572	9(27), 1-4, 2016
	Security in IoT Environment: A Survey <i>International Journal of Information Technology and Mechanical Engineering (IJITME)</i>	2349-2865	2(7),1-6, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr L Arockiam		
	A Novel Authentication Scheme for IoT enabled Smart Healthcare System <i>International Journal of Engineering Research & Technology(IJERT)</i>	2278-0181	4(29), 174-179, 2016
	Confidentiality Technique using Data Obfuscation to Enhance Security of Stored Data in Public Cloud Storage <i>International Journal of Advanced Research in Electronics and Communication Engineering (IJARECE)</i>	2278-909X	5(1), 169-174, 2016
	A Novel Lexicon Based Approach to Enhance the Accuracy of Sentiment Analysis on Big Data <i>International Journal of Emerging Research in Management and Technology (IJERMT)</i>	2278-9359	5(2), 80-86,
	Combining Lexicon and Machine Learning Based Approach to Enhance the Accuracy of Sentiment Analysis on Big Data <i>International Journal of Computer Science and Information Technologies (IJCSIT)</i>	0975-9646	5(2), 306-311, 2016
	Route Discovery Overhead Aware Routing Protocol for IoT to Enhance QoS <i>IJCTA (SCOPUS Indexed)</i>	0974-5572	9(27) 249-254, 2016
	Filling Fuel Quantity Measurement Systems Using Internet Of Things <i>International Journal of Innovative Research and Advanced Studies (IJIRAS)</i>	2394-4404	3(13), 152-154, 2016
	ARARO Framework for Confidentiality Techniques to Enhance Security of Numerical and Non-Numerical Data in Public Cloud Storage <i>IJIREEICE</i>	2321 - 2004	4(3), 32-37, 2016
	Authentication in IoT Environment: A Survey <i>International Journal of Advanced Research in Computer Science and Software Engineering (IJARCSSE)</i>	2277-128X	6(10), 140-145, 2016
	"QRIC: QoS Aware Routing for Internet of Things in College Management system" <i>International Journal of Engineering Research & Technology (IJERT)</i>	2278-0181	4(29), 37-39, 2016
	"QRIC: QoS Aware Routing for Internet of Things in College Management system" <i>International Journal of Engineering Research & Technology (IJERT)</i>	2278-0181	4(29), 37-39, 2016
	A Neoteric Authentication Scheme for IoT Healthcare System <i>International Journal of Engineering Sciences & Research Technology (IJESRT)</i>	2277-9655	5(12), 296-303, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr L Arockiam		
	Deist: Dynamic Detection of Sinkhole Attack for Internet of Things <i>International Journal of Engineering and Computer Science</i>	2319-7242	5(12), 58-62, 2016
	PAFHWKM: An Enhanced Parallel Approach to Forecast Time Series Data Using Holt-Winters and K-Means Algorithm <i>International Journal on Future Revolution in Computer Science & Communication Engineering</i>	2454-4248	3(8), 65-73, 2017
	A Pragmatic Study on Time Series Models for Big Data <i>International Journal of Emerging Research in Management & Technology</i>	2278-9359	6(8), 67-78, 2017
	EPC Based Authentication of Devices in the Smart Healthcare System <i>International Journal of Electrical, Electronics & Computer Science Engineering</i>	2348-2273	8(7), 6-11, 2017
	Intrusion Detection System to detect sinkhole attack on RPL protocol in Internet of Things <i>International Journal of Electrical Electronics and Computer Science Engineering</i>	2454-1222	4(4), 16-20, 2017
	Detection of outliers in the IoT data using the STCPOD model <i>International Journal of Engineering Research in Computer Science and Engineering</i>	2394-2320	4(10), 1-6, 2017
	A Secured Public key Exchange Technique for Elliptic Curve Cryptography <i>International Journal of Engineering Research in Computer Science and Engineering</i>	2394-2320	4(9), 72-77, 2017
	Research Issues on Data Security in Cloud Computing: A Survey <i>International Journal of Scientific Research in Computer Science Applications and Management Studies</i>	2319-1953	6(5), 1-6, 2017
	Architectural Framework for Resource Management in Fog Computing <i>International Journal of Engineering Research & Technology (IJERT)</i>	2278-0181	5(13), 151-154, 2017
	A Robust Architecture for Detecting Outliers in IoT Data using STCPOD Model <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	2(6), 659 – 664, 2017
	Imputing the Missing Values in IoT Using ESTCP Model <i>International Journal of Advanced Research in Computer Science</i>	0976-5697	8(9), 1-5, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr L Arockiam		
	TOPQoS : TENSOR Based Optimum Path Selection in Internet of Things to Enhance Quality of Service <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	2(6), 852-859, 2017
	A Technique to Enhance Quality of Service using weighted Path Mechanism <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	2(4), 413-417, 2017
	Enhancing the Security of IoT Data using Multilevel Encryption <i>International Journal of Advanced Research in Computer Science</i>	0976-5697	8(9), 841-845, 2017
	A Unified Model for Cloud Data Confidentiality <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	2(6), 256-261, 2017
	E2TBR: Energy Efficient Transmission Based Routing for IoT <i>International Journal of Computer Science Engineering</i>	2249-6831	7(4), 1-8, 2017
	Role of Scheduling and Load Balancing Algorithms in cloud to improve the Quality of Services <i>International Journal of Computer Science</i>	2348-6600	5(1), 1454-1462, 2017
	Scheduling for Internet of Things Applications on Cloud: A Review. <i>Imperial Journal of Interdisciplinary Research</i>	2454-1362	3(1), 1649 -1653, 2017
	Issues and Challenges in Minimizing the response time in cloud service <i>International Journal for Trends in Engineering and Technology</i>	2349-9303	25(1), 13-17, 2017
	An Enhanced Technique to Detect Sinkhole Attack in Internet of Things <i>International Journal of Engineering Research and Technology (IJERT)</i>	2278-0181	5(13), 147-150, 2017
	Secure Two-Tier User Authentication Mechanism For IoT Enabled Smart Healthcare System <i>International Journal of Recent Scientific Research</i>	0976-3031	8(7), 59-63, 2017
	An enhanced sinkhole attacker node identification technique using successful link ration in IoT <i>International Journal of Computer Science</i>	2348-6600	5(1), 1439-1444, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr Ravindran		
	Survey On Scalability In Cloud Environment <i>International Journal of Advanced Research in Computer Engineering & Technology (IJARCET)</i>	2278 - 1323	5, 2124, 2016
	Dynamism in Cloud Resource Allocation : A Survey <i>International Journal of Scientific Research in Science, Engineering and Technology (ijsrset.com)</i>	2394-4099	2, 160, 2016
	Load Balancing in Cloud Computing : A Survey <i>International Journal of Scientific Research in Science, Engineering and Technology (ijsrset.com)</i>	2394-4099	2, 317, 2016
	A Survey on Mona: Secure Multi-Owner Data Sharing for Dynamic Groups in the Cloud <i>International Journal of Advanced Research in Computer and Communication Engineering</i>	2278-1021	5, 262, 2016
	Performance Enhancement System for the Cloud with Multi Factor Resource Allocation Technique, <i>International Journal Of Engineering And Computer Science</i>	2319-7242	5, 17627, 2016
	Monitoring and Normalization of the Loaded Servers By Load Balancing <i>International Journal of Scientific Research in Science, Engineering and Technology (ijsrset.com)</i>	2394-4099	2, 781, 2016
	Enhancing the Security for Multi-Owner Data Sharing (MODS) Groups in the Cloud with Improved Dynamism <i>International Journal of Scientific Research in Science, Engineering and Technology (ijsrset.com)</i>	2394-4099	2, 681, 2016
	Developing and Validating a M-Governance Framework Adoption Model of a University for Communication Services to Its Affiliated Institutions <i>International Journal of Advanced Research in Computer Science and Software Engineering,</i>	2277-128X	7, 484-490, 2017
	Effectiveness of transformation from e-Governance to mGovernance of a HEI on its communication services to the stakeholders <i>IOSR Journal of Computer Engineering (IOSR-JCE)</i>	2278-0661	19, 1-8, 2017
	Heat Reducing Using Peltier Effect on Smart Phones <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	1, 1 – 8, 2017
	Internet of Things: A Survey <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	1, 1-7, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr S Britto Ramesh Kumar		
	Feedback Based Conflict Identification and Resolution using Duplicate Elimination and Ranking Techniques <i>International Journal Of Computers & Technology</i>	227-3061	113, 22-27, 2015
	Conflict Resolution and Duplicate Elimination in Heterogeneous Datasets using Unified Data Retrieval Techniques, <i>Indian Journal of Science and Technology</i>	0974-5645	8, 1-6, 2015
	A Framework for Language Independent Stemmer Using Dynamic Programming <i>International Journal of Applied Engineering Research</i>	1087-1090	10, 3900-3904, 2015
	Learning Behavior Analysis Using Data Mining Techniques <i>International Journal of Applied Engineering Research</i>	0973-4562	10, 532-537, 2015
	An Implementation of Three Layered Net-Chk Two Factors Online Social Network Model for Privacy <i>Electrical, Computer and Communication Technologic</i>	978-1-4799-608S-9	2, 1-5, 2015
	Enhanced Elliptic Curve Cryptography <i>Indian Journal of Science and Technology</i>	0974-6846	8, 1-6, 2015
	A Security Framework for Social Network Services <i>International Journal of Applied Engineering Research</i>	0973-4562	10, 307-314, 2015
	Proposed Hough Technique For Estimating Climatic Conditions Recorded In The Cross Section Of Tree Images <i>IOSR Journal Of Computer Engineering (IOSR-JCE)</i>	2278-8727	17, 2017
	Semi-Automatic Techniquesfor Estimating Climatic Conditions Recorded In The Tree Rings <i>International Journal Of Computer Trends And Technology (IJCTT)</i>	2231-2803	29, 19-22, 2015
	Conflict Identification and Resolution in Heterogeneous Datasets: A Comprehensive Survey <i>International Journal of Computer Applications</i>	0975- 8887	113, 22-27, 2015
	Context-Aware In PrivacyPreservation For Health Care Systems <i>International Journal of Advanced Computer Technology</i>	2319-7900	4, 8-13, 2015
	Security on Mobile Social Networks <i>International Journal of Advance Research in Computer Science and Management Studies</i>	2321-7782	3(9), 126-131, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr S Britto Ramesh Kumar		
	Survey Paper On Mobile Social Networks <i>International Research Journal of Engineering and Technology</i>	2395-0056	2(6), 637-649, 2015
	A Multi-Layered Secured Framework for Context-Aware Web services in Health care Industries <i>International Journal of Applied Engineering Research</i>	0973-4562	10, 554-560, 2015
	Security issues in Internet of Things using Next Generation Mobile Networks <i>International Journal of Applied Engineering Research</i>	0973-4562	10, 528-531, 2015
	Enhanced Elliptical Curve Cryptography Based PKI for Secure Data Storage in a Cloud <i>International Journal of Applied Engineering Research</i>	0973-4562	10, 489-497, 2015
	Cloud Computing Data Security Issues, Challenges, Architecture and Methods- A Survey, <i>International Research Journal of Engineering and Technology</i>	2395-0056	2, 848-857, 2015
	Issues and Challenges of Data Transaction Management in Cloud Environment, <i>International Research Journal of Engineering and Technology</i>	2395-0072	2, 123-128, 2105
	SECURITY ISSUES ON COMPOSITE WEB SERVICES <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0072	3(6), 2442-2446, 2016
	IoT based Home Security through Digital Image Processing Algorithms, <i>2nd World Congress on Computing and Communication Technologies (WCCCT `16)</i>	978-1-5090-5573-9/16	20-23, 2016
	IoT based Home Security through Digital Image Processing Algorithms, <i>2nd World Congress on Computing and Communication Technologies (WCCCT `16)</i>	978-1-5090-5573-9/16	20-23, 2016
	An Enhanced Architecture For Feature Based Opinion Mining From Product Reviews, <i>2nd World Congress on Computing and Communication Technologies (WCCCT `16)</i>	978-1-5090-5573-9/16	89-92, 2016
	PLIS: Proposed Language Independent Stemmer for Information Retrieval Systems Using Dynamic Programming <i>2nd World Congress on Computing and Communication Technologies (WCCCT `16)</i>	978-1-5090-5573-9/16	132-135, 2016
	An Approach For Analyzing The Factors Recorded In The Tree Rings Using Image Processing Techniques <i>2nd World Congress on Computing and Communication Technologies (WCCCT `16)</i>	978-1-5090-5573-9/16	236-239, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr S Britto Ramesh Kumar		
	An Enhanced Multi-Layered Security Framework for Context-Aware Mobile Web Services <i>International Journal of Computer Applications (IJCA)</i>	0975-8887	146(15), 1-14, 2016
	Security Issues in Context-Aware System <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0072	3(5), 1-5, 2016
	Security Issues in Web Services <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0072	3(5), 909-914, 2016
	An Innovative Security Architecture and Algorithm for Social Network Services <i>ARNP Journal of Engineering and Applied Sciences</i>	1819-6608	11(2), 1101-1105, 2016
	Proposed Architecture for Improving Security and Consistency of Data Transactions in Cloud Database using Tree-Based Consistency Approach <i>International Journal of Computer Science and Information Security (IJCSIS)</i>	1947-5500	15(12), 118-126, 2017
	Dynamic and Scalable Architecture for Accessing the Cloud Databases and Securing Cloud Services Using Public Key Infrastructure <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	2(6), 455-459, 2017
	An Efficient Depth Fixed Tree Consistency (DIFTC) Method for Distributed Data Transactions in Cloud Environment <i>International Journal of Advanced Research in Computer science</i>	0976-5697	8(7), 936-942, 2017
	Data Division in Cloud for secured Data Storage using RSA Algorithm <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395 -0056	4(6), 455-460, 2017
	Role Based Access Control Model (RBACM) With Efficient Genetic Algorithm (GA) for Cloud Data Encoding, Encrypting and Forwarding <i>International e-Journal for Technology and Research</i>	2465-3289	1(6), 1-8, 2017
	Ant Colony Model (AnCoMoDaS) for Data Security in Cloud <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395 -0056	4(5), 1004-1007, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr S Britto Ramesh Kumar		
	Online Social Networking Services Impact on Big Data <i>International Journal of Computer Science</i>	2348-6600	5(1), 1502-1506, 2017
	Security BM Techniques using in Digital Image Processing <i>International Journal of Computer Science</i>	2348-6600	5(1), 1524-1528, 2017
	Dr A Aloysius		
	Cognitive Weighted Polymorphism Factor: A Comprehension Augmented Complexity Metric <i>International Journal of Computer, electrical, Automation, Control</i>	DOI. 1999.4/1000 2880	9, 1982-1987, 2015
	A Review on Component Based Software Metrics <i>International Journal of Fuzzy Mathematical Archive</i>	2320-3242	7, 185-194, 2015
	Aspect oriented Programming Metrics - A Survey <i>International Journal of Emerging Trends in Computing and Communication Technology</i>	2348 4454	1(3), 125- 130, 2015
	Analysis of Measuring the Complexity of Advice Using a Cognitive Approach <i>International Journal of Applied Engineering Research</i>	0973 - 4562	10(82), 32-37, 2015
	Cognitive Perspective Of Attribute Hiding Factor Complexity Metric <i>International Journal of Engineering And Computer Science</i>	2319-7242	4, 14973-149, 2015
	Cognitive Weighted Method Hiding Factor Complexity Metric <i>International Journal of Computer Science and Software Engineering</i>	2409-4285	4, 272-279, 2015
	Validation of Cognitive Weighted Methods Hiding Factor Complexity Metric <i>International journal of Applied Engineering Research</i>	0973- 4562	10(82), 2015
	A Survey on User Authentication Mechanism in Mobile Cloud Computing <i>International Journal of Emerging Trends in Computing and Communication Technology</i>	2348 4454	3, 114-118, 2015
	Dynamic Key Based User Authentication (DKBUA) Framework for MobiCloud Environment <i>International Journal of Computer and Communication System Engineering (IJCCSE)</i>	2312-7694	2, 671-675, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr A Aloysius		
	Cognitive Weighted Polymorphism Factor: A New Cognitive Complexity Metric <i>International Journal of Computer and Information Engineering</i>	2279 - 0764	2, 2015
	Big Data Prediction Using Evolutionary Techniques: A Survey <i>Journal of Emerging Technologies and Innovative Research (JETIR)</i>	2349-5162	3, 2016
	Concepts and Methods of Sentiment Analysis on Big Data <i>International Journal of Innovative Research in Science, Engineering and Technology</i>	2319-8753	5, 16288-96, 2016
	Cognitive Weighted Inherited Class Complexity Metric <i>Procedia Computer Science</i>	1877-0509	125, 297-304, 2017
	PREDICTIVE ANALYTICS CONCEPTS IN BIG DATA- A SURVEY <i>International Journal of Advanced Research in Computer Science</i>	0976- 5697	8, 1-4, 2017
	Social Network Prediction Measurement in Education <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	2, 458-461, 2017
	A SURVEY ON TRUTH DISCOVERY METHODS FOR BIG DATA <i>International Journal of Engineering Technology and Computer Research (IJETCR)</i>	2348 - 2117	5, 183-189, 2017
	Pre-Processing Concepts and Techniques for Sentiment Analysis <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	2, 141-144, 2017
	Polarity Detection of Lexicon based Sentiment Analysis with Negation Handling <i>Journal of Advanced Research in Dynamical & Control Systems</i>	1943-02 23X	13, 44-45, 2017
	Lexicon based Acronyms and Emoticons Classification of Sentiment Analysis (SA) on Big Data <i>International Journal of Database Theory and Application</i>	2005-4270	10, 41-54, 2017
	A Heuristics on Interface Complexity <i>International Journal of Advanced Research in Computer Engineering & Technology (IJARCET)</i>	2278 -1323	6, 1283-87, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr A Aloysius		
	Sentiment Analysis using Mode Measure <i>Journal of Emerging Technologies and Innovative Research (JETIR)</i>	2319-7242	6, 19928-199, 2017
	Sentiment Analysis: A Review <i>International Journal of Engineering Technology and Computer Research (IJETCR)</i>	2348 - 2117	5, 26-30, 2017
	An Analysis of Object Oriented Complexity Metrics <i>International Journal of Scientific Research in Computer Science, Engineering and Information Technology</i>	2456-3307	2, 757-765, 2017
	Survey of MapReduce on BigData <i>International Journal of Engineering and Computer Science</i>	2319-2742	6, 662-666, 2017
	Mr. V Jude Nirmal		
	Fast and Effective Real time Sentiment analysis on Streaming Big Data using Distributed Caching Techniques <i>International Journal of Applied Engineering And Research (IJAER)</i>	0973-4562	10, 223-228, 2015
	Parallelization Techniques in Pre-processing Phase for Sentiment Analysis in Big Data: A Comparative Analysis <i>International Journal of Applied Engineering And Research (IJAER)</i>		10, 37270-372, 2015
	Parallel Implementation of Big Data Pre-processing Algorithms for Sentiment Analysis of Social Networking Data <i>International Journal of Fuzzy Mathematical Archive</i>	2320-3242	6(1), 149-159, 2015
	Emoticon Based Sentiment Analysis using Parallel Analytics on Hadoop <i>Indian Journal of Science and Technology (IJST)</i>		9(33), 1-7, 2016
	Rev Dr S Arul Oil		
	A Novel Approach for Ensuring Data Confidentiality in Public Cloud Storage <i>International Journal of Computer Applications</i>	0975-8887	1-5, 2-15
	A Framework for Key Management for Data Confidentiality in Cloud Environment <i>Institute of Electrical and Electronics Engineers (IEEE)</i>	978-1-4799-6805-3	15, 167-170, 2015
	Confidentiality Framework to Enhance Data Security in Public Cloud Storage, <i>International Journal of Applied Engineering Research (IJAER)</i>	0973-4562	10, 484-488, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Rev Dr S Arul Oil		
	Enhanced Obfuscation Technique for Data Confidentiality in Public Cloud Storage <i>MATEC Web of Conferences</i>	2016400900 3	40, 1-5, 2016
	Confidentiality Technique for Data Stored in Public Cloud Storage <i>International Journal of Engineering Research & Technology (IJER)</i>	2278-0181	5, 44-48, 2016
	Confidentiality Technique using Data Obfuscation to Enhance Security of Stored Data in Public Cloud Storage <i>International Journal of Advanced Research in Electronics and Communication Engineering (IJARECE)</i>	2278-909X	5, 169-174, 2016
	Confidentiality Technique for Enhancing Data Security using Encryption and Obfuscation in Public Cloud Storage <i>International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE)</i>	2319 5940	5, 431-435, 2016
	ARARO Framework for Confidentiality Techniques to Enhance Security of Numerical and Non-Numerical Data in Public Cloud Storage, <i>International journal of innovative research in electrical, electronics, instrumentation and control engineering (ijireeice)</i>	2321 ? 5526	4, 32-37, 2016
	Confidentiality Technique to Encrypt Non-Numerical Data to Enhance Security in Public Cloud Storage <i>Institute of Electrical and Electronics Engineers (IEEE)</i>	978-93- 80544-24-3	2017
	Confidentiality Technique to Obfuscate the Numerical Data to Enhance Security in Public Cloud Storage <i>Institute of Electrical and Electronics Engineers (IEEE)</i>		2017
	Confidentiality Technique to Encrypt and Obfuscate Non-Numerical and Numerical Data to Enhance Security in Public Cloud Storage <i>Institute of Electrical and Electronics Engineers (IEEE)</i>		2017
	Mr K R Martin		
	Analysis of measuring the complexity of Advice using a Cognitive Approach <i>International Journal of Applied Engineering Research (IJAER)</i>	ISSN 0973- 4562	10(82), 2015
	A Review on Coupling Metrics in Aspect Oriented System <i>International Conference on Computing Communication and Information Science (IJCTA)</i>	0974-5572	9(27), 93- 97, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Mr K R Martin		
	Design and Analysis of Aspect Oriented Metric CWCAE using Cognitive Approach <i>International Journal of Engineering Research & Technology (IJERT)</i>	2278-0181	5, 2016
	Extended Metric of Cognitive Weighted on Method Call <i>International Journal of Scientific Research in Computer Science Engineering and Information Technology</i>	2456-3307	2(5), 261-266, 2017
	Coupling on Field Access Metric: A Cognitive Approach <i>International Journal of Advanced Research in Computer Science and Software Engineering</i>	2277 128X	7, 2017

10	Sponsored research projects in operation during the period 2015-16 & 2016-17			
S.No.	Name of the Investigator	Title of the Project	Funding Agency	Amount Rs.
	Dr. L. Arockiam	Developing predictive models to forecast and pre-treat diabetes mellitus in tamil nadu using clinical big data	UGC-SERO	200000.00
	A. Vimal Jerald	Internet of things (iot) based information kendra in district level for integrating smart applications	UGC-SERO	293454.00
	A. Jenifer Jothi Mary	Big data analytics for aspect based sentiment analysis of students opinion in digitalized higher education	UGC-SERO	238990.00

11	Utilization of Equipment from outside the department
	The equipments are not used for Scholars / Students from outside the department

12	Self-Assessment of the Impact of FIST support: Please specify, if any of the following activity emerged / improved as a consequence of the FIST support	
	a. New class-room experiments at B.Sc / M.Sc or other levels	
	b. Success of students at national level tests (various PG / PhD entrance tests and test for JRF, etc.)	
	The following Students qualified SET	The following students qualified GATE
	c. Any new research project that emerged on the basis of the FIST support	
	d. Did the newly created facility lead to betterment of quality of research publications	
	e. Any training program / workshop organized by the department during the period of report, specifically those involving the newly created facility World Congress on Communication and Computational Technology WCCCT 2016 Workshop on Big Data Analytics and Business Intelligence 2016 Workshop on Market Trend in the IT Arena 2017 Placement Training (specifically for PG Students of Computer Science)	

13	Is any problem faced in utilization of the grant / facilities?
	No

A Report Highlighting the Research Activities of the Department

during the period under review, may also be provided

Research Profile of the Department of Mathematics		
Research Program	Ph.D	M.Phil
No. of Scholars	32	80
Areas of Research	Artificial Intelligence Big Data Analysis Cloud Computing Data Structures & Algorithms IoT Networks Security Pervasive Computing Simulation Task Scheduling Web Services	Artificial Intelligence Big Data Analysis Cloud Computing Data Structures & Algorithms IoT Networks Security Pervasive Computing Simulation Task Scheduling Web Services
Success rate of Scholars per year	2 per year	24 per year
Total number of Research Papers, published during 2015-2017	188	

FIST PROGRAM

PROJECT No.
SR / FIST / College-214 / 2014(C) dated 16th June 2015

PROJECT COMPLETION REPORT (FOR THE YEARS 2015 – 2017)

PG and Research Department of Mathematics

Submitted to
Department of Science & Technology



सत्यमेव जयते
Department of Science and Technology
Ministry of Science and Technology
Government of India



October 2018

ST. JOSEPH'S COLLEGE (AUTONOMOUS)

175 years of Educational Excellence
Accredited at 'A' Grade (3rd Cycle) by NAAC
DBT-STAR & DST-FIST Sponsored College
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TIRUCHIRAPPALLI 620002

**DST – Fund for Improvement
in Science and Technology Infrastructure (FIST 2014)
Department of Mathematics
School of Computing Sciences**

FORMAT 1

Brief Outline of the Department

- The department of Mathematics was started in the year 1960.
- It was started with a purpose of imparting a higher level of mathematical education to the society
- When the department was started, it started offering UG and PG programmes in Mathematics
- There are about 344 students doing B.Sc mathematics and 77 students studying M.Sc mathematics
- The M.Phil and Ph.D. Programmes were started in the years 1976 and 1994 respectively
- It is a FIST-funded department

Teaching and Research Activities

- The department is involved in teaching Core-mathematics to B.Sc Mathematics programme and Allied-mathematics to B.Sc courses - Chemistry, Computer Science, Electronics, Physics and the B.Com Course.
- Teaching core and Elective subjects under PG program.
- The methods of teaching in chalk and Talk Method, power point presentation, video conferencing.
- Conduct workshops and endowment lectures and National conferences.
- Research scholars attend work shop, National conference and present papers.
- Coaching Program for IIT-JAM is conducted for UG students and NET/SLET program is conducted for PG students.

Facilities Created

- Many Books are purchased in Mathematics for referencing (Appendix I)

S.No.	Laboratory & Equipments	Details
1	<u>Computer Lab</u> Computer Terminals (15) + Server (1) ACEP Personal Computers (4) Network Xerox Machine (1) SONY LCD Projector (1)	* Lab is equipped with these facilities. * UG and PG Students of Mathematics use these facilities for their regular studies * Scholars also use these facilities as and when required
2		

- **Sophisticated Instrumentation Facility**

S.No.	Laboratory & Equipments	Details
1		

Funding

- The Details of funding are given here.

Details of Grants: Grant for the College as a whole			
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000

FORMAT 2**Pro-forma for Report for utilization of FIST support**

S.No.	Aspects	Details
1	Name of the Department and University	Department of Mathematics St. Joseph's College (Autonomous) Tiruchirappalli 620002 Bharathidasan University, Tiruchirappalli 620024
2	Address for Communication Name and Address of the Head of the Dept with e-mail and telephone	Dr Benedict Michaelraj Head, Dept. of Mathematics St. Joseph's College (Autonomous), Trichy 620002 e-mail: benedict.mraj@gmail.com telephone: 0431-4226398
3	Date and Ref.No. Of DST Sanction Letter	SR/FIST/College-214/2014(C) dated 16 th June 2015

4	Details of Grants: Grant for the College as a whole		
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000

5	Equipment ordered / purchased /installed			
	Name (Model & Make)	Order Date	Installation Date	Cost in INR
5.1				
5.2				
5.3				
5.4				

6	Details of Infrastructure developed	
	<i>FIST before 2015</i>	<i>FIST 2015-2017</i>
	Computer Terminals (15) + Server (1) ACEP Personal Computers (4) Network Xerox Machine (1) SONY LCD Projector (1)	Books (153) , on some of specialized Topics of Mathematics for the Students to study List of Books, attached in Appendix I

7	Details of Networking	

8	Utilization of the facilities created under FIST	
	<i>For Teaching</i>	<i>Details of utility</i>
	Softwares: MATLAB, LATEX and C-Program	Practicals, given for UG and PG Students
	<i>For Reseach</i>	<i>Details</i>
	Softwares: MATLAB, LATEX and C-Program	Mphil and Ph.D Scholars use these facilities for their research works

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr L Benedict Michael Raj		
	On Harmonic index and Diameter of unicyclic Graphs <i>Iranian Journal of Mathematical sciences and informatics</i>	1735-4463	11(1), 115-122, 2016
	Colouring of Digraph <i>Proceedings of National Conference on Analysis and Applied Mathematics(accepted)</i>	978-93-84743-0	2016
	The first and the second Zagreb indices of the generalized Mycielskian of graph <i>Electronics Notes on Discrete Mathematics</i>	1571-0653	2016
	On a conjecture of Harmonic Index and Diameter of Graphs <i>Kragujevac Journal of Mathematics</i>	1450-9628	2016
	Harmonic Index of Product Graphs <i>Proceedings of National Conference on Analysis and Applied Mathematics</i>	978-93-84743-0	2016
	Dichromatic polynomial of product digraphs <i>Electronics Notes on Discrete Mathematics</i>	1571-0653	53, 2016
	The first and second Zagreb indices of the generalized Mycielskian of graph <i>Electronics Notes on Discrete Mathematics</i>	1571-0653	53, 239-258, 2016
	Modified and Multiplicative Zagreb Indices on Graph Operations <i>Journal of Computer and Mathematical Sciences</i>	0976-5727	7(4), 225-232, 2016
	First Modified Zagreb Indices of Unicyclic graphs with a given number of pendant vertices <i>International Journal of Mathematical Archive</i>	229-5046	7(4), 151-153, 2016
	The second and third minimum harmonic index of trees <i>Proceedings of National Conference on Discrete Mathematics</i>	--	2016
	Harmonic index of a graph with more than one cut vertex <i>ARS Combinatoria</i>	0381-7032	135,283-298, 2017
	Changing and unchanging properties of single chromatic transversal domination number of graphs <i>International Journal of Mathematics Trends and Technology</i>	2231-5373	52(4), 14-21, 2017
	Single chromatic transversal domatic number of graphs <i>Internal Journal of Innovative science, Engineering & Technology</i>	2348-7968	4(7), 352, 2017

9	Details of full length reseach publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr S Rubanraj		
	Solving Hybrid Fuzzy Fractional Differential Equations by Adam-Bash Forth Method <i>Applied Mathematical Sciences</i>		9(29), 1429 – 32, 2015
	Solving Hybrid Fuzzy Fractional Differential Equations by Improved Euler Method <i>Mathematical Theory and Modeling</i>	2225-0522	5(5), 106-116, 2015
	Solving Hybrid Fuzzy Fractional Differential Equations by Runge Kutta 4th Order Method <i>International Journal of Science and Research (IJSR)</i>	2319-7064	4(2), 96-98, 2015
	Numerical Solution of Fuzzy Differential Equation by Sixth Order Runge-Kutta Method <i>International Journal of Fuzzy Mathematical Archive</i>	2320-3242	7(1), 35-42, 2015
	Solving Second Order Hybrid Fuzzy Fractional Differential Equations by Runge Kutta 4th Order Method <i>International Journal of Science and Research (IJSR)</i>	2319-7064	4(1), 2148-2153 2015
	Comparative study on structural properties of fuzzy graphs and their complement graphs <i>Jamal Academic Research Journal: An Interdisciplinary</i>	0973-0303	1, 630-634, 2015
	A Numerical Solution of First Order Simultaneous Fuzzy Differential Equation by Fifth Order Runge- Kutta Merson Method <i>International Journal of Science and Research (IJSR)</i>	2319-7064	4(6), 3081-3085, 2015
	Solving Hybrid Fuzzy Fractional Differential Equations by Milne`s Method <i>International Journal of Science and Research (IJSR)</i>	2319-7064	5(1), 47-50, 2016
	Solving Hybrid Fuzzy Fractional Differential Equations by Runge Kutta Fehlberg 6th Order Method <i>International Journal of Science and Research (IJSR)</i>	2319-7064	5(2), 1636-1640, 2016
	Fuzzy Laplace Transform With Fuzzy Fractional Differential Equation <i>International Journal of Mathematics and Computer Research</i>	2320-7167	4, 1276-1282, 2016
	Fractional Calculus of Logarithmic Functions <i>International Journal of Mathematics and Computer Research</i>	2320-7167	4, 1296-1303, 2016
	Analytic solution of linear fractional differential equation using fractional Laplace transform <i>Annals of Pure and Applied Mathematics</i>	2279- 087X	15, 209-214, 2017

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr S Rubanraj		
	Solving Fractional Derivative of some functions <i>International Journal of Mathematics Trends and Technology</i>	2349-5758	52(1), 13-17, 2017
	Fractional Modeling of Neurotransmitter Transport in the presence of Receptor and Transporter <i>International Journal of Mathematics Trends and Technology</i>	2231-5373	52(1), 74 – 77, 2017
	Solving Fuzzy Fractional Differential Equation with Fuzzy Laplace Transform involving Sine function <i>International Journal of Mathematics Trends and Technology</i>	2231-5373	48, 218 – 222, 2017
	Solving Fuzzy Fractional Differential Equation with Fuzzy Laplace Transform Involving Coshx <i>International Journal of Fuzzy Mathematical Archive</i>	2320-3250	14, 51-59, 2017
	Solution of the Fractional Order Neurotransmitter Kinetic Model <i>Mathematical Sciences International Research Journal</i>	2278-8697	7, 147-152 2018
	Analytic solution of linear fractional differential equation using inverse fractional Laplace transform <i>Mathematical Sciences International Research Journal</i>	2278-8697	7, 143-147, 2018
	Dr S Koilraj		
	Super Edge - Antimagic Total Labeling of Fully Generalized Extended Tree <i>International Journal of Scientific Innovative Mathematical Research (IJSIMR)</i>	2347-307X	3, 28 - 35 2015
	Radio Number for PVB - tree <i>International Journal of Engineering Science, Advanced Computing and Bio-Technology</i>		7, 104 – 123 2016
	SEAV and SEMT Labeling for PVB tree <i>International Journal of Innovative Science, Engineering & Technology</i>	2348 - 7968	6(1A), 107 – 115 2018
	D U Karuppiah		
	Some Common fixed point theorems for non-self mappings -weak contractive conditions of integral type in symmetric spaces <i>Far East Journal of Mathematical Sciences</i>	0972-0871	98(1), 15-35, 2015
	Some common fixed point theorems for multi-valued maps in complete metric space <i>International Journal of Mathematical Sciences and Engineering Applications</i>	0973-9424	9(II), 157-178, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	D U Karuppiah		
	New common fixed point theorems for multi-valued and single-valued maps in complete metric space <i>International Journal of Pure and Engineering Mathematics</i>	2348-3881	3(I), 263-281 2015
	A Best proximity point theorem for weakly/psi contractive nonself mappings <i>International Journal of Mathematical Sciences and Engineering Applications</i>	0973-9424	9(II), 233-240, 2015
	Fixed Point Theorem in Complex Valued b-Metric Space for Generalized Rational Contractions having Control Functions <i>Singaporean Journal of Scientific Research</i>	1205-2421	8(4), 266-279, 2016
	Common Coupled Fixed Point Results for Generalized Rational Type Contractions in Complex Valued Metric Spaces <i>International Journal of Mathematics Trends and Technology</i>	2349-5758	39(2), 6-24, 2016
	Fixed Point Theorems for Generalized Multivalued Mappings in b-Metric Space, <i>International Journal of Research and Reviews in Applied Sciences and Engineering</i>	2231-0061	8(2), 354-370, 2016
	Fixed Point Theorems for (alpha,psi)-Meir-Keerler-Khan Multivalued Mappings in b-Metric Space <i>Asian Journal of Information Science and Technology.</i>	2231-6108	4(1), 22-32, 2016
	Fixed point theorems for Generalized Ciric-Berinde type Contractive Multivalued mappings <i>Singaporean Journal of scientific Research</i>	1205-2421	8(3), 227-238 2016
	Fixed point theorems for multivalued contractive mappings in b-Metric space <i>International journal of Mathematics Trends and Technology</i>	2349-5758	37(4), 21-27 2016
	Some theorems on alpha-psi Quasi contractive on Quasi partial metric space <i>International Journal of Mathematical Archive-7(10)</i>	2229-5046	7(10), 185-191, 2016
	Some theorems in multi intuitionistic fuzzy rw-closed and multi intuitionistic fuzzy rw-open sets in multi intuitionistic fuzzy topological space <i>International Journal of Scientific Research</i>	2277 - 8179	5, 642-646, 2016
	Multi Intuitionistic Fuzzy Rw-continuous Maps And Multi Intuitionistic Fuzzy Rw-irresolute Maps In Multi Intuitionistic Fuzzy Topological Spaces, <i>Bulletin of Mathematics and Statistics Research</i>	2348-0580	4, 57-68, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	D U Karuppiah		
	a study on multi fuzzy rw-closed, multi fuzzy rw-open sets in multi fuzzy topological spaces <i>International Journal of Mathematical Archive-7(4)</i>	2229-5046	7(4), 27-32 2016
	Multi Intuitionistic Fuzzy RW-Open Maps and Multi Intuitionistic Fuzzy RW-Closed Maps in Multi Intuitionistic Fuzzy Topological Spaces <i>Elixir Advanced Mathematics Internal Journal</i>	2229-712X	101, 43927-35, 2016
	Notes on multi fuzzy rw-open maps, multi fuzzy rw-closed maps and multi fuzzy rw-homeomorphisms in multi fuzzy topological space <i>International Journal of Applied Mathematical Sciences</i>	0973-0176	9(1), 73-87, 2016
	A Study on Multi Fuzzy Rw-Continuous Maps and Multi Fuzzy Rw-Irresolute Maps in Multi Fuzzy Topological Spaces <i>Elixir International Journal</i>	2229-712X	94, 40310-14, 2016
	notes on multi fuzzy rw-closed, multi fuzzy rw-open sets in multi fuzzy topological spaces <i>Bulletin of Mathematics and Statistics Research</i>	2348-0580	4(1), 174-179, 2016
	Common Fixed point theorem for multivalued mappings on b-metric spaces <i>Journal of Global Research in Mathematical Archives</i>		4(12), 9-16, 2017
	Fixed Points for cyclic weak phi contraction in Complete Generalized Metric Space <i>International Journal of Mathematical Archive</i>	2229-5046	8(9), 101-106, 2017
	Some fixed point Theorems for JSC Contraction in Complete Metric Space <i>International Journal of Mathematics And its Applications.</i>	2347-1557	5(3B) 179-183, 2017
	Fixed Point theorems for multiplicative Contraction mappings on Multiplicative Cone - b metric spaces <i>International journal of Mathematical Trends and Technology</i>	2349-5758	48(II), 8-12 2017
	On best proximity points for multivalued Geometric F - contraction mappings <i>International Journal of Scientific & Engineering Research</i>	2229-5518	8(7), 1266-1279, 2017
	Best Proximity Point Theorems For (alpha-psi) Rational Proximal Contraction Mappings In Multiplicative Metric Spaces, <i>International Journal of Engineering Science And Mathematics</i>	2320-0294	6, 236-249 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	D U Karuppiah		
	Common fixed point theorems for JSC-Contraction on Complete metric spaces <i>Journal of Global Research in Mathematical Archives</i>	2320-5822	5(2), 74-81, 2018
	Fixed Point theorems for almost generalized C-contractive mappings in ordered complete partial metric spaces <i>International Journal of Pure and Applied Mathematics</i>	1311-8080	118, 139-150, 2018
	Dr T Rajaretnam		
	Intuitionistic fuzzy Lexical Analyzer <i>Annals of Fuzzy Mathematics and Informatics(AFMI)</i>	2093-9310	13(4), 589-605, 2015
	Intuitionistic Fuzzy Lexical Analyzer <i>Annals of fuzzy Mathematics and Informatics</i>	2287-6235	11, 589-605, 2016
	Intuitionistic fuzzy automaton with unique membership and non membership transitions <i>Lecture notes in computer science, spriger</i>	0302-9743	LNCS 10398, 271-280, 2017
	The Cyclic and Strongly Connectedness of the Products of Intuitionistic fuzzy Mealy Machines <i>Annals of Fuzzy Mathematics and Applications</i>	2287-6235	13(3), 317-344, 2017
	Plus Weighted Finite State Automata <i>Journal of computer and mathematical Sciences</i>	0976--5727	8(11), 674-690, 2017
	A Study on Recognizability Max Weighted Finite State Automata <i>Journal of computer and mathematical Science s</i>	0976--5727	8(11), 658-673, 2017
	Properties of an intuitionistic fuzzy kernel and an intuitionistic fuzzy subsemiautomaton " <i>Journal of Notes on Intuitionistic Fuzzy Sets</i>	1310-4926	23(5), 112-124, 2017
	Cartesian composition of intuitionistic fuzzy finite automata with unique membership transition on an input symbol " <i>Journal of Notes on Intuitionistic Fuzzy Sets</i>	1310-4926	23(5), 102-122, 2017
	Generating and Colouring some family of graphs using Hyper graph Grammar <i>International Journal of Applied Graph Theory</i>	2456-7884	1(2), 53-73, 2017
	Multi--Hyper Graph Grammar <i>Journal of computer and mathematical Science s</i>	0976--5727	8(12), 727-738, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr M Thiagarajan		
	A Finite Capacity Multi Server loss and delay interdependent retrial queueing model with controllable arrival rates with no passing <i>International Journal of computational science and Mathematics</i>	0974-3189	7(1), 33-44, 2015
	A Single server Markovian feedback Queuing system with Discouraged arrivals and retention of Reneged customers with controllable Arrival rates <i>International Journal of Advanced Scientific and Technical Research</i>	2249-9954	2(6), 194-205, 2016
	The M/M/c/N/K Interdependent queuing model with controllable Arrival rates and Reverse balking <i>International Journal of Innovative Research in Science, Engineering and Technology</i>	2319-8753	5(5), 7582-7590, 2016
	The M/M/1/N Interdependent queuing model with controllable arrival rates, Reverse balking and Reverse renegeing <i>International Journal of Innovative Research and Development</i>	2278-0211	3(4), 303-310, 2016
	The M/M/1/N Interdependent queuing model with controllable arrival rates and reverse renegeing <i>Imperial Journal of Interdisciplinary Research</i>	2454-1362	2(5), 945-952, 2016
	The M/M/1/N Interdependent queuing model with controllable arrival rates and reverse balking <i>International Journal of Current Research</i>	0975-833X	8(1), 25331-316, 2016
	A Single server Markovian Queuing system with discouraged arrivals retention of renegeed customers and controllable arrival rates <i>International Journal of Mathematical Archive</i>	2229-5046	7(2), 129-134, 2016
	A multi-server markovian queuing system with discouraged arrivals and retention of renegeed customers with controllable arrival rates <i>International Journal of Current Research</i>	0975-833X	8(2), 26763-770, 2016
	The M/M/C/N Interdependent queuing model with controllable arrival rates and reverse balking <i>Asian Journal of Current Engineering and Maths</i>	2277-4920	21-24, 2016
	Dr J Umamaheswari		
	Best Proximity Points:Existence and Convergengence Theorems For p-Cyclic Weak Contractios Mappings <i>International Journal of Pure and Engineering Mathematics</i>	2348-3881	4, 77, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
	Dr J Umamaheswari		
	Banach Fixed Point Theorem for Contraction Mapping Principle in a Cone b-pentagonal Metric Spaces <i>International Journal of Mathematics Trends and Technology</i>	2349-5758	37, 11, 2016
	Generalized Common Fixed Point Result in Cone Metric Spaces <i>International Journal of Mathematics Trends and Technology</i>	2349-5758	39, 25, 2016
	Dr A Anthony Eldred		
	Best Proximity points for cyclical contractive mappings <i>Applied General Topology</i>	1987-4147	16, 119-126, 2015
	Convergence of Mann iteration for relatively non expansive mappings <i>Fixed Point theory</i>	1583-5022	18, 545-554, 2017
	Cyclic Pairs and common best proximity points in uniformly convex Banach spaces <i>Open Mathematics</i>	2391-5455	15, 711-723, 2017
	Dr A Praveen		
	Convergence of Mann`s iteration for relatively nonexpansive mappings. <i>Fixed Point Theory</i>	1583-5022	2(18), 545-554, 2017
	J Christy Roja		
	Numerical method for singularly perturbed fourth order ordinary differential equations of convection-diffusion type <i>Journal of Mathematical Modeling</i>	2382-9869	4, 57-82 2016
	Numerical method for a system of second order singularly perturbed turning point problems <i>Journal of Mathematical Modeling</i>	2382-9869	6, 211-232 2016
	schwarz method for singularly perturbed second order convection-diffusion equations <i>J. Appl. Math. & Informatics (SCOPUS)</i>	1598-5857	2017
	Overlapping domain decomposition method for singularly perturbed third order reaction-diffusion problems <i>Ain Shams Engineering Journal-Elsevier(Scopus)</i>	2090-4479	1-11, 2017
	an overlapping schwarz method for singularly perturbed third order convection-diffusion type <i>J. Appl. Math. & Informatics (SCOPUS)</i>	1598-5857	36(1,2), 135-154, 2017
	numerical method for singularly perturbed third order ordinary differential equations of reaction-diffusion type <i>J. Appl. Math. & Informatics(SCOPUS)</i>	1598-5857	35(3,4), 277 – 302, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
Dr J Maria Joseph			
	Fixed Point Theorem for Contractive Mappings of Integral Type <i>International Journal of Applied Engineering Research</i>	0973-4562	10(85), 738-743, 2015
	Fixed point theorems on \diamond multi valued mappings in b- metric spaces <i>Springer</i>	40064-016-1870-9	5, 1- 8, 2016
	Fixed point theorems for linear contractions in ordered metric spaces <i>Global Journal of Pure and Applied Mathematics (GJPAM)</i>	0973-1768	12, 314-316, 2016
	Fixed Point Theorem on Dislocated b -Metric Spaces <i>International Journal for Research in Applied Science & Engineering Technology</i>	2321-9653	5, 2305-08, 2017
Dr Geetha Sivaraman			
	Ranking of Incomplete trapezoidal information <i>Soft Computing</i>	1432-7643	21, 7125-40, 2017
	Complete ranking of intuitionistic fuzzy numbers <i>Fuzzy information and Engineering</i>	1616-8658	8, 237-254, 2016
Mr J Felix			
	SINGLE CHROMATIC TRANSVERSAL DOMATIC NUMBER OF GRAPHS <i>International Journal of Innovative Science, Engineering and Technology</i>	2348-7968	4, 7, 2017
Dr P Lawrence Rozario Raj			
	Analytic Mean Labeling of Cycle Related Graphs <i>International Journal of Innovative Science, Engineering & Technology</i>	International 2348 - 7968	2, 897-901 2015
	Face and Total Face Product Cordial Labeling of Graphs <i>International Journal of Innovative Science, Engineering & Technology</i>	2348 - 7968	2, 93-102 2015
	k-Neighborhood-prime Labeling of Graphs <i>International Journal of Innovative Science, Engineering & Technology</i>	International 2348 - 7968	3(8), 288-292, 2016
	Some New Families of Sum Divisor Cordial Graphs <i>International Journal of Mathematics Trends and Technology (IJMTT)</i>	International 2231-5373	40(2), 175-179 2016,
	Face and total face signed product cordial labeling of planar graphs <i>Asia Pacific Journal of Research</i>	International 2320-5504	1, 16-23 2016

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr P Lawrence Rozario Raj		
	Face Integer Cordial Labeling of Graphs <i>International Journal of Mathematics Trends and Technology (IJMTT)</i>	International 2231-5373	41(2), 177-185 2017
	Ms P Julia Mary		
	Convergence Theorems of Ishikawa Iterates for Asymptotically Non-expansive Map <i>Proceedings of national conference on ReDeEM-March 2015</i>	International 8-93-83209-02-6	07-14, 2015
	On Ishikawa Iteration with different control conditions for asymptotically nonexpansive non-self mappings <i>ReTell</i>	National 0973-404X	16, 113-117, 2015
	Cyclic pairs and common best proximity points in uniformly convex Banach spaces <i>DE GRUYTER Open Mathematics</i>	International 2391-5455(online)	15, 711-723, 2017

10 Sponsored research projects in operation during the period 2015-16 & 2016-17				
S.No.	Name of the Investigator	Title of the Project	Funding Agency	Amount Rs.

11 Utilization of Equipment from outside the department	
	The equipments are not used for Scholars / Students from outside the department

12	Self-Assessment of the Impact of FIST support: Please specify, if any of the following activity emerged / improved as a consequence of the FIST support	
	a. New class-room experiments at B.Sc / M.Sc or other levels	
	b. Success of students at national level tests (various PG / PhD entrance tests and test for JRF, etc.)	
	The following Students qualified SET 2015 – 2016 1. D.Jayabal 2. Lakshmi Narayanan 2016 - 2017 1. A. Sheela 2. D. John Nelson Raja 3. K. Jency Priya 4. Danalakshmi 5. Lema Maria Prakasam 6. Loura jency	The following students qualified GATE 2015-2016 1. Lakshmi Narayanan 2. Carmel Pushparaj
	c. Any new research project that emerged on the basis of the FIST support	
	d. Did the newly created facility lead to betterment of quality of research publications	
	e. Any training program / workshop organized by the department during the period of report, specifically those involving the newly created facility Dr S K Ayyasamy & Prof Sooriyanarayana Endowment Lecture (Aug 30, 2016) Rev Dr Albert Muthumalai Endowment National conference on Applications of Mathematics – Recent Trends (Dec 15-16, 2016) Krishnasamy Endowment Lecture (Jan 08, 2017) Janakiraman Endowment Lecture (Sept 09, 2017) NET-SET Coaching Programme conducted for 3 months, every year A National Workshop on ANALYSIS AND ALGEBRA (Feb 26-Mar 02, 2018)	

13	Is any problem faced in utilization of the grant / facilities?
	No

A Report Highlighting the Research Activities of the Department

during the period under review, may also be provided

Research Profile of the Department of Mathematics		
Research Program	Ph.D	M.Phil
No. of Scholars	72	44
Areas of Research	Automata Theory Differential Equations Fixed Point Theory Fuzzy Analysis Graph Theory Numerical Methods Queuing Models – Stochastic Processes	
Success rate of Scholars per year	3 per year	44
Total number of Research Papers, published during 2015-2017	107	

FIST PROGRAM

PROJECT No.
SR / FIST / College-214 / 2014(C) dated 16th June 2015

PROJECT COMPLETION REPORT (FOR THE YEARS 2015 – 2017)

PG and Research Department of Physics

Submitted to
Department of Science & Technology



सत्यमेव जयते
Department of Science and Technology
Ministry of Science and Technology
Government of India



October 2018

ST. JOSEPH'S COLLEGE (AUTONOMOUS)

175 years of Educational Excellence
Accredited at 'A' Grade (3rd Cycle) by NAAC
DBT-STAR & DST-FIST Sponsored College
Special Heritage Status Awarded by UGC
TIRUCHIRAPPALLI 620002

**DST – Fund for Improvement
in Science and Technology Infrastructure (FIST 2014)
Department of Physics
School of Physical Sciences
(Project No. SR / FST / College-190 / 2014)**

Brief Outline Department

Department of Physics is one of the pioneer departments in the campus involved in physics curriculum teaching for more than 100 years. It offered Intermediate course, BA Honours course in the yester years and at present it is offering B.Sc, M.Sc, M.Phil and PhD in Physics. It has produced world class leaders, administrators and scientists.

Dr. GN Ramachandran, Dr. APJ Abdul Kalam, Prof. Rengarajan are some of the illustrious alumni of the department. The department has contributed towards developing two new departments namely Computer Science and Electronics.

Teaching and Research Activities

Department has lot of rare equipments that is of scientific interest which can be exhibited for present and future generations of students. Good number of staff members involved themselves in research activities and more than 30 research scholars are doing their Ph.D research work.

Facilities Created

Major Research Facilities Developed and available in CNSAT- Centre for Nanotechnology and Thermodynamics, Thin Films Lab, Crystal Growth Lab, Embedded Lab, Digital Photo Lab, Luminance Lab and many experiments have been upgraded with available modernised equipments such as CCD based spectrometers, digital Guoy balance, Laser based optical experimental setups etc

Funding

DST-FIST

Sanctioned Amount:

Amount Released:

For Further details contact:

Dr. I. Arul Rayappan

Head, Department of Physics

St. Joseph's College (Autonomous), Trichy.

ph_1arulroy@mail.sjctni.edu

0431-4226438



M. Sc. Physics Laboratory



Crystal Growth Laboratory



Thin-Films and Materials Science Laboratory



Ultrasonic-Materials Characterzation Laboratory

Instruments purchased through DST-FIST 2015 Fund

Pro-forma for Report for utilization of FIST support

- 1 Name of Department and University **Physics, St. Joseph's College (Autonomous), Bharathidhasan University, Trichy.**
- 2 Address for communication (Name and address of the Head of the Department with e-mail and telephone no) **Dr. I. Arul Rayappan
Head, Department of Physics
St. Joseph's College (Autonomous), Trichy.
ph_1arulroy@mail.sjctni.edu
0431-4226438**
- 3 Date and ref. No. of DST Sanction letter **SR/FIST/College-214/2014(C) dated 16th June 2015**

4. Details of the Grants

4 Details of Grants: Grant for the College as a whole			
	Budget Heads	Amount Sanctioned with Date (Rupees)	Amount Received with Date (Rupees)
a	Equipment		
	Teaching	3200000	3200000
	Research	5000000	5000000
b	Infrastructure	800000	50000
c	Networking	700000	700000
d	Maintenance	300000	0
e	Total	10000000	8950000

5. Equipment ordered/purchased/installed:

S.No.	Name (with Model and Make)	Order Date	Installation Date	Cost in INR
1	Dielectric Constant and Curie Temperature of Ferroelectric Ceramics DEC -01	18.08.2015	26.10.2015	25780.00
2	Dielectric Measurement Setup DEC – 600	18.08.2015	26.10.2015	48818.00
3	Magnetic Hysteresis Loop Tracer HLT – 111C with CRO	18.08.2015	26.10.2015	117246.00
4	Hall Effect Experiment HEX – 21C with USB Based Computer Interface Facility	18.08.2015	26.10.2015	144884.00
5	Millikan's Oil Drop Apparatus MOD - 01	18.08.2015	26.10.2015	74390.00
6	Zeeman Effect Experiment – SES Make Model: ZEX-01	18.08.2015	26.10.2015	124414.00
7	Electron Spin Resonance Spectrometer SES Make Model: ESR-105	18.08.2015	26.10.2015	48425.00
8	Floor Model Fume Hood	12.09.2015	24.11.2015	96117.00

6	Details of Infrastructure developed	
	<i>FIST before 2015</i>	<i>FIST 2015-2017</i>
		PG Main Labs, enriched with the equipments, purchased for the Students to do Experiments in Core Physics Material Science Research Labs is also enriched with some equipments, purchased to help more research

7	Details of Networking	

8	Utilization of the facilities created under FIST	
a	<i>For Teaching</i>	<i>Details of utility</i>
	Some new concepts and experiments are added	Practicals, given for UG and PG Students
b	<i>For Research</i>	<i>Details</i>
	The Research activities are going on, in the following areas Thin Film, LASERS, Crystal Growth, Lattice Dynamics, Ultrasonics and Materials Characterization	M.Phil and Ph.D Scholars use these facilities for their research works

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr. R. Victor Williams		
	Influence of Ga doping on the structural, optical and electrical properties of Ba _{0.6} Sr _{0.4} TiO ₃ thin films, <i>International Journal of Scientific & Technology Research,</i>	International	4(8), 86-91, 2015
	Structural and electrical behavior of Tin doped Ba _{0.6} Sr _{0.4} TiO ₃ thin films, <i>International Journal of Development Research,</i>	International	5(10), 5725-5732, 2015,
	Effect of annealing temperature on structural and optical parameters of sol-gel routed Molybdenum oxide thin film, <i>Surface review and Letters,</i>	International	22(4) 1550054- 155006 2015.
	Structural and optical characterization of synthesized TiO ₂ nano powder using sol-gel technique <i>International Journal of Nano Science,</i>	International	15(1), 1550029- 1550034, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
Dr. R. Victor Williams			
	Effect of annealing temperature on the dispersion energy parameters of sol-gel routed Molybdenum oxide thin films <i>International Journal of Development Research.</i>	International	(Accepted) 2016
	Effect of Tio ₂ /reduced grapheme oxide composite thin film as a blocking layer on the efficiency of dye-sensitized solar cells <i>Journal of solid state electrochemistry</i>	International 432-8488	21, 891-903, 2016
	Betalain and anthocyanin dye-sensitized solar cells <i>Journal of applied electrochemistry</i>	International 0021-891x	
Prof. S Antony Raj			
	Lattice Dynamics of 1T-TaTe ₂ <i>Asian Journal of Applied Science</i>	International 1996-3343	9,30-33, 2016
Dr. I. Arul Rayappan			
	Composition dependent structural and optical properties of Dy ³⁺ doped alkali fluoroborate glasses. Second International conference on Material Science and Technology ICMST	IN	DP 612, 2016
	Synthesis and optical studies on composition dependent Dy ³⁺ doped fluoroborate glasses. Second International conference on Material Science and Technology ICMST	IN	DP 614, 2016
	Structural and optical investigations on concentration dependent Dy ³⁺ doped magnesium fluoroborate glasses. Second International conference on Material Science and Technology ICMST	IN	DP 615, 2016
	Structural and optical studies on Dy ³⁺ doped zinc fluoroborate glasses for UV to visible conversion <i>National conference on Luminescence and applications NCLA-2017</i>	National 978-93-82570-85-1	111, 2017
	Synthesis and optical studies on concentration dependent Dy ³⁺ doped fluoroborate glasses. <i>National conference on Luminescence and applications NCLA-2017</i>	National 978-93-82570-85-1	219, 2017
Dr P Rajendran			
	A Room Temperature Methanol Vapour Sensor Based on Polyaniline Nanoparticles, <i>Journal of Nanoscience and Nanotechnology</i>	1533-4880	
	Spectroscopic Innvestigation of Laser Treated Nano Material Cadmium Sulphide, <i>International Journal of Scientific Research in Science and Technology</i>	23695-6011	

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
Dr P Rajendran			
	Effect of Laser Induced Tin Oxide Nano Particle <i>International Research Journal of Engineering and Technology</i>	2395-0056	04, 2017
	Spectroscopic Investigation of Laser treated Nano Material Lead Oxide, <i>International Research Journal of Laser treated Nano Material Lead Oxide</i>	2395-0056	04, 2017
Dr N Ravi			
	Spectroscopic Innvestigation of Laser Treated Nano Material Cadmium Sulphide, <i>International Journal of Scientific Research in Science and Technology</i>	23695-6011	3, 181, 2017
	Effect of Laser Induced Tin Oxide Nano Particle <i>International Research Journal of Engineering and Technology</i>	2395-0056	04, 2017
	Spectroscopic Investigation of Laser treated Nano Material Lead Oxide <i>International Research Journal of Engineering and Technology</i>	2395-0056	04, 2017
Dr S Alfred Cecil Raj			
	Elucidation of two photon absorption of ethylenediaminium (2,4-dintrophenolate)crystals <i>Optical Materials</i>	IN 00925-3467	60, 214-220, 2016
	Synthesis, growth and characterization of sodium mixed cadmium oxalate crystals <i>Journal f crystallisation process and technology</i>	IN	6, 11-20, 2016
	Influence of sodium in cadmium oxalate dehydrate single crystals – synthesis, growth and characterisation <i>IOSRD International Journal of Physics</i>	IN	2(1), 29-33, 2016
	2-Amino-5-Nitropyridinium Halides (Br,Cl): An efficient Frequency Dooubler, <i>Nanoscience</i>	0219-581X	In print, 2017
Dr N Lawrence			
	Lattice Dynamics of 1T-TaTe ₂ , <i>Asian Journal of Applied Science</i>	International 1996-3343	9,30-33, 2016
	Nanostructured Nikal Oxide Thin Films By Spray Pyrolysis And Ethanol Sensing Response, <i>IJCR</i> ,	International 2347-9213	2,73-79, 2015
	Preparation and Characterizion of CuO Thin Films by Spary Pyrolysis Method for Various Applications <i>International Journal of Advanced Science Research and Development(IJASRD)</i>	International 2395-6089	2,28-33, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr. I. Johnson		
	Nature dye sensitized CuO nanorods for Luminescence application <i>CERAMICS INTERNATIONAL, Elseveir</i>	International 0272-8842	42(5),6198-8842, 2016
	Optical studies of CuO Nanoparticals using Catharanthus Roseus Plant leaves <i>International journal of chemical concepts</i>	International 2395-4256	2(1),43-49, 2016
	PL studies on NiO nanoflakes using natural Tabernaemontana Divaricata plant Leaves <i>International Journal of Chem Tech Research</i>	International	8(11),316-321, 2015
	Estimation of Mineral content in vegetable extraction by Ultrasonic technique <i>International Journal of Engineering science Invention</i>	International	3(4),20-23, 2015
	Ultrasonic study on coconut water and sugar solution before and after laser exposure <i>IOSR Journal of Applied Physics</i>	International 2278-4861	7(2), 151-152, 2015
	Preparation, characterization of chemical Sensing Behaviour of Polyaniline Thin Films <i>International Journal of nanotechnology and Applications</i>	International 0973-631X	9(1), 1-7, 2015
	Synthesis and characterization of Mg doped CuO nanopaticles by quick precipitation method <i>Proceedings of International Conference on advance in chemical Engineering(ICACE)</i>	International	2015
	Green synthesis and chatacterization of CuO nano catalysts in biodiesel production <i>Proceedings of International Conference on Nanostructerd Polymeric Materials and Polymeric nanocomposites</i>	International	2015
	Plant Leaf extract mediated green synthesis and characterization of Laser induced Bio-nanoparticals and their Catalytic applications <i>Proceedings of International Conference on Nanostructerd Polymeric Materials and Polymeric nanocomposites</i>	International	2015
	Eco-Friendly Electrochemical Synthesis of Rod Shaped Ag Nanostructures for Battery Applications <i>International Journal of Chem Tech Research</i>	International 0974-4290	8(7),2015
	Hydrothermal Synthesis of ZnO nano-Honeycomb Structure and their Activity against pathogenic Bacteria <i>International Journal of Pharm Tech Research</i>	International 0974-4304	8(6), 2015

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr. I. Johnson		
	Antibacterial Activity of Silver Nanoparticles synthesized from plant leaf extract of Cycascircinails, Ficus Amplissima, Commelinabenghalensis and Lippianodiflora leaves Journal of Chemical and Pharmaceutical Research	International 0975-7385	7(9), 443-449, 2015
	Flower-Shaped CuO Nanostructure Synthesized by Sonochemical Method and the effect of NaOH concentrations International Journal of Advanced Research	International 2320 – 5407	3(8),2015
	Green cum chemical synthesis and characterization of Mg doped ZnS nanoparticles and their engineering band gap performance, International Journal of Engineering Research and Applications	International 2248-9622	5(8),99-105, 2015
	Plant-mediated biosynthesis and characterization of silver nanoparticles by leaf extract of ragiainvolucrata,Cymbopogon citronella,Solanumverbascifolium and Tylophora ovata Elsevir	International 2405-609X	1(4),237-246, 2015
	Estimation of vitamin in fruit juice by Ultrasonic technique International Journal of Engineering Science Invention	International 2319-6734	3(4),15-19, 2015
	Natural dye sensitized CuO nanorods for luminescence applications, CERAMICS INTERNATIONAL, Elsevir	International 0272-8842	42(5), 6198-6205, 2016
	Optical studies of CuO Nanoparticles using Catharanthus Roseus Plant leaves International journal of chemical concepts	2395-4256	2(1), 43-49, 2016
	Ultrasonication Assisted Production of Biodiesel from Sunflower Oil by Using CuO: Mg Heterogeneous Nanocatalyst, IOP Conf. Series: Materials Science and Engineering	225 012213	2017
	Ultrasonication-assisted Transesterification for Biodiesel Production by Using Heterogeneous ZnO Nanocatalyst Environmental Progress & Sustainable Energy,John Wiely	1944-7450	DOI 10.1002/ep.12 770, 2017
	Comparative studies on bio and chemically synthesized cuo nanoparticles and their antibacterial activity International Research Journal Of Pharmacy	2230- 8407	8(10), 1-4, 2017
	Facile Preparation and Charaterizations of Silica decorated Graphene nanocomposites, International Journal of Scientific Research in Science, Engineering and Technology	2394-4099	3(6), 941-945, 2017
	Synthesis And Characterizations Of Needle- Shaped CuO Nanoparticles For Biodiesel Application International Journal of Advanced Research	2320-5407	5(1), 1642-1648, 2017
	Green Synthesis and Characterizations of Flower Shaped CuO Nanoparticles for Biodiesel Application Sensors & Transducers	1726-5479	210(3), 38-41, 2017
	Ultrasonic study on Moringa Oliefera solution before and after Laser exposure International Journal for Research	2348-6848	4, 607-611, 2017

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr B Kanickairaj		
	Microwave Synthesis Titanium Doped Zinc Oxide for Solar Cell Application <i>International Journal of Scientific Research in Science and Technology (IJSRST)</i>	2395-602X	3(11), 135-139, 2017
	Dr. J Charles		
	Nanostructured Nikal Oxide Thin Films By Spray Pyrolysis And Ethanol Sensing Response, <i>IJCR</i>	International 2347-9213	2,73-79, 2015
	Preparation and Characterization of CuO Thin Films by Spray Pyrolysis Method for Various Applications <i>International Journal of Advanced Science Research and Development(IJASRD)</i>	International 2395-6089	2,28-33, 2015
	Mr. S Dominique		
	Linear and Non-Linear optical properties of Environmentally stable DASC Single Crystal <i>International journal of latest research in Engineering and Technology(IJLRET)</i>	2454-5031	1, 14-16, 2016
	Structural, Optical and Mechanical properties of organic single crystal:4-N,N-Diethylamino -4-N-Methyl-Stilbazolium Iodide(DESI) <i>International journal for research in Science Engineering and Technology</i>	2394-739x	3, 25-27, 2016
	Growth and characterization of organic stilbazolium single crystal of N,N-Dimethylamino-N'-Methyl stilbazolium p chlorobenzenesulfonate(DASC) in a mixed solvent system <i>International journal for research in science Engineering and Technology</i>	2394-739x	3, 37-40, 2016
	Growth and characterization of a novel organic stilbazolium family single crystal: 4-(4-Methoxystyryl)-1-methylpyridinium 4-chlorobenzenesulfonate <i>International journal of scientific research in science and technology(IJSRST)</i>	2395-6011	3, 33-37, 2017
	A comparative study on morphological and optical properties of pure and oleic acid added organic stilbazolium nanocrystal of DAST embedded in a PVA matrix for NLO applications <i>International Journal of Scientific Research in Science and Technology(IJSRST)</i>	2395-6011	3, 38-42, 2017
	Dr. P Christuraj		
	Growth and Characterization of 1-Histidinium Chloroacetate(LHCA) <i>Optik</i>	International	127, 110-115, 2016
	Growth and Characterization of 1-threonine phosphate(LTP) a new semiorganic NLO crystal, <i>Optik</i>	International	126, 5517-5521, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr. P Christuraj		
	Spectroscopic, Mechanical and Optical Properties of L-Serine Ammonium Carbonate (LSAC) Single crystal <i>International Research Journal of Engineering and Technology</i>	International	4, 113-115, 2017
	Linear and Nonlinear Optical Properties of metal incorporated L-Serine Crystal <i>International Research Journal of Engineering and Technology</i>	2395-0056	4, 75-77, 2017
	Synthesis, growth and characterization of Trifluoroacetyl glycine (TFAG) single crystals <i>International journal of Scientific Research in Science and Technology</i>	2395-6011	3, 53, 2017
	Spectroscopic, mechanical and optical studies of L-Valine picrate single crystal <i>International journal of Scientific Research in Science and Technology</i>	2395-6011	3, 49, 2017
	Spectroscopic, hyper polarisability and optical properties of N-Benzyl - 2 - Methyl - 4 - nitro aniline single crystal <i>International journal of Scientific Research in Science and Technology</i>	2395-6011	3, 15, 2017
	Ms A Maggie Dayana		
	Effect of TiO ₂ /reduced graphene oxide composite thin film as a blocking layer on the efficiency of dye-sensitized solar cells <i>Journal of Solid State Electrochemistry</i>	1432-8488	21, 2016
	Dr.A.Leo Rajesh		
	Synthesis, Structural, Spectral and Optical characterization of Barium Bis-Paranitrophenolatr paranitrophenol Tetrahydrate NLO single crystal <i>International Research Journal of Engineering and Science</i>	International 2395-0072	2,412-418, 2015
	The post annealed effect on the optical properties of Cu ₂ ZnSnS ₄ Nanomaterials <i>International Journal on Applied Bioengineering</i>	0973-9084	9, 49-53, 2015
	Effect of annealing on cobalt oxide nanoparticles for concentrated solar power system <i>Journal of Chemical and Pharmaceutical Sciences</i>	0974-2115	11, 185-188, 2015
	Synthesis, Structural, Optical, Mechanical and Electrical Properties of Semi-Organic Nonlinear Optical Material: Lithium Para-Nitrophenolate Trihydrate <i>Journal of Chemical and Pharmaceutical Sciences</i>	0974-2115	11, 89-92, 2015
	Synthesis and Characterisation of Cu ₂ ZnSnS ₄ nanoparticles by Solvothermal Method <i>International Conference on Nanomaterials and Nanotechnology</i>	978-93-85436-76-5	29-32, 2015

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr.A.Leo Rajesh		
	Synthesis and characterization of semi-organic nonlinear optical material: Sodium para-nitrophenolate para-nitrophenol dihydrate <i>Optik</i>	0030-4026	127, 6982-6990, 2016
	Synthesis and characterization of organic nonlinear optical material: urea para-nitrophenol <i>Journal of Material Science: Materials in Electronics</i>	0957-4522	27, 7509-7517, 2016
	Synthesis, growth and characterization of L-Alanine Potassium Chloride single crystal: a phase-matchable semi-organic material for second and third order NLO applications <i>Journal of Material Science: Materials in Electronics</i>	0957-4522	28, 1051-1059, 2016
	Crystal growth and DFT insight on sodium para-nitrophenolate para-nitrophenol dihydrate single crystal for NLO applications <i>Journal of Molecular Structure</i>	0022-2860	1125, 01-11, 2016
	Depth Wise Radiological Analysis of Sediment Sands in Cauvery and Kollidam Rivers in Tiruchirappalli District ,Tamilnadu , India <i>International Journal of Scientific Research in Environmental Sciences</i>	2322-4983	4(1), 0023-0032, 2016
	Synthesis, Growth and characterization of NLO single crystal: L-Histidine tetrafluoroborate <i>Journal of Chemical and Pharmaceutical Sciences</i>	0974-2115	9, 125-128, 2016
	Growth and characterization of L-Alanine sodium nitrate single crystal for second and third order NLO applications <i>International Journal for Research in Science Engineering and Technology</i>	2394-739X	3, 14-22, 2016
	Temperature dependent solvothermal synthesis of Cu-Sb-S nanoparticles with tunable structural and optical properties <i>Materials Research Bulletin</i>	0025-5408	95, 267-276, 2017
	Role of ZnO as a transparent layer in thin film solar cell using spray pyrolysis technique <i>Internatioanl Journal of Scientific Research in Science and Technology</i>	2395-602X	3, 273-277, 2017
	Sphere-like CuSbS ₂ nanoparticles synthesized by solvothermal method for photovoltaic application <i>Internatioanl Journal of Scientific Research in Science and Technology</i>	2395-602X	3, 268-272, 2017
	Non-vacuum based preparation of heterojunction thin film layers for photovoltaic application <i>Internatioanl Journal of Scientific Research in Science and Technology</i>	2395-602X	3, 264-267, 2017

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr.A.Leo Rajesh		
	Synthesis and characterization of Cerium doped CaMnO ₃ nanoparticles <i>Internatioanl Journal of Scientific Research in Science and Technology</i>	2395-602X	3, 140-145, 2017
	Growth and characterization of L-Glycine Sodium Nitrate single crystal for electro-optic application <i>Internatioanl Journal of Scientific Research in Science and Technology</i>	2395-602X	3, 43-48, 2017
	Synthesis and characterization of ZnS nanostructured thin films using chemical spray pyrolysis International journal for research in science engineering and technology	2395-0096	4, 66-69, 2017
	Effect of precursor on the efficient formation of ZnS thin films for buffer layer <i>International Research Journal of Engineering and Technology</i>	2395-0096	4, 82-85, 2017
	Solution processed p-type Cu ₂ ZnSnS ₄ thin films for absorber layer <i>Journal of Inorganic and Organometallic Polymers and Materials</i>	1574-1451	27, 15562-156, 2017
	Investigating the effects of solvent for the preparation of CuSbS ₂ nanoparticles by solvothermal method <i>AIP Conference Proceedings</i>	1551-7616	1832, 05007-13, 2017
	Growth and Characterization of L-Glycine thourea nonlinear optical single crystal for optoelectronic applications <i>Journal of Material Science: Materials in Electronics</i>	1573-482X	28, 10893-901, 2017
	Effect of Zn/Sn molar ratio on the microstructural and optical properties of Cu ₂ Zn _{1-x} Sn _x S ₄ thin films prepared by spray pyrolysis technique, <i>Physica B: Condensed Matter</i>	0921-4526	533, 22-27, 2017
	Dr M M Armstrong Arasu		
	Study on binary mixtures of 2-methoxy ethanol and ethyl acetate at 303.15k <i>Proceedings of National Symposium on Acoustics – 2015</i>		1, 88, 2015
	Study on thermodynamical parameters of ternary liquid mixtures <i>Proceedings of National Symposium on Acoustics - 2015</i>		1, 89, 2015
	Ultrasonic Studies on Molecular interaction in Ternary liquid mixtures of n-n dimethyl formamide, methyl benzoate, and cyclohexane At 303K, 313K, and 323K? <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0072	4, 231, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr M M Armstrong Arasu		
	Thermo-Acoustical Molecular Interaction Studies in Binary Liquid Mixtures by Ultrasonic Velocity Measurement (Diethylamine + n-Butanol) At 303.15K <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0056	4, 42, 2017
	Acoustical and Thermodynamical Studies in Ternary Mixtures of Ethylene Glycol and Glycerol with Octanol AT 303.15K? <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0056	4, 36, 2017
	Dr. A. J. Clement Lourduraj		
	Thermodynamical studies on binary mixture Methyl Benzoate + 2-Ethoxy Ethanol <i>Proceedings of National Symposium on Acoustics - 2015</i>	National	1, 98, 2015
	Thermodynamical studies on binary mixture Methyl Benzoate + 2-Butoxy Ethanol <i>Proceedings of National Symposium on Acoustics - 2015</i>	National	1, 99, 2015
	Confirmation of ultrasonic parameter using FTIR analyse for binary mixture of Methyl Benzoate + 2-Ethoxy Ethanol <i>Proceedings of National Symposium on Acoustics - 2015</i>	National	1, 100, 2015
	Confirmation of ultrasonic parameter using FTIR analyse for binary mixture of Methyl Benzoate + 2-Butoxy Ethanol <i>Proceedings of National Symposium on Acoustics - 2015</i>	National	1, 101, 2015
	Large Scale Synthesis and Characterization of Few Layer Graphene Nanosheets for Supercapacitor Applications. <i>International Research Journal of Engineering and Technology</i>	2395-0072	4, 327 – 329, 2017
	Synthesis of few Layer Graphene using Mechanical Exfoliation of Kitchen Blender Method for Super Capacitor Applications <i>International journal of Scientific Research in Science and Technology</i>	2395-6011	3, 258 – 263, 2017
	Bulk Synthesis and Characterization of Multiwalled Carbon Nanotubes by CVD method <i>International journal of Scientific Research in Science and Technology</i>	2395-6011	3, 114 – 118, 2017
	Structural and Surface Morphology Studies of Zinc Sulphide Nanopowers <i>International Research Journal of Engineering and Technology</i>	2395-0072	4, 256, 2017
	Characterization of Spray Deposited MnO ₂ Thin Films <i>International journal of Scientific Research in Science and Technology</i>	2395-6011	3, 251, 2017

9 Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17			
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr A. J. Clement Lourduraj		
	Synthesis and characterization of MnO ₂ Nanoparticles using Co-precipitation Technique <i>International journal of Scientific Research in Science and Technology</i>	2395-6011	3, 125, 2017
	Confirmation of Ultrasonic parameters using FTIR analyse for binary mixtur of methyl benzonate + 2-Ethoxy ethanol and methyl benzonate + 2-Butoxy ethanol <i>Journal of Acoustical Society of India</i>	0973-3302	43, 152 – 159, 2016
	Dr R. Jerald Vijay		
	Linear and Non-Linear Optical Properties of Environmentally Stable DASC Single Crystal <i>International Journal of Latest Research in Engineering and Technology</i>	2454-5031	14, 2016
	Structural, elemental and dielectric properties of an organic stilbazolium single crystal of DAAS <i>International Journal of Latest Research in Engineering and Technology</i>	2454-5031	58, 2016
	Dr S Dinakaran		
	Preparation and characterization of nanosized Ag/SLN composite and its viability for improved occlusion <i>Applied Nanoscience</i>		6, 1065-1072, 2016
	Bio inspired synthesis of monodispersed silver nano particles using Sapindus emarginatus pericarp extract ? Study of antibacterial efficacy <i>Journal of Saudi Chemical Society</i>		21, 172-179, 2017
	Mr. G.Samual		
	Estimation of Vitamin Content in Fruit Juices by Ultrasonic technique <i>International Journal of Engineering Science Invention</i>	International 2319-6734	4,15-19, 2015
	Estimation of Mineral Content in Vegetable Extraction by Ultrasonic Technique <i>International Journal of Engineering Science Invention</i>	International 2319-6734	4,20-23, 2015
	Ultrasonic Study on Coconut Water and Sugar Solution before and after Laser Exposure <i>IOSR Journal of Applied Physics</i>	International 2278-4861	7,151-152, 2015
	ULTRASONIC STUDY ON MORINGA OLIEFERA SOLUTION BEFORE AND AFTER LASER EXPOSURE <i>International journal for Research</i>	2348-6848	4, 607-611, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Mr.S.Lourduraj		
	Structural and Optical Characterization of Synthesized TiO ₂ nano Powder using Sol-Gel Technique <i>International Journal of Nanoscience</i>	International 0219-581X	2016
	Effect of Molarity on Sol-Gel routed Nano TiO ₂ Thin films <i>Journal of Advanced Dielectrics (World Scientific)</i>	2010-135X	4, 1750042, 2017
	Ms F Celin Hemalatha		
	Synthesis and characterization of mno ₂ nanoparticles using co-precipitation technique <i>IJSRST</i>	2395-602X	3, 125-128, 2017
	Mr M Francis		
	Synthesis, structural, spectral and optical characterization of Barium Bis- Paranitrophenolate paranitrophenol Tetrahydrate (BBPT) NLO single crystal <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395 -0056	02, 2015
	Synthesis, growth and characterization of l-alanine potassium chloride single crystal, a phase matchable semi-organic material for second and third order applications <i>Materials in Electronics</i>	0957-4522	28, 2017
	Mr P. Adal Arasu		
	Effect of annealing temperature on structural and optical parameters of sol-gel routed molybdenum oxide thin film. <i>Surface review and Letters</i>	0218-625X	22, 4, 2015
	Effect of annealing temperature on the dispersion energy parameters of sol-gel routed molybdenum oxide thin film <i>International Journal of Development Research</i>	2230-9926	6, 2016
	Dielectric studies on molybdenum oxide thinfilm <i>Journal of advanced dielectrics</i>	2010-135X	7, 2, 2017
	Mr J Ranjith Rajasekar		
	Preparation and Characterization of spray coated pure and copper doped tin oxide thin films <i>International Journal of Scientific Research and technology(IJSRST)</i>	2395-6011	3, 11, 2017
	Synthesis of CZTS solar cell absorber material by chemical spray pyrolysis method <i>International journal for Research(IJR)</i>	2348-6848	4, 11, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr M Lawrence		
	Growth and characterization of pure and L-Alanine doped Zinc Tris-thiourea Sulphate (ZTS) single crystals <i>International Journal of Engineering Science and Innovative Technology (IJESIT)</i>	2319-5967	4(2), 208-214, 2015
	Growth, Optical, Thermal and Mechanical Studies of L-lysine Doped Sodium Acid Phthalate Crystal <i>International Journal of Advanced and Innovative Research(IJAIR)</i>	2278-7844	4(3), 342 – 346, 2015
	X-Ray Diffraction Analyses of Titanium Dioxide nanoparticles <i>International journal of scientific research in science & technology (IJSRST)</i>	2395-6011	3, 83-88, 2017
	Dr H Joy Prabu		
	Antibacterial activity of silver nanoparticles synthesized from plant leaf extract of Cycas circinalis, Ficus amplissima, Commelina benghalensis and Lippia nodiflora leaves <i>Journal of Chemical and Pharmaceutical Research</i>	0975-7384	7(9), 443-449, 2015
	Eco-Friendly Electrochemical Synthesis of Rod Shaped Ag Nanostructures for Battery Application <i>International Journal of ChemTech Research</i>	2455-9555	8, 271-277 2015
	Greener cum chemical synthesis and characterization of Mg doped ZnS nanoparticles and their engineering band gap performance <i>Journal of Engineering Research and Applications</i>	2248-9622	5(8), 99-105, 2015
	Green synthesis and characterization of silver nanoparticles by leaf extracts of Cycas circinalis, Ficus amplissima, Commelina benghalensis and Lippia nodiflora <i>International Nano Letters (Springer)</i>	2008-9295	5(1), 43-51, 2015
	Plant-mediated biosynthesis and characterization of silver nanoparticles by leaf extracts of Tragia involucrata, Cymbopogon citronella, Solanum verbascifolium and Tylophora ovata <i>Karbala International Journal of Modern Science (Elsevier)</i>	2405-609X	1(4), 237-246, 2015
	Flower-Shaped CuO Nanostructure Synthesized by Sonochemical Method and the effect of NaOH concentrations <i>International Journal of Advanced Research</i>	2320-5407	3(8), 1091-1096, 2015
	Hydrothermal Synthesis of ZnO Nano-Honeycomb Structures and their Activity against Pathogenic Bacteria <i>International Journal of PharmTech Research</i>	2455-9563	8(6), 65-71, 2016

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr H Joy Prabu		
	Ultrasonication-assisted Transestrification for Biodiesel Production by Using Heterogeneous ZnO Nanocatalyst <i>Environmental Progress & Sustainable Energy</i>	1944-7450	37(1), 2017
	Facile Preparation and Characterizations of Silica decorated Graphene nanocomposites <i>International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET)</i>	2394-4099	3, 941-945, 2017
	Synthesis and Characterizations of Needle- Shaped CuO Nanoparticles for Biodiesel Application <i>International Journal of Advanced Research(IJAR)</i>	2320-5407	5(1), 1642-1648, 2017
	Green Synthesis and Characterizations of Flower Shaped CuO Nanoparticles for Biodiesel Application <i>Sensors & Transducers</i>	1726-5479	210(3), 38-41, 2017
	Synthesis and characterization of ZnO/CNT nanocomposites <i>International Research Journal of Engineering and Technology</i>	2395-0056	4(9), 86-88, 2017
	Comparative Studies on Bio and Chemically Synthesized CuO Nanoparticles and their Antibacterial Activity <i>International Research Journal of Pharmacy (IRJP)</i>	2230 - 8407	8(10), 2017
	Dr M Dinesh Raja		
	Structural and optical properties of L-Ornithine Monohydrochloride <i>Invertis Journal of Science & Technology</i>	0973-8940	9(1), 19, 2016
	Synthesis, Growth and Characterization of Trifluoroacetyl Glycine (TFAG) Single Crystal <i>International Journal of Scientific Research in Science and Technology (IJSRST)</i>	2395-6011	3, 53, 2017
	Spectroscopic, Mechanical and Optical Studies of L-Valine Picrate (LVP) Single Crystal <i>International Journal of Scientific Research in Science and Technology (IJSRST)</i>	2395-6011	3, 49 2017
	<i>Spectroscopic, Hyperpolarizability and Optical Properties of N-benzyl-2-methyl-4-nitro aniline (BNA) Single Crystal</i> <i>International Journal of Scientific Research in Science and Technology (IJSRST)</i>	2395-6011	3, 15 2017
	Linear and Nonlinear Optical Properties of metal incorporated L-Serine Crystal <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0056	4, 2017

9	Details of full length research publications (in peer-reviewed journals) for the year 2015-16 & 2016-17		
S.No.	Authors, Title of the Paper, Name of the Journal	Nature & ISSN	Vol., page & Year
	Dr M Dinesh Raja		
	Spectroscopic, Mechanical and Optical Properties of L-Serine Ammonium Carbonate (LSAC) Single crystal <i>International Research Journal of Engineering and Technology (IRJET)</i>	2395-0056	4, 2017

10	Sponsored research projects in operation during the period 2015-16 & 2016-17			
S.No.	Name of the Investigator	Title of the Project	Funding Agency	Amount Rs.
1	Dr. S. Alfred Cecil Raj	Non Linear Optical effect of organic materials stepping towards to quantum computing	NASI	3,25,600 /-
2	Dr. A.J. Clement Lourduraj	Liquid State Chemical Physics	UGC, Hyderabad	2,75,000/-
3	Dr. S. Alfred Cecil Raj	Explorations of endowed properties of DAST NLO crystals for THz generators	DST, New Delhi	17,03,000/-
4	Dr. A. Leo Rajesh	Fabrication of eco-friendly and cost effective thin film solar cell with an optimized Cu ₂ ZnSnS ₄ material	UGC-DAECRSR, Kalpakkam	7,68,600/-
5	Prof. M. Francis	Growth and Characterization of Valine based non-linear optical single crystals	UGC, Hyderabad	2,50,000/-

11	Utilization of Equipment from outside the department
	The equipments are not used for Scholars / Students from outside the department

12	Self-Assessment of the Impact of FIST support: Please specify, if any of the following activity emerged / improved as a consequence of the FIST support
	a. New class-room experiments at B.Sc / M.Sc or other levels Dielectric Constant and curie temperature of Ferroelectric ceramics, Magnetic Hysteresis loop, Hall Effect, Milikan' Oil drop, Zeeman Effect, ESR spectrometer
	b. Success of students at national level tests (varous PG / PhD entrance tests and test for JRF, etc.) The following Students qualified SET 2015 – 2016 <i>Mr. G. Samuel (3001645), Mr. M. Francis (3001435), Mr. Novin Roy (3001562), Mr. F. Shangith (3000885)</i>
	c. Any new research project that emeged on the basis of the FIST support
	d. Did the newly created facility lead to betterment of quality of research publications
	e. Any training program / workshop organized by the department during the period of report, specifically those involving the newly created facility One day National Conference on Advanced Materials (24 Feb 2014) Workshop on Advanced Physics Experiments for college teachers. (18 &19, Dec 2015) National Conference on Advanced materials-2016 – NCAM-2016 (7 Oct 2016). International Conference on Advanced materials-2017 – ICAM-2018 (14 &15 Dec 2017)

13	Is any problem faced in utilization of the grant / facilities?
	No

A Report Highlighting the Research Activities of the Department

during the period under review, may also be provided

Research Profile of the Department of Mathematics		
Research Program	Ph.D	M.Phil
No. of Scholars	14	48
Areas of Research	Nanoscience, Thin Films, Crystal Growth, Ultrasonics and Material Characteristics, Lattice Dynamics	Nanoscience, Thin Films, Crystal Growth, Ultrasonics and Material Characteristics, Lattice Dynamics
Success rate of Scholars per year	3 per year	19 per year
Total number of Research Papers, published during 2015-2017	148	

APPENDIX I
List of Books purchased through DST-FIST Fund 2015

APPENDIX I
ARRUPE LIBRARY, ST. JOSEPH'S COLLEGE, TIRUCHIRAPPALLI
BOOKS BOUGHT UNDER FIST Account 2015-2016

Acc.No	Author	Title of the Document	Vendor	Bill No/ Date	Price
170118	Chorlton, F	Textbook of Fluid Dynamics	Standard Book Distributing House	668 / 31-08-15	240.00
170119	Chorlton, F	Textbook of Fluid Dynamics			240.00
170120	Chorlton, F	Textbook of Fluid Dynamics			240.00
170121	Chorlton, F	Textbook of Fluid Dynamics			240.00
170122	Chorlton, F	Textbook of Fluid Dynamics			240.00
170123	Horowitz,	Fundamentals of Computer Algorithms			410.00
170124	Horowitz,	Fundamentals of Computer Algorithms			410.00
170125	Horowitz,	Fundamentals of Computer Algorithms			410.00
170126	Horowitz,	Fundamentals of Computer Algorithms			410.00
170127	Horowitz,	Fundamentals of Computer Algorithms			410.00
170128	Ahlfors, V Lars	Complex Analysis (3e)			325.00
170129	Ahlfors, V Lars	Complex Analysis (3e)			325.00
170130	Ahlfors, V Lars	Complex Analysis (3e)			325.00
170131	Ahlfors, V Lars	Complex Analysis (3e)			325.00
170132	Ahlfors, V Lars	Complex Analysis (3e)			325.00
170133	Rudin, W	Real & Comlex Analysis(3)			350.00
170134	Rudin, W	Real & Comlex Analysis(3)			350.00
170135	Rudin, W	Real & Comlex Analysis(3)			350.00
170136	Rudin, W	Real & Comlex Analysis(3)			350.00
170137	Rudin, W	Real & Comlex Analysis(3)			350.00
170138	Rudin, Walter	Principles of Mathematical Analysis (3e)	325.00		
170139	Rudin, Walter	Principles of Mathematical Analysis (3e)	325.00		
170140	Rudin, Walter	Principles of Mathematical Analysis (3e)	325.00		
170141	Rudin, Walter	Principles of Mathematical Analysis (3e)	325.00		
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