

RESEARCH CONTRIBUTIONS OF SRM UNIVERSITY SINCE INCEPTION

1 INTRODUCTION

SRM University was born during 2002-2003. This University with institutions of 25 years of existence under its ambit has emerged as one of the largest privately funded Universities in the country, including the faculties of Science and Humanity, Engineering and Technology and Medical and Health Sciences. The Research activities of the University were accelerated from the year 2003 onwards. Extensive research facilities were created to promote innovative research. The students and Staff are encouraged to innovate through quality research in emerging areas. Each department has its own laboratories and facilities, equipped to handle high-end research. The Research activities in the University include Academic research and Funded research projects in the Faculties of Engineering & Technology, Medical & Health Sciences and Science & Humanities.

2 ACADEMIC RESEARCH

Scholars seeking to pursue a doctorate degree will find a variety of specializations to choose from and qualified researchers to guide them. Seven hundred and ninety four research scholars are currently pursuing their Ph.D programs at the University in the Faculties of Engineering & Technology, Science & Humanities and Medical & Health Sciences.

2.1 Faculty of Engineering and Technology

In the Faculty of Engineering & Technology 347 candidates have registered for Ph.D. Out of which 84 candidates are doing full time research. All the full time scholars are given stipend from the University resources. The details of the research scholars are given Table 2.a.

Table 2.a Details of Research Scholars pursuing Ph.D Program

Sl. No	Department	No. of Candidates		No. of Guides	Thrust Areas
		Part Time	Full Time		
1.	Computer Science and Engineering	51	4	12	Soft Computing Database/ Data Mining & Warehousing Networks/Network Security Wireless Communications Wireless Sensor Networks Software Engineering Medical Image Processing Cloud Computing Pattern Recognition Image Processing

Sl. No	Department	No. of Candidates		No. of Guides	Thrust Areas
		Part Time	Full Time		
2.	Electronics and Communication Engineering	30	4	9	Wireless Communications Bio Photonics VLSI Design Digital Signal Processing Wimax, MEMS Nanoelectronics Wireless Sensor Networks Design of Antennas for New Generation Wireless Communication Systems
3.	Electrical and Electronics Engineering	34	1	9	Power systems Converter and Inverter Drives and Control FACTS Power Electronics Application to Wind Solar Energy Speed Control of Induction motor
4.	Instrumentation and Control Engineering	10	0	1	Virtual Instrumentation Process Control and Instrumentation Embedded Systems Wireless Sensor Networks MEMS & Micro Sensors
5.	Civil Engineering	26	1	5	Transportation Engineering by using GIS High Strength Concrete Environmental Engineering Concrete Nanotechnology Structural Engineering Structural Systems Steel Concrete composites Studying the shear behavior of high strength concrete beam Environmental Impact Assessment of Highway Projects and Concrete Technology
6.	Mechanical Engineering	39	0	10	Thermal Engineering Machining of Composites Nano Machining Process Solar Energy BIO-CAD Biomechanics Nanocomposite Alternative Fuels for IC Engine Metal Cutting Engineering Design Finite Element Analysis
7.	Biotechnology	36	40	17	Environmental Biotechnology Plant Biotechnology Animal Biotechnology Forensic Biotechnology Medical Biotechnology Industrial Biotechnology

Sl. No	Department	No. of Candidates		No. of Guides	Thrust Areas
		Part Time	Full Time		
8.	Biomedical Engineering	08	2	1	Biomedical Instrumentation and its Application Medical Image Processing Biosensors IR Thermography Bone Densitometry
9.	Chemical Engineering	10	0	3	Bio Fuels Mass Transfer—Diffusion, Extraction Waste Management, Industrial Effluent Treatment and Recycling Food Technology Oil and Fat
10.	Genetic Engineering	4	13	3	Gene isolation and genetic engineering in <i>Jatropha</i> Genes for oil biosynthesis Genes for crop improvement DNA Barcoding of Medicinal Plants Production of human PDGF in plants for curing diabetic foot ulcer Microbial Fuel Cell (MFC)
11.	Food and Process	6	1	3	Food Preservation Technology Development of Value added medicinal food products Value added products from grains , fruits & vegetables Value added products from unutilized fruit & vegetables Value addition of milk based products Food industrial wastes & by products utilization
12.	Bioinformatics	6	14	3	Biological activities of secondary metabolites from Marine actinomycetes Multidrug resistance of bacteria to antibiotics Identification and in vitro validation of target specific inhibitors for matrix metalloproteinases (MMPs) Cloning of key enzymes of artemisinin biosynthesis:
13.	Bioprocess Engineering	3	0	1	Developing and optimizing novel downstream processing operations for bioproducts, Synthesis and characterization of tailored peptides with application in animal feed industry and Efficient pretreatment methods for lignocellulosic biomass with applications in biofuel industry.

Sl. No	Department	No. of Candidates		No. of Guides	Thrust Areas
		Part Time	Full Time		
14.	Center for Environmental Nuclear Research	-	4	1	Radiation Biology Phytoremediation Environmental Risk Assessment Probiotics for Human Nutrition & Health Pharmacological Screening of Indian Medicinal Plants Studies on Green Nano-Medicine Nano Remediation
Total		263	84	78	

2.2 Faculty of Science and Humanities

About 370 candidates are currently pursuing research in the Faculty of Science & Humanities. 46 of them are full time scholars, These full time scholars are also receiving stipend from the University. The Table 2.b. gives the details of the research scholars.

Table 2. b Details of Research Scholar pursuing Ph.D. Program

Sl.No	Department	No. of Candidates		No. of Guides	Thrust Area
		Part Time	Full Time		
1.	Mathematics	27	3	7	Fluid Mechanics Non – Archimedian Analysis Squeeze Film Lubrication Fluid Dynamics Computational Fluid Dynamics Medical Statistics,Operational Research Statistics Number theory Interval Analysis Fuzzy Set and Fuzzy Optimisation
2.	Physics	23	18	7	Synthesis and Characterization of Organic Materials Capped Semiconducting Nano Structures Crystal Structure analysis of compounds Integrated Circuits Packaging Crystal Circuit, Dielectrics Circuit and System architecture for DND-Guided assembly of Nano electronics Growth & Characterization of organic NLO Crystals, Bio Ceramics Study of Electronic Transport properties of Carbon Nano tubes Nonlinear optical crystals and Molecular Nano Electronic Devices

Sl.No	Department	No. of Candidates		No. of Guides	Thrust Area
		Part Time	Full Time		
3.	Chemistry	30	7	8	Kinetics and Catalysis Synthesis Characterization and Biological Activity of some Novel Tetrazoles Organic Synthesis Synthesis and characterization of synthesis(characterization) Bio-polymers Corrosion Studies Polymer Compoests material and applications Polyurethane of Dispersion and polymer Nano-Composites
4.	Management	160	5	29	Marketing Brand Management Energy Economics E-Commerce Customer Relationship Management Role and Functioning of Small and Medium Enterprises HRM Training & Development Managerial Skills supply chain Management Accounting Related Sociology of Patient and Child relationships Role of SHGs in women empowerment Organizational Behavior Impact of Government Insurance Roll of NGOs
5.	English	11	0	2	Literature and Law Indian writing in English American Literature English Language Teaching Enriching listening skills among students entering college Teaching Skills in English
6.	Hindi	0	0	2	Condition of Dalit & Women in Hindi Literature Role Of Literature In Social & Cultural Reform Modern Poetry and Fiction
7.	Nano-Tech	1	8	6	Nano Structure Nano Particles as inclusions in Gemstones Storage Devices Nanotoxicology Environmental Nanoscience, Nanomgnetism & Nanomagnetic Materials Drug Delivery system

8.	Tamil	16	0	6	Pen Kavijergalin Kavithaigal Tamil Navalgazhlil Thonmam Modern Poet 'Bharathi Dasan' Involvement in Ananda Vikadan News paper Chitar Patria Aivugzhal Sanga Ilakkiyam Tamil Literature
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Directorate of Research, SRM University, Kattankulathur

Sl.No	Department	No. of Candidates		No. of Guides	Thrust Area
		Part Time	Full Time		
8.	Visual Communication	4	0	1	Transaction of Hollywood films into Tamil films Actor Director Relationship in Tamil films Impact of Mass Media on Children Television Women journalists in Tamilnadu
9.	Nutrition	1	0	1	Sports Nutrition Fat Nutrition Women Nutrition Nutrition for Mother and Child. Animal Nutrituion
10.	Computer Science	16	1	9	Mobile Computing Data Mining A Systematic approach to simplify Boolean-expression Turbo Coder Cryptography Artificial Intelligence Robotics
11.	Biotechnology	6	0	2	Clinical Biochemistry Biological & Chemical Processes Nanobiotechnology Industrial Biotechnology Health Biotechnology Agricultural Biotechnology Environmental Biotechnology
12.	Public Administration	1	0	1	Indian Administration State Administration E-Governance Good Governance
13.	Education	23	1	6	Educational Skills Functioning of Autonomy in Selected Colleges' ICT for Quality Assurance in Secondary Education Cerebral Palsy Computer Anxiety Skills of Computer Education Orphan children Life oriented Techniques Learning Styles Teaching Skills Awareness of ICT improve communication Skill at Middle school level
14.	Bio informatics	5	3	2	Stem Cell Research Biotechnology (Nutraceutical /Enzyme)
Total		324	46	87	

2.3 Faculty of Medical and Health Sciences

It is very much encouraging that 80 candidates have registered for Ph.D in the Faculty of Medical & Health Sciences and 16 of them are full time scholars. The details are given in Table 2.c

Table 2. c Details of Research scholars pursuing Ph.D., Program

Sl.No	Department	No. of Candidates		No. of Guides	Thrust Area
		Part Time	Full Time		
1.	School of Public Health	7	3	4	Transmission of HIV Malaria Lung diseases Carcinoma cervix Unsafe sexual behaviors Juvenile Delinquency Interventional studies,e-IMNCI
2.	Medical Research	6	4	4	Aging Dermatology and Yoga Diabetes and Cancer Research Cognitive function Endocrinology Toxicology Urinary bladder Cancer
3.	Anatomy	4	1	1	Stress on pancreas Neuroanatomy
4.	College of Nursing	8	0	2	Preterm birth Sibling preparation package
5.	Pediatrics	8	1	2	Assessment of children with Gravitational insecurity Behavior of children of alcoholics
6.	Biochemistry	6	2	2	Carbohydrate metabolism Cell biology Renal disease Ayurvedic medicine
7.	Microbiology	5	3	1	Female Reproductive system and pathogens Rheumatoid Arthritis Bacterial infections
8.	College of Pharmacy	10	2	2	Development and Validation of new analytical techniques Phytochemical screening of herbal products, Synthesis of novel heterocyclic compounds Computer Aided Molecular Modeling Transdermal drug delivery system Nanoparticles and Microspheres Evaluation of pharmacological activities

Sl.No	Department	No. of Candidates		No. of Guides	Thrust Area
		Part Time	Full Time		
					Pharmacognostical study and Biological screening of Natural products
9.	OG	2	-	2	Polycystic ovary syndrome Music therapy Aroma therapy
10.	Psychiatric	1			Male erectile dysfunction
11.	Physiology	1	-	1	Type 2 diabetes mellitus
12.	General Medicine	1	-	1	Diabetes Mellitus prevention
13.	Ortho Pediatric	1	-	1	Pain and nerve stimulation
14.	Prosthodontics	1	-	1	Mandibular prostrusive appliance
15.	Oral Pathology	1	-	1	Oral Cancer
16.	Medicine	1	-	1	Pharmaco vigilance study, Cardiovascular system
17.	Microbiology	1	-	1	Virology
Total		64	16	27	

More than 1000 papers have been published by faculty members and the research scholars so far and many of these papers have been published in SCI journals. The faculty members and students are provided with financial assistance by the University to participate and present their papers in national and international conferences, seminars and symposia held in India and abroad.

3 FUNDED R&D PROJECTS

SRM University lays emphasis on research activities. The University encourages, supports and provides necessary facilities and also provides seed money to carry out research activities. About 50 pilot projects of the faculty members have been financially supported by the University which led to publication of good papers and also project proposals for the financial support from different funding agencies. The students are also encouraged and provided financial assistance to carry out innovative projects with societal applications.

Active research is being carried out in different areas including Biotechnology, Genetic Engineering, Bioinformatics, Molecular Biology, Stem Cell Research, nanotechnology, Power Electronics, Wireless Communications, VLSI, Embedded systems, Structural Engineering, Nanotechnology, Physics etc., Details of the project proposals submitted to various funding agencies are given Table 3b.

3.1 Ongoing Projects

34 major research projects with a total outlay of Rs.2621.34 lakhs funded by DBT, DST, BRNS, Ministry of Health and Family welfare, DRDO, ISRO, UNICEF, etc. are being carried out in the University. The School of Bioengineering, Departments Electronics and Communication Engineering and Physics are awarded with the prestigious DST-FIST funding. The Department of Science and Technology

has sanctioned Rs.1496 lakhs for Establishment of National facility for conducting clinical trails on Ayurveda, Siddha & Unani Products The details of the Ongoing Funded projects are given in Table 3a.

Table 3.a Ongoing projects

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in Lakhs)
1.	Rhizosphere Microbial Community for Sulfur transformation in Rice	Dr. K. Ramasamy School of Bioengineering	DBT	May 2007	30.13
2.	Prospecting of Genes for Oil Biosynthesis from <i>Jatropha Curcas</i> : Gene Discovery by pooled probe Hybridization and Large Scale EST Sequencing of Normalised cDNA Library from Developing Seeds	Dr. M. Parani Dept of Genetic Engineering	DBT	Sept. 2007	27.94
3.	Development of Nano filters for water purification and removable of VOC's from contaminated Air	Mr. C. Goplakrishnan, Nanotechnology Center	DBT	May 2007	120.00
4.	Career Award for Young Teachers	Ms. Shanthi Prince Dept. of ECE	ECE	Jan. 2007	10.50
5.	Modulation of Neural Immune Signaling by estrogen in reproductive aging	Dr. S. Thayagarajan Dept. of Biotechnology	DST	April 2008	37.44
5.	Equipping Laboratory	Dr. K. Ramasamy Dept. of Biotechnology	Ministry of Food Processing	Jan. 2008	50.00
7.	Uncertainty analysis of ground water problem using interval analysis	Dr. K. Ganesan Dept of Mathematics	BRNS	Jan 2009	10.92
8.	DST-FIST Program	School of Bioengineering	DST	Jan 2009	130.00
9.	Dietary Intakes of Naturally occurring Radio unclides like thorium, Uranium Polonium, Pottassium-40 in high Radiation background areas of Mama valakurichy, TN	Smt. S. Subashini Dr. Kantha D. Arunachalam Center for Environmental Nuclear Research	BRNS	Feb 2009	27.80
10.	Evaluation of vetiver for uptake and immobilization of uranium and residual	Mrs. M. Padima Devi Dr. Kantha D. Arunachalam Center for Environmental	BRNS	Feb 2009	35.76

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in Lakhs)
	radionuclides in mill tailings soil and post	Nuclear Research			
11.	Naturally occurring radio nuclides transfer factor (BCF) on aquatic flora and fauna in nagarajuna Sagar dam near Proposed uranium mining site	Dr. Kantha D. Arunachalam Dr. S. Bharathi Center for Environmental Nuclear Research	BRNS	Feb 2009	50.42
12.	Expression of Interest for External conducting global Adult Tobacco Survey (GATS-Indian), 2008	Prof. Ch. Satish Kumar School of Public Health	Ministry of Health & Family welfare GOI	Feb 2009	25.05
13.	Genetic Engineering of Clostridium thermocellum ATCC 27405 for effective conversion of lignocelluloses to ethanal	Dr. Lilly Sabeena School of Bioengineering	SERC-DST Fast Track Project for young scientists	March 2009	17.00
14.	Development and properties of fly ash and bagasse ash based Geo Polymer concrete	Dr. P. Suresh Kumar School of Civil Engineering	Tamil Nadu State Council for Science and Technology	May 2009	0.89
15.	Developing an integrated (Vertical & Horizontal flow) constructed wetland system for treating waste water from small community	Dr. Deeptha Thattai School of Civil Engineering	DST Fast Track Scheme for young scientists	June 2009	9.60
16.	Neurendocrine – Immune interactions in mammary tumorigenesis	Dr. S. Thyagarajan Dr. E. Berla Thangam School of Bioengineering	DBT	June 2009	40.25
17.	Identification of efflux protein inhibitors to gram negative organisms using bioinformatics tools and in vitro analysis and crystallographic studies of target membrane protein inhibitor complexes	Dr. Waheeta Hopper School of Bioengineering SRM University D. D. Velmurugan University of Madras	DBT-India AIST-Japan Bilateral project	June 2009	25.34
18.	Implementation of algorithms for trust and replication in mobile ad hoc networks	Prof. Revathi Venkataraman CSE	DRDO	Jan. 2010	5.00
19.	Role of Indoles and Triterpenes in experimental holder carcinogenesis	Dr. S. Sundaresan Medical Research Department	DST Fast Track Scheme for young scientists	Feb. 2010	13.42
20.	DST-FIST Program	Department of Electronics	DST	March	55.00

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in Lakhs)
		and Communication Engg		2010	
21.	Near ground RF propagation studies for wireless sensor Communications	Dr. T. Rama Rao Telecommunication Engineering	DST	March 2010	37.84
22.	Molecular Mechanism of neonatal sepsis	Dr. E. Berlathangam, Biotechnology	DBT	May 2010	50.00
23.	Evidence Based advocacy strategy for revitalization of ICDS in Tamil Nadu – Phase II	Prof. Ch. Satish Kumar School of Public Health Dr. Anil Krishna Ms. Geetha	UNICEF	April 2010	5.69
24.	Epidemic and Pandemic preparedness response	Prof. Ch. Satish Kumar School of Public Health Dr. Rajan Patil Dr. Anil Krishna	UNICEF	May 2010	15.00
25.	Situational analysis of the program to combat anemia in Krishnagiri, Dharmapuri and Selam Districts of Tamil Nadu	Prof. Ch. Satish Kumar School of Public Health Dr. Rajan Patil Dr. Anil Krishna	UNICEF	May 2010	9.75
25.	Evaluation of the smoke free Chennai mass media campaign	Prof. Ch. Satish Kumar School of Public Health Ms. Geetha	World Lung Foundation Newyork	May 2010	3.00
27.	Improved Satellite rainfall Estimation over India	Dr. T.V. Lakshmikumar Department of Physics	ISRO	July 2010	13.88
28.	Studies on characteristics of Aerosols	Dr. T.V. Lakshmikumar Department of Physics	ISRO	July 2010	43.88
29.	Isolation of endophytes of plants and testing their potential for the control of <i>Ralstonia solanacearum</i>	Ms. Yamani Mishra School of Bioengineering	DST	July 2010	9.84
30.	Physiological Significance of Noni Photochemical on the Neuro – Endocrine – Immune system	Dr. S. Thyagerajan School of Bioengineering	World Noni Research Foundation Chennai	Sept. 2010	10.00
31.	Regulation of mesenchymal stem cell towards osteogenetic cell lineage by micro RNAs	Dr. N. Selvamurugan School of Bioengineering	ICMR	Oct. 2010	24.00
32.	DST-FIST program	Department of Physics	DST	Oct. 2010	60.00
33.	Establishment of National facility for conducting clinical trails on Ayurveda, Siddha & Unani Products	Dr. M. Ponnaivaikko Provost	DST	Nov. 2010	1496.00
34.	SRM Nano Satellite Project	Prof. D.Narayanao Rao Prof. S.V.Kasmir Raja	SRM University	Sep. 2009	120.00

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in Lakhs)
		Mr.M.Loganathan			
Total					2621.34

3.2 Project proposals submitted

49 project proposals have been submitted from February 2009 till date to various funding agencies such as Tamilnadu State Council for Science & Technology, Tata Innovation Fellowships, DBT, ICMR, DST, IGCAR BRNS, Ministry of HRD, etc.. The details of the project proposals submitted are given in Table 3.b.

Table 3.b Project proposals submitted

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in lakhs)
1.	Investigation on structural Behaviour of Coconut shell concrete	Dr. K.S. Sathyanarayanan P.K. Gunasekaran P.R. Kannan Rajkumar	Tamilnadu State Council for Science & Technology	Oct. 2010	39.05
2.	An in Vitro Model to the study beneficial effect of L-Argininl,L-Citurline, Vitamin E, Vitamin C & L – Carnitine an molecular machismos of Cavoline-Mediateol disturbance in cholesterol efflux in macrophages to Foam cell formation with relevance to diabetes	Dr K. Sumitra Medical Research	Tata Innovation Fellowships, DBT New Delhi	Sept. 2010	14.80
3.	Bioremediation of heavy metals / radionuclide waste complying genetically engineered E-coli	Dr. W. Richard Thilagaraj	Tata Innovative Fellowships, DBT New Delhi	Sept. 2010	14.80
4.	Decolourization and degradation of Industrial Dyes using Moringa Loafer Seed Extract-applications of Nano based filter treatment	Dr. W. Richard Thilagaraj	Tata Innovation fellowship, DBT, New Delhi	Sept. 2010	14.80
5.	Predictive prognosis of selerium on postmen opausal co – morbidity and lereast cancer regression in rodent model and Climaacteric women	Dr. E.A. Sonna , Medical Research	ICMR	Sept. 2010	26.25
6.	Investigations on short and long term effect of sudarsh an kriya and pranayam on essential hypertensive	Dr. D. Haripriya Medical Research Co-Dr. Vinod Kochupillai Dr.K.S.Saikumar	ICMR	Sept. 2010	31.65

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in lakhs)
	patients.	General Medicine			
7.	Effects of Dimethoate and accphate and its intermediates on U251 Human Glial cell lines	Dr. S. Barathi Biotechnology	DBT	Aug. 2010	21.6
8.	Identification of Antioridant peptides and their antiproliefertive activity from cephalopols and their wastes	Dr. R.A. Nazeer Biotechnology	DBT	Aug. 2010	39.89
9.	Bioremediation of Heavy metals / radionuclide coast using Enzyme Alkaline phosphates	Dr. Richard Thilagarj Biotechnology	DBT	Aug. 2010	23.34
10.	Effect of erithropoietin on platelet amyliodogenic pathway and serum informatorymolecules in Patients with CKD:Biochemical and Molecular study	Dr. P. Venkataraman Medical Research	ICMR	July 2010	34.7
11.	Prolbiotics effect on Human Health	Dr. Kantha D. Arunachalam CIDR	DBT	June 2010	600.00
12.	Energy harvesting from National Highways through Piezo – Electronics material from might lighting	Dr. V. Sugumaran Mechatronics	DST	May 2010	19.9
13.	Lab view based online remote monitoring of water level in dams located in multiple locations.	Dr. V. Sugumaran Mechatronics	DST	May 2010	20.61
14.	Fresh water augumentation of lake water using waste heat energy from internal combustion engine	Dr. R. Rajavel Mechanical Engineering	DST	May 2010	32.46
15.	Development of a directory food supplement as Radioprotection for Radiation workers	R. Balaji Raja Dept. of Biotechnology	DST	May 2010	85.10
16.	Wide Area Measurement and Energy Efficient hybrid Energy systems	Dr. S.S. Daash, Dept of Electrical and Electronics Engineering	DSR-FIST	May 2010	325.00
17.	Augumentation of teaching and Research facilities of existing structural Engineering laboratory for students on a seismic behavior of infilled frames by structural control	Dr. R. Annadurai School of Civil Engineering	DST-FIST	May 2010	133.0
18.	AB-INITIO Study of Electron Transport through single	Dr. D. John Thiruvadigal, Prof. & head	DST	April 2010	54.12

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in lakhs)
	Molecular Nano Electronics devices	Department of Physics			
19.	Wavelet Based Signal processing of vibration signals for fault diagnosis of Mono-block centrifugal pump.	V. Muralidharan Dept. of Mechatronics Engineering	DST Fast Tack Scheme for Yong Scientists	April 2010	15.08
20.	Biochemical study on the role of relaxation therapies in Reducing Academic Stress and in the management of Hypertension	Dr. D. Haripriya Dept. of Medical Research	Central council for Research in Yoga and naturopathy (CCRYN)	April 2010	18.9
21.	Tribology of Hard coatings on Steel	R. Mohandoss Mechanical Engineering	Ministry of Steel Government of India	Jan 2010	12.17
22.	Environmental flow considerations for the Pichavaram Mangrove Ecosystem, Tamilnadu,India	Dr. V.T. Deeptha Mr.R.Sathyanathan SRM University Dr. M.V. Ramana Murthy National Institute of Ocean Technology Dr. V. Selvan M.S.Swaminathan Research Foundation	Ministry of Earth Sciences	Jan. 2010	71.97
23.	Centre of excellence in energy and Environment advanced training and Research in bioenergy Biorefinery and bioremediation	Dr. K. Ramasamy School of Bioengineering	Ministry of HRD	Nov. 2009	1047
24.	Operational Research project on popularization Of Herbel based Mosquito repellent productst for rural and urban areas of Tamil Nadu	P. Geetha Dr.P.T. Palanisamy Dr.K. Ramasamy School of Bioengineering	Tamilnadu State Council for Science and Technology	Nov. 2009	33.42
25.	Development and Implementation of MEMS Seismic Detictor	Dr. A. Vimala Juliet Dept. of ICE	Tamilnadu State Council for Science and Technology	Nov. 2009	3.20
26.	State of Art Technology to solve energy crisis using hybrid generation	Mrs. Y. Jeyashres Dept. of ICE	Tamilnadu State Council for Science and Technology	Oct 2009	2.90
27.	Extra Cellular Biosymthesis and in-vitro bio toxicity studies for silver Nan particles	Mr. Saravanan Dept. of Biotechnology, FSH	Tamilnadu State Council for Science and Technology	Oct. 2009	2.975
28.	Awareness, Access, usage of ICT tools to High school Education to enhance creativity in Science Education	Mrs. Padma Shankar Dept. of ommerce Dr. R. Jeyalakshmi Dept. of Chemistry Mrs. H. Srimathi	Tamilnadu State Council for Science And Technology	Oct. 2009	3.00

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in lakhs)
		Dept. of MCA			
29.	Biochemical study on the role of Relaxation therapy in reducing Academic stress and management of hypertension	Dr. D. Haripriya Dept. of Medical Research Dr. Vinod Kochupillai Medical Director Dr. S. Elangovan Dept.of Cardiology	Central Council for Research in Yoga and Naturopathy	Oct. 2009	17.13
30.	Activating Transcription Factor-3: A potential target Gene for Bresat Cancer progression in Vivo	Dr. N.Selvamurugan Dr. S. Thyagarajan Biotechnology	ICMR	Sept 2009	29.75
31.	Wind and turbulence data measurement at SRM University Campus & Analysis	Dr. Deeptha Thattai Mr.J.S.Sundarasan Civil Engg.	BRNS	Sept 2009	4.34
32.	Satellite NDVI image analysis and its Sensitivity to the agroclimatic indices	Dr. T.V. Lakshmi Kumar Dept of Physics	SERC-DST Fast Track scheme For young scientists	Sept 2009	18.86
33.	Peptide mediated cancer targeting and Sustained release of drug by a systematic application of chitosan in cancer model system in vivo	Dr. N. Selvamurugan School of Bioengineering Dr. N. Srinivasan, Uni. Of Madras Dr. P. Gantam, Anna University Dr. M. Prabakaran, Dept. Chemistry,	ICMR	Aug. 2009	29.49
34.	Optimisation and scale up of ectoine production from Halophilic microbes	Dr. S. Narendar Sivvaswamy Advisor-Biotechnology Shri Meera Labs Pvt. Td Dr. L. Anbu rajan, Key Investigators Dr. C.P. Anitha Devi, School of Biosciences , Ramapuram	DBT	June 2009	85.00
35.	Functional characterization of glycine Betaine Biosynthesis genes from Marine cyanobacteria, synechococcus And its validation in plants	Dr. L. Anbu Rajan School of Biosciences Ramapuram Campus	DBT	June 2009	14.14
36.	Remote sensing and GIS enabled model For impact assessment of soil conservation And rain water harvesting on waste land Development	Dr. M. Nagaraj Civil Engineering	DST	June 2009	21.75

Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in lakhs)
37.	Studies on Enhancement of Triketone (Leptosphermon) in cell Suspension culture of Callistemon citrinus	Dr. R.S. David Paul Raj Department of Bioprocess Engineering	DST	June 2009	19.50
38.	Interaction integrins and ERB family of Receptors in resistance to Tamoxifen and Tyrosine Kinase inhibitors and in Metastasis in Breast Cancer Cells	Dr. Janet Jeyapaul Lecturer Dept. of Biotechnology	DST	June 2009	23.00
39.	Development of Radio protectan in protecting Humans against low doses of ionizing radiation	Dr. Kantha D. Arunachalam Mr. Balaji Raja Biotechnology Dr. Mary. N. Mohankumar IGCAR, Kalpakkam	IGCAR	May 2009	22.08
40.	DST-FIST	Dr. Vinod Kochupillai Director (M&HS)	DST	May 2009	309.25
41.	Design and Fabrication of continuous Type ohmic heating system for sterilization of tropical fruit juice	K.A. Athmaselvi Dept. of Food Process Engineering	SERC-DST	May 2009	18.08
42.	Heterolaminated Assembly of semiconducting Nano particles for solar cells	Dr. B. Vigneshwari Nano science and Nanotechnology	SERC-DST	April 2009	28.84
43.	Assessment of Risk factors, Lifestyles And Behavioral Determinants of Cardiovascular Diseases (CVDs) in Tamilnadu	Prof. Ch. Satish Kumar School of Public Health,		April 2009	131.71
44.	Expression of Interest for External conducting global adult Tobacco Survey (GATS-India), 2008	Prof. Ch. Satish Kumar School of Public Health	Ministry of HRD	April 2009	25.05
45.	Measurement of Bone Mineral density, Bone Geometry, and Bone Architecture in the Diagnosis of Osteoporosis in Aged population and post-menopausal women	Dr.M.Anburajan Dr.Megha singh Dr.K.Ramasamy Dr.S.V.Kasmir Raja Dr.K.Srinivasamuddi	Ministry of HRD	April 2009	437.14
46.	Nutrient recovery from Human Urine for reuse in agriculture towards sustainable sanitation	Prof. Abdual A. Rahman Prof. R. Jeyalakshmi R. Senthil Kumar	Rajiv Gandhi National Drinking Water Mission	April 2009	10.54
47.	Studies on evaluating the browning mechanism and its control on Tamarind (Tamarindus Indica)	Ms. Manimehalai School of Bioengineering	SERC-DST Fast Tack Scheme for Yong Scientists	March 2009	15.19

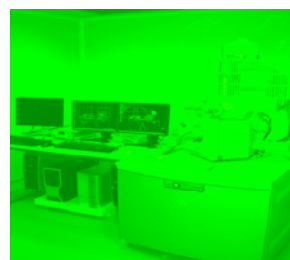
Sl. No	Title of the Project	Names of the Investigators	Funding Agency	Month & Year	Total outlay (in lakhs)
	Fruit Pulp		scientists		
48.	Nano Surface generation of grinding Process with Electronics In- process Dressing Techniques (ELID) Using eartion Nanotubes	Mr.S. Prabhu, Mechanical Engg.	SERC-DST Fast Tack Scheme for Yong Scientists	Feb. 2009	13.82
49.	Neuroimmunology of Psychosocial stress in Mammary Cancer	Dr. S. Thyagarajan Biotechnology	ICMR	Feb. 2009	29.39
Total					4026.84

4 RESEARCH FACILITIES

Good research facilities are created in all the Departments of the University through the funded projects sanctioned by various funding agencies and also through the funds generously provided by the University from its own resources. The facilities available for research in the University are listed below.

4.1 Nanotechnology Research Center

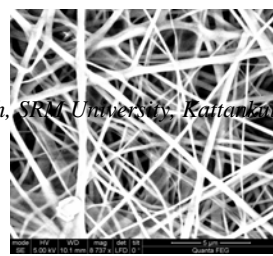
The Nanotechnology Research Center has been established at SRM University in the year 2005 with a mission to undertake front line research in the fields of Nanoscience and Nanotechnology as a part of University's initiative in Advanced Research.



The focused areas of research are:

- i. Fabrication and application of Magnetic Thin Films and Heterostructures to develop high density magnetic storage devices and other Nanostructured Materials for a wide variety of applications.
- ii. Synthesis of site specific drugs for various ailments along with a effective drug delivery system based on Nanotechnology for effective delivery. Controlled drug release based on polymer micro-nano beads are also focus of the team's research.
- iii. SPM study (Imaging, force-plot, I-V plot) of different biological and chemical systems,
- iv. The nanotoxicology of a well-defined and characterized sample (eg. Au nanoparticles capped with bio-molecules, ZnO/TiO₂ nanoparticles, etc.)
- v. Synthesis and characterization of novel nanoparticles.

The following equipments have been procured for the above research initiatives.



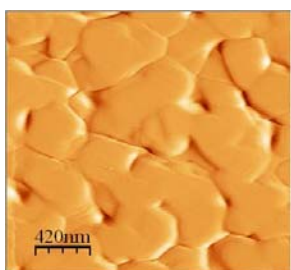
1. Scanning Probe Microscope from Agilent Technologies (AFM, STM, CSAFM, Tapping mode, MFM)
2. Physical Vapor Deposition System with four source e-beam evaporator pumped by a Varian 550 l/s Turbo-molecular pump.
3. RF powered Plasma Enhanced Chemical Vapor Deposition
4. Spin Coater
5. Langmuir Blodgett Thin Film Deposition System
6. Wet Chemical laboratory equipped with fume hoods, homogenizer, incubators, rotary evaporator, etc.
7. Panalytical's XRD with GIXRD and SAXS modes.
8. Shimadzu's Gas Chromatography Mass Spectrometry with Direct Injection.
9. FEI's Field Emission Scanning Electron Microscope with EDS, EBL, STEM and Nanomanipulators.
10. Technico, Furnace with SiC heating rod. Working temperatures reach upto 1350°C.
11. Electro- spinning unit (physics equipments.co) – under procurement.



4.2 Interdisciplinary School for System of Indian Medicines

The Interdisciplinary School of Indian System of Medicine (ISISM) was established in the year 2010. This school has been established to promote research in the field of Ayurveda, Siddha, Unani system of Medicine.

The major objective of this school is to establish facilities for conducting clinical trials for Ayurveda, siddha and Unani medicine and also to develop a plant based poly herbal formulation for the prevention and management of Type-2 Diabetes mellitus and associated vascular complications, allergic disorders etc. DST has funded huge amount of money to establish this facilities. With this infrastructure school is planning to offer courses in Ayurveda, siddha and Unani.



The school is going to be housed in an independent building near to SRM Medical College an area of one acre land. It is equipped with sophisticated equipments and instruments to achieve the missions of the school in the area

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of research. The School has large Research laboratory, and computer facilities with LAN and internet facilities. School has library facility in the ground floor access to the main library that subscribes to various books, journals, and periodicals in the field of ayurveda and Siddha to fulfill the necessities of the, research scholars and faculty member.

Equipments proposed

1. ECG Machine
2. Ultrasound
3. ECG Monitor (Multichannel) Model ELI-250
4. BPL Portable Parameter with Colour TFT Doppler Monitor
5. Automatic Hematological Analyzer
6. Fully Automated Clinical Chemistry Analyzer
7. Deep Freezer (-86°C)
8. Digital ELISA Reader
9. Refrigerated Centrifuge
10. Brain Map
11. Polysomnography
12. EEG
13. CG300
14. EMG with NCV
15. Memory and Attention Span Apparatus
16. Transcranial Doppler System
17. Inverted Microscope
18. Cryostat
19. Confocal Microscope
20. Dual Energy X-ray Absorptiometry (DEXA)
21. UV Spectrophotometer
22. Fourier Transform Infrared (FTIR) Spectroscopy
23. High Performance Liquid Chromatography (HPLC)
24. High Performance Thin Liquid Chromatography (HPTLC)
25. Flash Evaporator
26. Fluorescence Microscope
27. Atomic Absorption Spectroscopy
28. Real Time PCR
29. PCR
30. High-speed Centrifuge
31. Gel documentation System
32. Electrophoresis and Power packs
33. Digital ELISA Reader

4.3 School of Bio engineering

School of Bioengineering is a prestigious School of SRM University. The School was started in the year 2003. It consists of 6 departments: Biotechnology, Genetic



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Engineering, Food Process Engineering, Bioinformatics, Bioprocess Engineering and Biomedical Engineering. All the Departments offer undergraduate (B.Tech) and postgraduate (M.Tech) and PhD programmes in their areas of specialization. It is equipped with sophisticated equipments and instruments to achieve the missions of the departments in research and teaching.

This School has attracted funding from private organization such as DBT, DST, AYUSH, ICMR and private organizations like Noni Research Foundation. The School also has established research facility through funding from FIST program of DST. A transgenic green house, animal house has also been set up with University funding. A radiation lab has been set up but waiting for approval from AERB for commissioning.

The facilities available for research in the School are:

1. LC-MS
2. Spray drier and lyophilizer
3. Transgenic Green House
4. Animal House
5. Fermentors
6. Gel documentation system
7. PCR and thermal cyclers
8. Refrigerated centrifuges
9. ABIOS Gene Sequencer
10. Phosphor imager
11. Beckman Liquid scintillator
12. CO₂ incubators
13. Phase contrast microscope
14. Ultrasonic cell disintegrators
15. UV-Visible spectrophotometers
16. AKTA Prime
17. capillary Automated DNA Sequencing Machine from Applied Biosystems
18. Phosphorimager from GE Healthcare
19. PCR machines from Applied Biosystems and Eppendorf
20. Scintillation Counter from Perkin Elmer
21. Gene Pulser from Bio-Rad
22. Gel Documentation System
23. Hybridization Oven and UV Cross Linker from UVP
24. Blood Bank Cabinet and Plant Growth Chamber from Sanyo
25. Ice machine, -70C and -20C freezers
26. 2D Protein Electrophoresis System
27. Refractor meter han
28. Ultrasonic Cleaner
29. Indlab tray drier
30. Bucker elevator
31. Inclined belt separator

32. Fluidized bed drier
33. Rotary vacuum flask evaporator
34. Terminal velocity apparatus
35. Screw conveyor
36. Tearing strength tester
37. Thermo couple sensor
38. Bursting strength tester
39. Super critical fluid extractor
40. ECG/ EMG/EEG Amplifier
41. Nystagmograph (ENG) amplifier
42. ECG/ EEG simulator
43. Arrhythmia Simulator and Audiometer
44. The Bio-signal Processing Lab is equipped with sensor for blood flow pulse, respiration
45. PCG Bio-Transducer Kit
46. Signal Conditioner-BM and Biotelemetry module
47. Virtual Instrumentation-ELVIS-Bundle
48. Data acquisition card (DAC) and Smart Camera-Digital(with Accessories)

4.4 Center for Environmental Nuclear Research (CENR)



The centre was started in 2009 with a grant from the Atomic Energy Regulated Board (AERB), Bhabha Atomic Research Centre (BARC), Mumbai with the extensive support from Directorate of Research, SRM University. Dr. Kantha D. Arunachalam, Ph.D., M. A. Sc., (Canada) is heading the Centre consisting of Plant tissue culture lab, Radiation Safety Laboratory, Instrumentation Laboratory, Taxonomy & Zoology Laboratory, Hydroponics & Pot Culture Laboratory, Soil and Water Chemistry Laboratory, Toxicology & Molecular Biology Laboratory, Microbiology & Biochemistry Laboratory, Clean Room, Wet Lab.

Presently the research activities are focussed on Environmental Nuclear research in collaboration with Institutes and R&D centers like BARC – Mumbai, IGCAR – Kalpakkam. The department is engaged in collaborative projects with various schools like School of Civil Engineering and Center for Excellence in Nanotechnology and Directorate of Medical Research, SRM University. The center has interaction with King Institute – Guindy, and industries Like Hatsun Agro Products Ltd- Chennai and Medox Biotech Pvt Ltd- Chennai.

1. Alpha Counting System
2. Bench top Refrigerated Cooling Centrifuge
3. Deep Freezer (-20° C) (110 lts and 300lits)
4. Gamma Spectrophotometer with PC and Printer
5. Global Positioning System (GPS)
6. Muffle Furnace



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7. UV / VIS Spectrophotometer with PC and Printer
8. Orbital shaker
9. Orbital water bath shaker

4.5 College of Pharmacy

The main goal of College of Pharmacy is to mould outstanding pharmacy professionals using advanced teaching techniques and learning aids and top-notch facilities. An energetic team of faculty members makes up a rather large department comprising of experts in many fields, like NDDS, HPLC, anti-cancer, anti-diabetic and medicinal chemistry.



The college of pharmacy has signed a MOU with The Center for Chemometrics, University of Bristol, U.K. This facilitates research in the area of chemometrics. To facilitate the research in new drug discovery and development, it has signed a MOU with CEERI, Chennai. The MOU allows for a joint collaboration in the research activities

Facilities available

1. FT-IR spectrometer
2. HPLC
3. HPTLC
4. UV-VIS spectrophotometer
5. USP –Dissolution test Apparatus
6. Brookfield Viscometer
7. Probe sonicator
8. Humidity Chamber
9. LAF unit
10. PCR Machine
11. ELISA Reader and Plate washer
12. Digital Polygraph
13. Student's physiograph
14. Semi auto-analyzer

4.6 Medical Research

The Medical Research department of SRM Medical College is relatively young within a short time of four years; it is coordinating the Ph.D work of 81 scholars under the guidance of 27 approved guides. It is headed by the Dean of Medical Research. Four full time Assistant professors in basic sciences form the core team. All are Ph.D qualified scientists with post doctoral fellowships. Several internal scholars are awarded suitable stipends and monitor grants to proceed and in addition DST/ ICMR funded projects are under way. The research work is periodically reviewed by a research committee.

The Institutional Ethics committee and the Animal Ethics committee conform to the ICMR and government guidelines. Keeping with the global trends, inter department and inter faculty research is encouraged. Several eminent scientists from other scientific institutions help this research work in the capacity of external coordinators in specific field. The policy is to identify clinical issues and study them. Basic science research support is given by clinicians. Application research with immediate benefits to the community is given special priority.

Attracted by the facilities available in Medical research more and more candidates are registering for Ph.D. programme. A M.Phil research program in clinical psychology has been started in the Medical college. Apart from the regular Ph.D program, major studies in this department at present pertain to industrial noise induced hearing loss, Neonatal hearing impairment, bladder malignancy, immune markers in psoriasis, off label use of Albendazole, genetic profiling of hearing impaired.

The facilities available

1. Light Microscope
2. ELISA Reader
3. PCR Thermocycler
4. Spectrophotometer
5. Ham photometer
6. Colorimeter
7. Distillation Unit
8. Digital PH Meter
9. Tissue Homogenizer
10. Microtome
11. Polysomnography
12. Student Physiographic
13. Automated electrophoresis
14. Agarose gel electrophoresis unit
15. Semi Auto Analyzer
16. Auto Analyzer
17. Animal laboratory
18. Cell Counter (3 and 5 pack)
19. Deep Freezer
20. BACT-ALERT3D

4.7 Chemical Engineering

From large scale refineries to artificial organs for the human body. From developing new energy sources to synthesizing revolutionary new materials. The possibilities boggle the mind. But that is the scope of chemical engineering. With the current emphasis on computer-supported problem solving and modern laboratory technology, the field becomes all the more exciting. The



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department has taken up socially relevant pilot research projects in the field of alternate fuels, Bio remediation and the environment.

Facilities

1. UV-Visible Spectro Photo Meter
2. Nephelo Meter
3. Electronic balance
4. Atomic Absorption Spectroscopy
5. PH Meter
6. Conductivity Meter
7. Flame photo Meter

4.8 Civil Engineering

The Department of Civil Engineering pulls out all stops to create outstanding engineers - with advanced teaching techniques and learning aids for undergraduate students and state of the art research facilities for postgraduate students and doctoral candidates. The research work at the school includes such domains as innovative interface material, traffic-resistant pavement material, and shear strength of high-strength concrete, recycled aggregates, bio-concrete and basalt fiber concrete.

Facilities

1. Universal testing machine
2. Tri-axial shear tester
3. Loading frame with accessories
4. Ultrasonic concrete tester
5. Torsion testing machine
6. Vibration equipment and total station
7. Software packages like GTSTRUDL, STAADPRO, AUTOCAD, PRIMAVERA. The remote sensing and GIS laboratory is equipped with high end software
8. Accessories like ArcGIS9.1, MAPInfo, ENVI Image processing software, Mirror Stereoscope with stereo pair, 5 satellite data - LISS III, LISS III (PAN + Merged), OCM SPOT

4.9 School of Electronics and Communication Engineering

Electronics and Communication Engineering (ECE) is a swiftly advancing field, with new ideas emerging every other second. From mobile phones to fiber optics and remote sensing, there are exciting avenues to explore and create.

Interdisciplinary research, a system-level approach and close ties with industry combine to yield up-to-date research. The department has received large funds from AICTE for research in the area of biomedical instrumentation for the project 'Non-invasive optical imaging for tissue characterization'. The department received government funding for upgrading its fiber optic, DSP and VLSI laboratories. Strong ties with industry complement these top-notch research opportunities. Through research center industrial liaison programs and departmental advisory boards, faculty and students can work towards future technologies

1. TMS320c50, TMS320c33 DSP Kits
2. TMS 320c 5416 DSP Kit with C Compiler
3. Microwave Bench X – Band, J-Band
4. Plastic Fiber Analog Link
5. Antenna Trainer (complete setup)
6. RF circuit Design Trainer
7. Spectrum Analyser and Storage Oscilloscope

4.10 Electrical and Electronics Engineering

Electrical and Electronics Engineering is a continuously evolving subject. As technology has advanced, so have the challenges facing the modern engineer. A silicon chip containing over 100 million transistors in an area no larger than a postage stamp is yesterday's news.

The research division covers various aspects of electrical engineering. There is an active and growing area of research in the field of power electronics & drives, power apparatus and systems, whilst collaborating with each other and a variety of industrial partners. The research group focuses on power electronic devices and integrated circuits, and their uses in various applications. Other major research strands include FACTS and their integration in power systems, integrated design of electrical machines and drives and electromagnetic modeling.

4.11 School of Mechanical Engineering

The Department of Mechanical Engineering is one among the three departments, which was established in the year 1985-'86. The Department is made as a constituent School after the establishment of SRM University in the year 2003. It consists of five departments: Aerospace Engineering, Automobile Engineering, Mechatronics, Mechanical Engineering and Nuclear Engineering. All the



Departments offer undergraduate (B.Tech) programmes. The School offers postgraduate (M.Tech) programs in Computer Aided Design (CAD), Computer Integrated Manufacturing (CIM), Robotics and Energy Engineering. It is well equipped with sophisticated equipments and instruments to achieve the missions of the departments in research and teaching. At present, thirty research scholars are doing their Ph.D. work in the Department.

The major research areas are: Bio-cad, Alternate Fuels-Vegetable oils, Super Finishing Process, Solar thermal energy, Assembly planning, Optimization/analysis of mechanical systems.

Facilities

1. Flexible Manufacturing System

2. Coordinate Measuring Machine (CMM)
3. Rapid Prototyping machine
4. Computerized Diesel Engine test setup with eddy current Dynamometer
5. Computerized variable compression ratio diesel engine test rig
6. Multi cylinder petrol engine test rig- MPFI type with Eddy current Dynamometer
7. Wind tunnels
8. Two wheeler dynamometer
9. Chassis dynamometer
10. CNC Machines – Lathe, Milling Machine, Wire-cut EDM\
11. Floating Carriage Micrometer
12. Surface Roughness Tester
13. Auto Collimator
14. Exhaust gas analysers
15. Vibration analyzer
16. ABB IRB1410 Robot
17. Heat transfer test rigs
18. Wear and Friction Monitor
19. Inverted Metallurgical Microscope with CCD camera and image analyzer software

Software:

CATIA V5, Solid works, Ansys, Unigraphics, Femap , Pro-E wildfire, Hyper Works, LS-Dyna – Dynaform, CADAM, Time Surf, SolidCAM , Robot Studio V5.8 and FluidSIM – Hydraulics & Pneumatics.

4.12 Physics

Acceleration has gripped the world of physics in the international arena and research studies in this field have broken more barriers than just sound. Physics is linked with the future progress of humankind and the next generation of SRM students are prepared to be a part of it. Dedicated, experienced and well qualified faculty members make up the department. They continually update their grasp on global trends and breakthroughs by attending and presenting papers in national and international conferences. Research papers have been published in reputed international and national referred journals. The areas of research interest of the faculty members include: Nano Technology, Crystal Engineering, Molecular Spectroscopy Nonlinear Optics, Ceramic Technology



Facilities

Well equipped laboratories with modern instruments and hi-tech facilities mark the Department of Physics. The advanced functions of the laboratory include:

1. Preparation and characterization of nano-ceramics
2. Low temperature solution growth technique for growing organic and inorganic crystals
3. Compressibility/ susceptibility measurements for solids and liquids
4. Electronic parameter measurements for semiconductors
5. Propagation parameter measurements for optical fibers
6. Holography

4.13 Chemistry

SRM University's Chemistry Department has been engaged in opening up the fascinating world of Chemistry to students since 1985. The department comprises of a goal oriented group of highly qualified, experienced and dynamic faculty members, who engage students in M.Sc. and Ph.D. courses. The department has tie-ups with recognized institutions, industries and R&D laboratories for student projects, training and research activities.

Facilities

1. UV Visible Spectrophotometer
2. Thermolyne furnace
3. Gas Chromatography
4. Bomb Colorimeter
5. Flame Photometer
6. High temperature programmable-furnace and High pressure reactor

4.14 Mathematics

The charm of numerals and equations holds the limelight here at SRM's Mathematics Department. Considering how mathematics plays a critical role in various fields from vehicle design to architecture, the faculty encourages research in both fundamental and applied mathematics. The key areas of research interest include: Fluid Mechanics, Fuzzy Set Theory, Analysis, Graph Theory.

4.15 Nano Satellite Center

In collaboration with ISRO, a Nano Satellite Program has been initiated at SRM University. Faculty members and students from the Departments of ECE, TCE, CSE, IT, ICE, EEE & Mech. Engg are participating in this project. A series of interaction meetings were held with the Scientists and Engineers of ISRO.



“Monitoring of toxic gases in the atmosphere” is the scientific objective for SRM Nano Satellite. The proposal has been prepared

by the faculty members and the students. It was presented to a committee of experts of ISRO. After incorporating the suggestions given by the experts, the final proposal was prepared and submitted to ISRO on 5th September 2009.

An MoU for the above satellite project was signed between ISRO & SRM University on 30th September 2009. The faculty members and students are actively involved in designing and developing the Nano Satellite. The Satellite development is in a very advanced state and will be handed over to ISRO for launching.

SRM Nano Satellite is planned to be launched from SHAR Centre, Sriharikota in March-April 2011.

Facilities

1. Argus IR Spectrometer
2. Tektronics Oscilloscope-2GHz
3. Transciever
4. Yagi antenna for VHF & UHF
5. Aplab 12V power supply
6. GPS receiver
7. Magnetometer
8. Clean room

5 PATENTS FILED

1. “Novel method for producing Metal Nanodots”, Patent filed in India(2828/CHE/2009), Shivaraman Ramaswamy, Gopalakrishnan.
2. “Casino Phospho Peptides –“A novel production method of CPP (Casein Phospho Peptides)” filed with DePenning & DePenning, (1304/CHE/2010).” Dr. Kantha Arunachalam & R.Balaji Raja.
3. “A novel herbal formulation advocated for the prevention and management of Coronary Heart Disease” filed with L.S.Davar & Co, (2270/CHE/2010), Registrar, Interdisciplinary School of Indian System of Medicine.
4. “Role of an herbal formulation in the prevention and management of age related neurodegenerative disorders with special reference to Senile Dementia” filed with L.S.Davar & Co, (2271/CHE/2010), Registrar, Interdisciplinary School of Indian System of Medicine.
5. “Prevention and management of Type 2 diabetes mellitus and associated vascular complications by a poly herbal formulation” filed with L.S.Davar & Co, (1708/CHE/2010), Registrar, SRM University.