

REPORT FOR UTILIZATION OF DST- PURSE GRANT

Sanction Letter No.: SR/S9/Z-23/2010/43, dated 16-03-2011
(Period: April 1, 2012 to March 31, 2013)



Sardar Patel University
Vallabh Vidyanagar- 388 120
Gujarat, INDIA

Report for Utilization of DST-PURSE Grant

F. Y. 2012-13 (1st April 2012 to 31st March 2013)

1. Name of University:

Sardar Patel University,
Vallabh Vidyanagar – 388120,
Gujarat

2. Address for communication

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Nodal Officer, PURSE Programme of DST
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3. Date and Ref. No. of DST Sanction Letter: SR/S9/Z-23/2010/43 dated 16th March 2011

4. Total Amount Released under the program

Sanctioned: Rs. 600.0 lakhs
Released: Rs. 200.0 lakhs

5. Expenditure during the period 1st April 2012 to 31st March 2013: Rs. 1, 98, 60,146.00
Total expenditure consolidated upto 31st March 2013: 2,16,74,886.00

6. Details of the Grant

Sr No.	(A) Flexible Component	Amount (Rs in lakhs) Received with Date	
1.	Equipment	130.0	
2.	Consumables	15.0	
3.	Research Infrastructure Facility	15.0	
4.	Network & Computational Facility	10.0	
	Total (A)	170.0	
Sr No.	(B) Fixed Component		
1.	Manpower	20.0	
2.	Contingencies	2.0	
3.	Travel	2.0	
4.	Seminar/Workshop	2.0	
5.	Maintenance	4.0	
	Total (B)	30.0	
	Total (A+B)	200.0	31/03/2011

7. Details of Utilization of PURSE Grant under the 'Flexible Component':**7a. Sanctioned Major Equipment Ordered/ Purchased/Installed:**

Sr. No.	Name (with Model & Make)	Order Date	Installation Date	Cost in INR (Total Cost of the Equipment after paying all the charges)
	Purchased/Installed			
1.	Ultra Fast Triple Quadropole Liquid Chromatography and Mass Spectrometer Model: LCMS 8030 With Nexera UHPLC Make: Shimadzu, Japan	25/06/2012	10/11/2012	77,62,734.00
2.	CCD Single Crystal Diffractometer Model :Kappa Apex II Sr. No. 4027	07/02/2008	05/07/2009	8,55,979.00 (Escalation Cost) Adjustment
3.	Spectrofluorophotometer Model: RF-5301PC Make: Shimadzu, Japan	30/06/2012	12/04/2013	7,50,000.00
4.	Inverted Fluorescent Phase Contrast Research Microscope Make: Carl-Zeiss, Germany	06/10/2012	18/04/2013	19,59,760.00
5.	Research Rotatory and Oscillatory Rheometer Model: MCR 102 Modular Compact Make: Anton Paar, Graz. Austria	29/11/2012	25/05/2013	16,65,808.00
6.	Millipore Water Purification System, Model: Prefiltration Kit + Elix-3+ 50L Storage Reservoir + Synergy Pure System Make: Merck Millipore, India Pvt. Ltd.	02/11/2012	29/01/2013	6,33,579.00
Total Rs.				1,36,27,860.00

7 b. Particulars for Consumables procured (Chemicals, Supplies etc.)

Sr. No.	Department	Expenditure (INR)
1	Chemistry	3,22,777.00
2	Physics	2,16,449.00
3	Materials Science	3,66,327.00
4	Pharmaceutical Science	-
5	Biosciences	2,57,356.00
6	Electronics	3,08,100.00
	Total Rs.	14,71,009.00

Please see below for Complete Details:

Details:

Sr. No.	Name of the Chemical	Quantity	Make/Grade
1.	Selenium Dioxide	1*100gm	SRL
2.	3,4- Dimethoxy Acetophenone	2*50gm	Merck
3.	Sodium azide	1*100gm	Merck
4.	Triallyl Cynurate (2,4,6-triallyloty 1, 3, 5)	1*500gm	"Sigma Make" Chemicals
5.	Polypropylene stycol	1*500gm	"Sigma Make" Chemicals
6.	Polypropylene glycol	1*500gm	"Sigma Make" Chemicals
7.	4,4 Dinonyl-2-2' dipyridyl	2*5gm	"Sigma Make" Chemicals
8.	Cyanuric Chloride	1*250gm	"Sigma Make" Chemicals
9.	Malononitrile	1*100gm	"Sigma Make" Chemicals
10.	P-Toluenesulfonyl-methyl isocyanide	1*25gm	"Sigma Make" Chemicals
11.	3, 4- Diaminotoluene 97%	1*100gm	"Sigma Make" Chemicals
12.	2-Acylamido-2-methyl-1-propane sulfonic	1*250gm	"Sigma Make" Chemicals
13.	Docusate sodium	1*100gm	"Sigma Make" Chemicals
14.	4-Vinylpyridine	2*500gm	"Sigma Make" Chemicals
15.	Stammous 2-ehtylhexanate	4*250gm	"Sigma Make" Chemicals
16.	Potassium-tetra-chloroplatinate (II)	2*1gm	Sd's
17.	Titanium (III) oxide	1*50gm	"Sigma-Aldrich" Acesor
18.	Sodium trifloro-methane sulfonate	2*25gm	"Sigma-Aldrich" Acesor
19.	Sodium tetrafluoro borate	2*500gm	"Sigma-Aldrich" Acesor

20.	Bistrifluoro methane sulfonimide lithium	1*50gm	"Sigma-Aldrich" Acesor
21.	Poly(ethylene-glycol) B-poly pyrrolen	1*250ml	"Sigma-Aldrich" Acesor
22.	Poly(ethylene-glycol) B-poly pyrrolen	1*1ltr	"Sigma-Aldrich" Acesor
23.	Epirubian Hydrochloride	1*5mg	"Sigma-Aldrich" Acesor
24.	Polyvinyl pyrrolidone Av.	1*1kg	"Sigma-Aldrich" Acesor
25.	Poly (N-Iso propylaemide)	1*10gm	"Sigma-Aldrich" Acesor
26.	Osmium tetroxide	2*1gm	Sd's
27.	Iridium trichloride	2*1gm	Sd's
28.	Thiophenol	1*250ml	Merck
29.	Dicyclopertadiene	1*2.5ltr	Merck
30.	Maleic anhydride	1*1kg	Merck
31.	Styrene	1*2.5ltr	Merck
32.	Methyl methacrylate	1*1tr	Merck
33.	1-Vinyl-2-pyrrolidone	1*250ml	Merck
34.	Dially phthate	1*500ml	Merck
35.	Methanol	100*2.5ltr	Merck
36.	Ortho phosphoric acid GR	13*500ml	Merck
37.	Copper Powder 100 Mesh 99.99%	2*100gm	"Alfa Aesar make" Chemicals
38.	Tin (II) Chloride Puratronic 99.995%	2*100gm	"Alfa Aesar make" Chemicals
39.	Tin Powder 99.999% Metal Basis	2*50gm	"Alfa Aesar make" Chemicals
40.	Beakers Low Form Durasil	50*250ml	"Durasil"Glassware
41.	Beakers Low Form Durasil	50*100ml	"Durasil"Glassware
42.	Beakers Low Form Durasil	25*500ml	"Durasil"Glassware
43.	Funnels Plain Long Stem Durasil	30*75mm	"Durasil"Glassware
44.	Separating Funnels Teflon Glass Body	3*250ml	"Durasil"Glassware
45.	Glass Rod Button Shape Flat End	200* (8x300mm)	"Durasil"Glassware
46.	Chlorobenzene	10*500ml	Merck
47.	Formaldehyde	10*500ml	Merck
48.	Sodium Hexameta phosphate	3*500gm	Merck
49.	Iodine	3*100gm	Merck
50.	Silver Nitrate	2*25gm	Merck
51.	1,4- dioxane	10*500ml	Merck
52.	Methylene blue	5*125ml	Merck
53.	Pot. Hydroxide	7*500gm	Merck
54.	Hydrochloric Acid 0.1N	10*500ml	Merck
55.	Pot. Carbonate	5*500gm	Merck

56.	Sodium thiosulphate	2*500gm	Merck
57.	pH indicator paper	5 pkt	Merck
58.	Pot. Hydrogen difluoride	5*500gm	Merck
59.	Recrystallised Alumina 99.7% Purity Cylindrical Trays	20*100ml	"Alumina Lab Ware"
60.	Recrystallised Alumina 99.7% Purity Cylindrical Trays	30*250ml	"Alumina Lab Ware"
61.	Recrystallised Alumina 99.7% Purity Cylindrical Plates	10*(105x55x4)	"Alumina Lab Ware"
62.	Recrystallised Alumina 99.7% Purity Cylindrical Plates	10*(100x100x4)	"Alumina Lab Ware"
63.	Recrystallised Alumina 99.7% Purity Cylindrical Boats	40*(11x20x18)	"Alumina Lab Ware"
64.	Recrystallised Alumina 99.7% Purity Cylindrical Boats	40*(117x30x19)	"Alumina Lab Ware"
65.	Recrystallised Alumina 99.7% Purity Cylindrical Tubes	3*(72x57x1400)	"Alumina Lab Ware"
66.	Recrystallised Alumina 99.7% Purity Cylindrical Crucibles	40*(28x42)	"Alumina Lab Ware"
67.	Recrystallised Alumina 99.7% Purity Cylindrical Crucibles	40*(32x35)	"Alumina Lab Ware"
68.	Recrystallised Alumina 99.7% Purity Cylindrical Tubes	3*(72x57x1000)	"Alumina Lab Ware"
69.	Recrystallised Alumina 99.7% Purity Cylindrical Tubes	3*(51x40x1000)	"Alumina Lab Ware"
70.	Recrystallised Alumina 99.7% Purity Cylindrical Tubes: Beads	10*(5.5x2holex1000)	"Alumina Lab Ware"
71.	Recrystallised Alumina 99.7% Purity Cylindrical Tubes: Beads	10*(4.8x2holex1000)	"Alumina Lab Ware"
72.	Mineral Oil BT Grade	1*500ml	BIORAD
73.	Ready Strip Ph3-10 7cm	3 pack	BIORAD
74.	PVDF Membrane	2*(26cmx3.3M roll)	BIORAD
75.	Cystatin C	1*10UG	"Sigma Make" Chemicals
76.	Antioestrogen	2*100UG	"Sigma Make" Chemicals
77.	Tungsten 200A Boat for Thermal Evaporation	10	Local
78.	Molybdenum 200A Boat for Thermal Evaporation	06	Local
79.	Tellurium pieces 99.999% trace metal	1*100gm	Sigma
80.	Selenium Oxide particle size <5mm, 99.999% trace metal basis	2*10gm	Sigma
81.	Indium powder 99.999% trace metal basis	3*5gm	Sigma
82.	Glucose oxidase (GOD) from <i>Aspergillus niger</i> (10)	1*50KU	Sigma
83.	Creatininase from <i>Pseudomonas</i> sp. Lyophilized powder 100-300 Units/mg protein	2*1KU	Sigma

84.	Urease, Jack Bean source, Urease from canavalia ensiformis (jack bean) powder 50000-100000 units/g solid	1*20KU	Sigma
85.	Urease, Jack Bean source, Urease from canavalia ensiformis (jack bean) powder 15000-50000 units/g solid	1*100KU	Sigma
86.	SPI supplies brand carbon paste	2*10gm	Sigma
87.	SPI conductive silver paste plus	1*30gm	Sigma
88.	Gallium 99.999% trace metal basis	2*10gm	Sigma
89.	Indium pieces 99.99% trace metal basis	1*50gm	Sigma
90.	Selenium pellets particle size <5mm, 99.999% trace metal basis	2*20gm	Sigma
91.	Zinc Selenide powder, 10µm, 99.99% trace metal b.	1*50gm	Sigma
92.	Creatinase from Pseudomonas sp. Recombinant expressed in E. coli, lyophilized powder	1*500UN	Sigma
93.	Chlorpromazine Hydrochloride	1*100gm	Astron
94.	2-Naphthylamine	1*25gm	Astron
95.	Chloroplatiric acid (40% pt.)	3*1gm	Astron
96.	1-Naphthylamine	1*500gm	Astron

**7 c. Details of Research Infrastructure developed out of PURSE Support:
Central Experimental Facility: DST PURSE Programme**

Sr. No.	Received Items	Make	Cost (INR)
1.	Air Conditioner (2 Nos.)	Blue Star	78,500.00
2.	Refrigerator 230 Litre (2 Nos.)	Samsung	33,000.00
3.	Fax Machine (1 Nos.)	Panasonic	5,995.00
4.	Renovation work for New Central Facility	-	5,02,060.00
5.	Electrification Work for New Central Facility	-	2,61,773.00
6.	1. Key Board For Fifty Keys (1 Nos.) 2. Notice Board 3 x 4 Feet (12 Nos.) 3. Notice Board 4 x 8 Feet (2 Nos.) 4. Round File With Three Tiers Set (1 Nos.)	All Ark All Ark All Ark	98,750.00
7.	1. Power Podium (1 Nos.) 2. Multimedia Projector Model In 114 With 15 Mitre Cable Kit With Ceiling Mount Kit For Projector	Mega Infocus	59,050.00
8.	Interactive White Board With 82'' Diagonal (1 Nos.)	AT	49,900.00
9.	Monthly Planner Aluminium Board 3 x 2 (1 Nos.)	-	3,500.00
10.	Vacuum Cleaner	Eureka Forbes	6,300.00
11.	Semi Micro Balance	Merck	2,01,600.00
12.	Planner For Table	All Ark	1,950.00

13.	Revolving Chairs (12 Nos.)	Local Make	39,588.00
14.	Conference Table	Local Make	11,385.00
15.	Digital Copier machine	Canon	1,29,755.00
16.	Cilling Fan Hi speed	Crompton	26,750.00
17.	Re-electrification for New Central Facility	-	1,68,760.00
Total Rs.			16, 78, 616.00

**7d. Details of Networking & Computational Facilities created out of PURSE Support:
Central Experimental Facility: DST PURSE Programme**

Sr. No.	Details of the items procured for Computer Laboratory	Make	Date of Purchase	Total Cost (INR) (Total Cost of the item/ Equipment after paying all charges)
1.	Desktop (D4) Computer System (2 Nos.)	Acer	26/03/2012	72,500.00
2.	i. Scanner (PS12_5) (1 No.) ii. Laptop (N3) (1 No.)	HP	26/03/2012	79,500.00
3.	Computer Chairs (15 Nos.)	Local	01/11/2012	31,500.00
4.	Colour Printer LaserJet Pro MFP M175 (1 No.)	HP	09/11/2012	29,500.00
5.	Computer Tables (15 Nos.)	Local	02/11/2012	40,050.00
6.	Probook 4430s Note Book Computer (2 Nos.)	HP	06/11/2012	79,485.00
7.	Desktop Computer System: Optiplex 9010 AIO (1. No)	DELL	09/11/2012	53,667.00
8.	Desktop Computer Systems (4 Nos.)	HP	09/11/2012	1,33,770.00
9.	EPABX System (1 No.)	Matrix	09/11/2012	33,292.00
10.	i. Networking Cable UTP CAT6-N Others ii. Networking Services	Local	07/11/2012	84,026.00
11.	i. Networking Services & Others ii. Networking Services Mount Box iii. Networking Cable UTP CAT6-N DC535 & Others iv. Networking Services	Local	07/11/2012	13,597.00
12.	Desktop Computer System (1. No)	DELL	18/09/2012	45,637.00
Total Rs.			6, 96, 524.00	

8. Details of Utilization of PURSE Grant under 'Fixed Component'**8a. Particulars of Manpower Employed:**

Sr. No.	Designation (Number of Persons)	Monthly Emoluments (INR) per person
1.	Research Scientist-I (ONE)	37,500 .00
2.	Research Scientist II (ONE)	14,000.00
3.	Research Associate (THREE)	22,000.00
4.	Junior Research Fellow (ONE)	16,000.00
5.	Research Assistant (NINE)	10,000.00

8b. Details of Expenditure incurred under 'Travel':

Sr. No.	Particulars of Man trips	Total Cost (INR)
1.	Dr. U H Patel	15,846.00
2.	Prof. Dr. N V Sastry (Nodal Officer)	16,512.00
Total Rs.		32,358.00

8c. Any Seminar /Workshop Organized by the University during the period of Report, especially those involving the newly created facility under PURSE Initiative.

Sr. No.	Description of Seminar/ Workshop organized under PURSE program	Budget Allocated (INR)
1.	National Workshop on Molecular Modeling for Drug Design (MMDD-2012), 29 th November to 30 th November 2012 (By DST-PURSE Central Facility, Sardar Patel Univeristy)	1,22,189.00
2.	One Day Workshop on LC-MS –Fundamentals, Applications and Hands on Experience, 19 th February 2013	-

Conferences, Seminars and Workshop organized by Science Departments:

Sr. No.	Theme	Sponsors	Duration
1.	Analysis, Geometry and Applications, Department of Mathematics	UGC-SAP-DRS-II	7 th March to 8 th March 2013
2.	Workshop on An Art of Problem Solving in Mathematics-IV, Department of Mathematics	UGC-SAP-DRS	26 th December 2012 to 01 st January 2013

8d. Details of budget for Contingencies

Sr. No.	Description of Details (Item Wise)	Total Cost (INR)
1.	Hiring Services i. Clerk (One: on daily wages @ 180Rs. per day) ii. Peon (One: on daily wages @ 130Rs. per day)	79,520.00
2.	Stationary (including white ceramic boards)	49,631.00

3.	Photocopy Charges	712.00
4.	Postal Charges, Miscellaneous & Sundry Expenses	58,261.00
	Total Rs.	1,88,124.00

Please see below for the details of expenses made:

Details:

Sr. No.	Particulars	Quantity	Cost (INR)
Hiring Services (Administrative Office Charges)			
1.	Salary (07-04-2012 to 30-04-2012), Suresh A. Barot, Nilesh F. Rabari	02	5,320.00
2.	Salary (01-05-2012 to 31-05-2012), Suresh A. Barot, Nilesh F. Rabari	02	8,370.00
3.	Salary (01-06-2012 to 30-06-2012), Suresh A. Barot, Nilesh F. Rabari, Dinesh M. Harijan	03	11,440.00
4.	Salary (01-07-2012 to 31-07-2012), Suresh A. Barot, Nilesh F. Rabari	02	7,930.00
5.	Salary (01-08-2012 to 31-08-2012), Suresh A. Barot, Nilesh F. Rabari	02	7,310.00
6.	Salary (1-09-2012 to 30-09-2012), Suresh A. Barot, Nilesh F. Rabari	02	7,310.00
7.	Salary (1-10-2012 to 31-10-2012), Suresh A. Barot, Nilesh F. Rabari	02	6,870.00
8.	Salary (1-11-2012 to 30-11-2012), Suresh A. Barot, Nilesh F. Rabari	02	6,200.00
9.	Salary (1-12-2012 to 31-12-2012), Suresh A. Barot, Nilesh F. Rabari	02	8,370.00
10.	Salary (1-01-2013 to 31-01-2013), Suresh A. Barot, Nilesh F. Rabari	02	8,060.00
11.	Salary (1-02-2013 to 28-02-2013), Nilesh F. Rabari	01	2,340.00
Stationary (including white ceramic boards)			
8.	Color Push Pin Box, (Bansal Audio Visual Pvt. Ltd. Ahmedabad)	09	1,170.00
9.	Bilt Copy Power Xerox Paper, (Bansal Audio Visual Pvt. Ltd. Ahmedabad)	10Pkt	1,550.00
10.	Executive File Tray, (Tech Micro Solution Ahmedabad)	01	14,455.00
	Ceramic White Board Size 4x6 Feet, (Tech Micro Solution Ahmedabad)	01	
	Anak Modular Syatem Model AMDS 4L, (Tech Micro Solution Ahmedabad)	01	
	Versatile Pen Stand	01	
11.	Ceramic White Board Size 4x6 Feet, (Tech Micro Solution, Ahmedabad)	01	13,960.00
	Anak Modular Syatem Model AMDS 4L,	01	
	Executive File Tray	01	
12.	Stationery Items (Zeel Xerox & Stationery V V Nagar)	-	3,716.00

	Eraser	05	
	Cutter	03	
	Marker	20	
	Correction Pen	03	
	Binder Clips 30mm	01Pkt	
	Binder Clips 25mm	04	
	Tap Roll	01	
	Corner Path Spring File	05	
	Box File	04	
	DB Parear Med	01	
	H/B Registrar	03	
	Button Pouch	06	
	Cello Pen	01	
	Big Tap Roll	01	
	Small Tap Roll	01	
	Jetter Pen	03	
	HP 45 Steplar	02	
	HP 10 Steplaar	03	
	DP 500 Punch	01	
	Steplar Pin Box	01	
	Calculator	01	
	Apsara Pencil	03Pkt	
	Natraj Pencil	02Pkt	
	Metal Scale	03	
	Scissors Big Size	03	
	Scissors Medium	03	
	Fevistick	03	
	Stamp Pad	02	
	Two Side Tap	04	
	High Litter	05	
	Scatch Pen	02Set	
	Ball Pen	25	
13.	Dr. Kiran Surati Department of Chemistry (Stationery Item)		
	Kangaroo Steplar 23517	01	
	Pin Box	01	
	Ex Folder	01	
	F/S Garnet	05	
			2,220.00

	A/4 Garnet	04	
	11X5 Cart	07	
	Copy Power	03Pkt	
	24 Folder File	01	
	Rack for Stand	01	
14.	Stationery Items (Zeel Xerox & Statiopners)		
	F/S Copy Power	05Pkt	
	HP-45 Steplar	01	1,865.00
	Patti File	10	
	Patti Binder	17	
15.	Alton Notice Board With Door Cover Sadwitch 3x4 Feet (Tech Micro Solution Ahmedabad)	01	7,410.00
16.	Dr. Kiran Surati Department Of Chemistry (Stationery Items)		3,285.00
	Copy Power Paper	03Pkt	
	L- Folder	20	
	Garnet Cover 11x5	01Pkt	
	Garnet Cover A/4	01Pkt	
	A/4 Project File	10	
	Fevistick	05	
	Xerox Copy Book No.1.-600Copies, Book No.2. -700 Copies, Book No.3. 350-Copies	03	
	Circle Mouse Sr. No.26224	01	
	Sennheiser Earphone Sr. No.25191	01	
Photocopy Charges			
17.	Xerox Charges	2045	712.00
Postal Charges, Miscellaneous & Sundry Expenses			
18.	Sundry Bill, (Aligadh Lock And Gun Centre Anand)	04	
	Sundry Bill, Posting Charge (Anand Post Office)	01	
	Sundry Bill, Copier Paper A4 Size (Chandan Stationary Vidyanagar)	05 Pkt	
	Sundry Bill, Courier Service (Maruti Courier V. V. Nagar)	01	1,785.00
	Sundry Bill, Posting Charge (V. V. Nagar Post Office)	01	
	Sundry Bill, Lock (New Anand Lock Center V. V. Nagar)	03	
19.	Advertisement (Tender Notice)	2 to 5 Sq. cm.	5,040.00
20.	Sundry Bill (Rubber Stamps)	15	660.00
21.	Sundry Bill, Freight Charge paid for samples received from Industry	01	3,850.00
22.	8 GB Pendrive (Desktop Creators Anand)	01	1,289.00

	Rubber Stamp, (Gayatri Rubber Stamp V. V. Nagar)	-	
	Courier Charge, (Shree Maruti Courier V. V. Nagar)	01	
	Courier Charge, (Shree Maruti Courier V. V. Nagar)	01	
	Courier Charge, (Shree Maruti Courier V. V. Nagar)	01	
	Courier Charge, (Shree Maruti Courier V. V. Nagar)	01	
23.	Carpenter Work (Babubhai R. Panchal, Bakrol)	03	3,300.00
24.	Red Laser Pointer, (Bansal Audio Visual Pvt. Ltd. Ahmedabad)	01	16,100.00
	Colour Push PinBox, (Bansal Audio Visual Pvt. Ltd. Ahmedabad)	01	
	Digital Camera, (Bansal Audio Visual Pvt. Ltd. Ahmedabad)	01	
25.	Analytical Service UV/VIS/NIR Analysis	60	10,755.00
26.	Analytical Service TGA Analysis	06	2528.00
27.	Analytical Service CHN Analysis	06	1854.00
28.	HDD Baffalo 500GB external Hard disk, Source InfoTech, Anand	01	4,450.00
29.	Tata Docomo unlimited HARP Plan, Modem ZTE MF 631 USB SIM KIT- 39 Dongle	01	5,000.00
	3G DON RET HARP 5000 Dep Pack	01	
30.	Dr. Kiran Surti Department of Chemistry S P University V V Nagar		1650.00
	Registration Fees Workshop (oraganiaz under DST-PURSE Programme)	01	
	Tomer Refill HP-Q-2672A	01	
	Analysis Charges	01	
		Total Rs.	1,88,124.00

8e. Particulars of funds utilized for 'Maintenance' Purpose:

Sr. No.	Details of Maintenance	Department	Cost (INR)
1.	Annual Maintenance Contract (AMC) of X-Ray Diffractometer given to I. R. Technology Services Pvt. Ltd. Navi Mumbai	Physics	1,40,450.00
2.	Annual Maintenance Contract (AMC) of KAPPA APEX II SC-XRD System given to Bruker AXS Analytical Instruments Pvt. Ltd. Mumbai	Physics	68,539.00
		Total Rs.	2,08,989.00

9. Utilization of the facilities created under PURSE Program Support:

- The facility of LCMS is in extensive use by the researches from Department of Chemistry (about 100 samples), Department of Biosciences (about 25 samples).
- The detailed progress report of the work in progress by the research personnel appointed under DST PURSE programme is attached herewith in a separate booklet entitled **Summary of Ongoing Research Work by Personnel appointed under PURSE Programme, Sardar Patel University Vallabh Vidyanagar.**

Number of papers published: 14

Number of papers communicated: 4

Number of papers presented: 19

10. Details of full length Research Publication (in Peer- Reviewed Journals) during the Period under report:

An Overview

[A] Articles/Papers published in Academic Journals

Sr. No.	Department	Number
1.	Biosciences	52
2.	Chemistry	79
3.	Computer Science	34
4.	Electronics	04
5.	Materials Science	04
6.	Mathematics	15
7.	Physics	73
8.	Home Science	02
9.	Statistics	08
	Total	271

[B] Books/Chapters in Book

Sr. No.	Department	Books	Chapters in Book
1.	Biosciences	1	3
2.	Computer Science	1	2
3.	Mathematics	2	-

For the details of publications please see Annexure- I (Page no. 17 to 37)

11. Sponsored research projects in operation during the period under report (please provide names of PI/Co-PIs, title of the project, funding agency and total quantum of external support)

An Overview

Sr. No.	Departments	Sponsored Research Projects			Total Grant (Rs.)	Sponsoring Agency
		Ongoing	New	Total		
1.	Biosciences	16	04	20	6,14,29,990.00	DST, DST-WOS-A, DBT, UGC, BASF, CSIR, MoES, GSBTM
2.	Chemistry	12	04	16	1,29,86,400.00	UGC,UGC-DAE, CSR(Mumbai)

3.	Computer Science	01	0	01	1,00,000.00	Interdisciplinary Project, Seed Grant (SPU)
4.	Home Science	03	0	03	13,37,200.00	UGC, DBT, Seed Grant (SPU)
5.	Materials Science	05	0	05	1,59,30,000.00	UGC, DST, DST-RFBR(Indo-Russia), IPR, IPR-BRFST, DHEGoG
6.	Physics	05	03	08	1,88,91,050.00	UGC, DAE, BRNS, ISRO, SAP/DSA
7.	Mathematics	04	0	04	4,00,000.00	Seed Grant (SPU)
	Total	46	13	59	11,10,74,640.00	

Please see **Annexure-II** for the details (**Page no. 38 to 42**)

12. Utilization of Equipments by other institutes: Nil at present

13. Self assessment of the impact of the PURSE support:

13 a. Success of the students at national level tests (various Ph.D. entrance tests and tests for JRF etc) during the April 2012 to March 2013.

Sr. No.	Department	Ph. D. Entrance	NET	GATE	SLET	Others*
1.	Chemistry	17	1	-	1	-
2.	Electronics	-	-	-	-	-
3.	Home Science	01	03	-	01	-
4.	Materials Science	-	-	02	-	-
5.	Physics	-	-	-	-	-
6.	Mathematics	-	04	02	-	-
7.	Biosciences	25	02	06	NIL	03
8.	Statistics	01	-	-	-	-
9.	Computer Science	-	-	-	-	-

13 b. Any other new innovation/research projects that emerged on the basis of PURSE support:

(A) Immediately after the award of the PURSE-DST program, the university organized a couple of brain storming sessions, first involving the Heads of the science departments and the second involving the faculty members of the Science Faculty, to discuss and develop a scientific program in research and teaching pertaining the areas of inter-disciplinary studies and research. The university thus identified the following areas for the development of teaching and research programs:

1. Biomedical Science and Technology
2. Defence Science and Technology
3. Earth System Sciences

To facilitate design and implementation of the above programs of inter-disciplinary studies, the university has established **CISST – Centre for Inter-disciplinary Studies in Science and**

Technology and earmarked about **Rs. 50 lakhs from its own resource**. This center would thus supplement the PURSE – DST program.

(B) CISST activities:

(i) The following interdisciplinary studies under CISST have been completed:

No.	Principal Investigator	Collaborator	Titles
1.	SS Bhatt SPU, Biosciences	JM Patel SPU, Mathematics SJ Bhatt SPU, Mathematics Khushboo Vithalani, SPU, Biosciences	An Investigation on Fractality in Some Biological Systems and Processes
2.	KR Surati SPU, Chemistry	KD Patel SPU, Physics	Synthesis of Materials Based on Mixed Legends Complexes and their Evaluation as Solid-state Electroluminescent Devices
3.	HJ Panchal SPU Comp. Science	Brijal Patel SPU Comp. Science	Heli-PyD, a Comprehensive Database for Helico Bactor Pylori
4.	HV Dedania SPU, Mathematics	SJ Ghevariya SPU, Mathematics	An Investigation into Some Mathematical Aspects in Financial Derivatives
5.	TR Shah SPU, Pharma. Science	Rita V Vora PS Medical College, Karamsad	Hydrogel Thickened Microemulsion of Methotrexate for the Treatment of Psoriasis: Formulation and Clinical Implications
6.	UH Patel SPU, Physics	SS Soni SPU, Chemistry	Synthesis and Single Crystal X-ray Characterization of Catalytically Active Ionic Liquids

The report of detailed work carried out in above is enclosed as **Annexure-V**.

- (ii) The process of design of curricula for the M. Sc in Applied Science Programmes in the identified areas has been completed. These programmes are designed to be of inter-disciplinary nature with a strong component of research interwoven with teaching. The details of course structure is as shown in **Annexure IV (Page 53-58)**.
- (iii) **CISST Inter-disciplinary Lecture Series:** These are lectures planned on monthly basis and are being delivered by our faculty members with a view to identify a core group of researchers for taking up research work of inter-disciplinary nature. The details of these lectures is as follows:

Sr. No.	Name	Title	Month
1.	Prof. Dr. Harish Padh	India – Past, Present and Future	August 2012
2.	Prof. Dr. Vinodkumar	Higgs Boson – The God Particle	September 2012
3.	Prof. Dr. S. J. Bhatt	The Zero and The One	October 2012
4.	Prof. Dr. D. I. Brhambhatt	Nomenclature in Chemistry	November 2012

13 c. Did newly created facility lead to betterment of quality of research publications?

Yes certainly.

13 d. Any patent filed by the University as a result of PURSE grant.

No

14. Is any problem faced in utilization of the grant/facilities?

No

15. A report highlighting the research activities of the University using facilities created under PURSE Initiative during the period under review may also be provided:

Please see Annexure – III for details **(Page no. 43 to 52)**

(Prof. Dr. N. V. Sastry)
Nodal Officer, PURSE – DST Program

(Prof. Dr. Harish Padh)
Vice Chancellor
Coorodinator
PURSE – DST Program

Annexure-I**[A] Papers published in Academic Journals during April 2012- March 2013 Basic Science****Departments:****Department of Biosciences**

1. Rao KS, KS Rajput and Kim YS. Secondary growth and occurrence of isolated laticifers in the root of papaya (*Carica papaya* Linn.). Acta Botanica Gallica, (In Press), (2013).
2. Bhaumik R Dave, Ankit P Sudhir, Pritesh Parmar, Saurabh Pathak, Dharmesh P Raykundaliya and RB Subramanian. Enhancement of Cellulase Activity from a New Strain of *Thermoascus aurantiacus* by Response Surface Methodology. Biocatalysis and Agricultural Biotechnology, (In Press), (2013).
3. Preeti Mishra, Pramod S and KS Rao. Role of Exogenous Growth Regulators on Secondary Vascular Tissue Differentiation in the twigs of *Kigelia africana*. Phyton, (In Press), (2013).
4. Pritesh Parmar, Bhaumik Dave, Ketan Panchal and RB Subramanian. Identification of potential species *Croton bonplandium*, Sedges and *Balanitis aegyptiaca* for the application of phytoremediation. American Journal of Plant Sciences, (In Press), (2013).
5. Prakash R Patel and TV Ramana Rao. Physiological changes in Karanda (*Carissa carandus* L.) fruit during growth and ripening. Nutrition and Food Science, (In Press), (2012).
6. Rajput KS, VS Patil and KS Rao. Wood Anatomy and development of interxylary phloem of *Ipomoea herdifolia* Linn. (Convolvulaceae). Journal of Plant Growth Regulation, (In Press), (2013).
7. Oturkar CC, Patole MS, Gawai KR and Madamwar D. Enzyme based cleavage strategy of Bacillus lentus BI377 in response to metabolism of azoic recalcitrant. Bioresource Technology, 130: 360-365, (2013).
8. Parmar A, Singh NK, Dhoke R and Madamwar D. Influence of light on phycobiliprotein production in three marine cyanobacterial cultures. Acta Physiol Plant, Doi: 10.1007/s11738-013-1219-8, (2013).
9. Pramod S, Karumanchi S Rao, and Anna Sundberg, Structural, histochemical and chemical characterization of normal, tension and opposite wood of Subabul (*Leucaena leucocephala*). Wood Science and Technology, DOI: 10.1007/s00226-013-0528-9, (2013).
10. Rupal A. Vasant and AVRL Narasimhacharya. Limonia fruit as a food supplement to regulate fluoride-induced hyperglycaemia and hyperlipidaemia. Journal of the Science of Food and Agriculture, 93 (2): 422-426, (2013).
11. JH Bavarva and AVRL Narasimhacharya. Systematic study to evaluate anti-diabetic potential of *Amaranthus spinosus* on type-1 and type-2 diabetes. Cellular and Molecular Biology, 59 (Suppl): OL1818-L1825, (2013).
12. Rupal A. Vasant and AVRL Narasimhacharya. Response to Comments by Varol and Varol. Journal of the Science of Food and Agriculture, 93 (2): 428, (2013).
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14. Shah V and Madamwar D. Community genomics: Isolation, characterization and expression of gene coding for azoreductase. *International Biodeterioration and Biodegradation*, 79: 1-8, (2013).
15. Matkar K, Chapla D, Divecha J, Nighojkar A, Madamwar D. Production of cellulase by a newly isolated strain of *Aspergillus sydowii* and its optimization under submerged fermentation. *International Biodeterioration and Biodegradation*, 78: 24-33, (2013).
16. Rupal A. Vasant and AVR L Narasimhacharya. A multigrain protein enriched diet mitigates fluoride toxicity. *Journal of Food Science and Technology*, 50 (3): 528-234, (2013).
17. Pritesh Parmar, Bhaumik Dave, Ankit Sudhir, Ketan Panchal and RB Subramanian. Physiological, biochemical and molecular response of plants against heavy metals stress. *International Journal of Current Research*, 5 (1) 80-89, (2013).
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21. Patel V, Jain S and Madamwar D, Naphthalene degradation by bacterial consortium (DV-AL) developed from Alang-Sosiya ship breaking yard, Gujarat, India. *Bioresource Technology*, 107: 122-130, (2012).
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28. Rao KS, Kim YS and Pramod S. Ultrastructural changes in the cell walls of cambial derivatives during wood formation in Indian elm (*Holoptelea integrifolia* (Roxb.) Planch). IAWA Journal, 33 (4): 403-416, (2012).
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30. Singh NK, Kiran K, Patel J. A survey on prevalence rate & antibiotic susceptibility test (AST) pattern of methicillin resistant Staphylococcus aureus (MRSA) isolate from various types of clinical specimen & healthy hospital staff as carriers, Anand district. Journal of Pharmaceutical and Biomedical Sciences, 16(16), (2012).
31. Singh NK, Kiran K, Patel J. Prevalence of methicillin resistant Staphylococcus aureus and MDR pattern in physical and mentally handicapped children of Anoop mission, Anand, Gujarat. Advances in Bioresearch, 3(1): 73-77, (2012).
32. Rupal A. Vasant and AVRL Narasimhacharya. Amla as an antihyperglycemic and hepatorenal protective agent in fluoride induced toxicity. Journal of Pharmacy and Bioallied Sciences, 4 (3): 250-254, (2012).
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39. Prakash R Patel and TV Ramana Rao. Screening of antibacterial activity of some underutilized fruits of Sapotaceae International Food Research Journal, 19 (3): 1227-1231, (2012).
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Department of Home Science

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Department of Statistics

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[B] Books/Chapters in Book**Department of Bio-Sciences****Book:**

1. Mukesh H Koladiya, AVRL Narasimhacharya and Geeta Padate (2012). Avifaunal diversity on urban area: a case study in Vallabh Vidyanagar. LAP LAMBERT Academic Publishing, Saarbrucken, Germany.

Chapters in books:

2. SM Khasim, TV Ramana Rao, G Ramesh and S Hemalatha (2013). Structure and development of fruit and seed of *Jatropha gossypifolia* L. In B. Bahadur et al. (eds.), *Jatropha, Challenges for*

a New Energy Crop: Volume 2: Genetic Improvement and Biotechnology, DOI 10.1007/978-1-4614-4915-7_6, 87-94 Springer Science +Business Media New York.

3. Mohana S, Acharya BK and Madamwar D (2012). Bioremediation concepts for treatment of distillery effluent in *Biotechnology of environment management and resource recovery*. Chapter 14. Editor: Ramesh Chandra Kuhad, Springer India.
4. AVR L Narasimhacharya, Rupal A. Vasant (2012). *Chapter 12. Medicinal plants as antioxidants in fluoride induced oxidative stress*. In: *Medicinal plants as antioxidant agents: understanding their mechanism of action and therapeutic efficacy*, Edited by Anna Capasso, Research Signpost Publications, Trivandrum, India, ISBN: 978-81-308-0509-2: 267-287.

Department of Computer Sciences

Book/ Chapters in books:

5. Book Title: "Leguminous Trees In Anand District: Collection and Analysis with Bioinformatics Applications.", Paperback: 176 pages, Publisher: LAP LAMBERT Academic Publishing (December 10, 2012), Language: English, ISBN-10: 3843369828, ISBN-13: 978-3843369824

Chapters in books:

6. Priti Srinivas Sajja and Akerkar RA: "Mining sentiment using conversation ontology", in Patricia Ordóñez de Pablos, Héctor Oscar Nigro, Robert Tennyson, Sandra E. González Císaro and Waldemar Karwowski (Eds.), *Advancing Information Management through Semantic Web Concepts and Ontologies*, Chapter 16, pp.302-315, IGI Global Book Publishing, Hershey, PA, USA (Nov'12)
7. Mankad KB and Priti Srinivas Sajja: "Measuring human intelligence by applying soft computing techniques: A genetic fuzzy approach", in Naidenova XA & Shagalov VL (Eds.), *Diagnostic Test Approaches to Machine Learning and Commonsense Reasoning Systems*, Chapter 6, pp.130-155, IGI Global Book Publishing, Hershey, PA, USA (Jul'12).

Department of Mathematics

Book/ Chapters in books:

8. A.H.Hasmani, worked as an author for the Text books of Mathematics for Std 11 (Semester -II) for Gujarat Text Book Production Board.
9. A.H.Hasmani, worked as a translator for the Text books of Mathematics for Std 11. (Semester -II) for Gujarat Text Book Production Board.

Annexure-II

**Details of Sponsored Research Projects during April 2012- March 2013
Science Departments**

[A] List of Ongoing Projects**Department of Biosciences**

1. Prof. Datta Madamwar (PI), Molecular assessment of bacterial community structure of long term polluted sea coast near Alang ship breaking yard and exploitation of the bacterial wealth for PAH bioremediation. DST, New Delhi, **Rs. 26, 95,000/-**(2010-2013).
2. Prof. Datta Madamwar (PI), Prof. R. B. Subramanian (CI) & Dr. Harseh Keharia (CI) Molecular and ‘-omics’ technologies to gauge microbial communities and bioremediation of xenobiotic contaminated sites. DBT, New Delhi, **Rs. 3, 07, 73,000/-** (2010-2015).
3. Prof. Datta Madamwar(PI), Metagenome analysis for metabolic pathways present in activated biomass at common effluent treatment plant (CETP), DBT, New Delhi, **Rs. 61,32,000/-** 3 years (Jan 2010 to Dec 2013).
4. Prof. Datta Madamwar (PI), Application of periodic discontinuous batch operation to enhance treatment efficiency of dye containing waste-water. DBT, New Delhi, **Rs. 51, 02,000/-** (2010-2013).
5. Prof. (Mrs.) Kiran Kalia (PI), Potential of marine bacterial isolates in arsenic bioremediation, MOES, New Delhi. **Rs. 21, 33,090/-** (2010-2013).
6. Dr. Kiran Kalia (PI), Mrs. Sejal Desai (CI), Role of SNPs and its association with oral cancer in western Indian population, DST/WOS-A, New Delhi, **Rs. 18,40,000/-**, 2012-2015.
7. Prof. K. C. Patel (CI), Production and characterization of a yellow antioxidant pigment from *Colletotrichum* sp. KCP1. DBT, New Delhi. **Rs.20, 10,000/-**(2011-2014).
8. Prof. K. C. Patel (PI), Curdlan and lipase production using *Cellulomonas flavigena* UNP3 and their applications.UGC, New Delhi. **Rs.10, 50,000/-** (2011-2014).
9. Prof. J. S. S. Mohan (PI), Induction of systemic acquired resistance to control blight & wilt in *Cuminum cyminum* L. by using *Alternaria burnsii* & *Fusarium oxysporum* f. sp. *Cumini* derived elicitor. UGC, New Delhi. **Rs. 9, 61,800/-** (2011-2014).
10. Prof. R. B. Subramanian (PI) Screening and Identification of a SSR marker linked to resistance against Fusarium wilt in tomato. UGC, New Delhi. **Rs.8, 63,300/-** (2010-2013).
11. Prof. T.V.Ramana Rao (PI), Histo-physiological analysis of melons at different rates of ripening. UGC, New Delhi, **Rs. 7, 77, 800/-** , 3 ½ Years (May, 2009 to October, 2012).
12. Dr U B Trivedi (PI), Microbial Synthesis and Purification of Chiral Hydroxyalkanoic acid, CSIR, **Rs. 17, 41,300/-** , February, 2011 to February, 2014.
13. Dr. (Mrs.) Amita R. Shah (PI), Dr. Datta Madamwar (CI), Production of -xylosidase and accessory hemicellulolytic enzymes for effective bioconversion of plant lignocelluloses GSBTM, Gandhinagar, **Rs. 19, 60,800/-**. (2011-2014).
14. Dr. (Mrs.) Sujata S. Bhatt (PI), An investigation into the development of alternative carp feed using prebiotics, probiotics and fermentation. UGC, New Delhi, **Rs. 6, 69,800/-**. (2011-2014).
15. Dr. Vasudev R. Thakkar (PI), Characterization of natural resistance in *Arachis hypogaea* L against *Aspergillus niger*.UGC, New Delhi, **Rs. 10, 61,800/-**. (2011-2014).

16. Dr. M. Nataraj (PI), Micropropagation of *Hyphaene dichotoma*- a rare and endemic palm. UGC, New Delhi, **Rs. 7, 04,300/-**. (2011-2014).

Department of Chemistry

17. Dr. H. S. Patel (PI), "Decolorization and removal of dyes from textile industries effluents", UGC, New Delhi, **Rs. 8, 64,300/-**, 2010, Three Years.
18. Dr. S. S. Soni (PI), Influence of Micellar Morphology on Conductivity of Polymer Gel Electrolyte, UGC-DAE, Mumbai Centre, Mumbai, **Rs. 5,73,000/-**, Three years from 31st March, 2012.
19. Dr. N. J. Parmar (PI), Synthesis of bioactive polyheterocycles via Knoevenagel-hetero-Diels-Alder-reaction, UGC, New Delhi, **Rs. 7,38,800/-**, Three years (From: 1/02/2011 to 1/01/2014).
20. Dr. Jignesh H. Trivedi (PI), Photo-Induced Synthesis, Characterization and Potential Applications of Sodium salt of Partially Carboxymethylated Sodium Alginate, UGC, New Delhi, **Rs. 11,22,500/-**, 2011-2014.
21. Dr. M. N. Patel (PI), Evolution of Metal Based Drugs as SOD Mimics and Artificial Metallonucleases, UGC, New Delhi, **Rs. 11,76,800/-**, 2011, Three Years.
22. Dr. Manish P. Patel (PI), Studies of New Superabsorbent Nano Materials for Removal of Toxic metals and Dyes from Industrial Wastewater., UGC, New Delhi, **Rs. 7,01,600/-**, Feb-2011 to Jan-2014.
23. Dr. H. S. Patel (PI), Decolorization and Removal of Dyes from Textile Industrial Effluents, **Rs. 8,64,000/-** UGC New Delhi (2011 – 2014)
24. Dr. N. V. Sastry (PI), Nanoaggregates in Mixed Micellar Systems of Amphiphilic Copolymer and Conventional Ionic or Nonionic Surfactants – A Search for Synergistic Behaviour and Their Utility As Drug Solubilizing and Release Systems Based On Hydrogels, **Rs. 8,64,000/-**, UGC New Delhi (2011 – 2014)
25. Dr. N. V. Sastry (PI), Studies on Aggregation Behavior of Pyridinium based Amphiphilic Ionic Liquids in Water and in Presence of Aggregate Growth Promoters, **Rs. 3,93,000/-**, UGC – DAE CSR, Mumbai Center, Mumbai, (2011–2014)
26. Dr. M. N. Patel (PI), Evolution of Metal Based Drugs as SOD Mimics and Artificial Metallonucleases, **Rs. 10, 67,800/-**, UGC New Delhi, (2011 – 2014)
27. Dr. M. P. Patel (PI), Studies of New Superabsorbent Nano Materials for Removal of Toxic Metals and Dyes from Industrial Waste water, **Rs. 7,00,800/-**, UGC New Delhi, (2011 –2014)
28. Dr. N. J. Parmar (PI), Synthesis of Bioactive Polyheterocycles via Knoevenagel–hetero–Diels Alder–Reaction, **Rs. 7, 38,800/-**, UGC New Delhi, (2011 – 2014)

Department of Computer Science

29. Dr. Hetal J. Panchal (PI) & Mr. Brijesh B. Patel (CI) "Heli-PyD, a Comprehensive Database for *Helicobacter pylori*". **Rs. 1, 00,000/-** (letter no: G/No. DST Purse/12-13/7674; Date 06/06/2012), Under the Head of Interdisciplinary studies at DST-PURSE-SPU.

Department of Home Science

30. Dr. Rema Subhash (PI), Immobilisation of probiotic micro-organisms on food matrices and their efficacy in the preparation of fermented dairy products., DBT, New Delhi, **Rs.11,37,200/-**, 2/6/2011 to 31/7/2014.
31. Dr.Jisha Elias (PI), Screening of SNPs in Melano cortin-4-Receptor gene in over weight-Obese population of Anand Vallabh Vidyanagar. Seed Grant, SPU. **Rs.1,00,000/-**.One year.
32. Ms. Viraj Roghelia (PI), Nutritional Composition and Pesticide residue level among organically and conventionally grown fruits and vegetables, Seed Grant, SPU. **Rs.1, 00,000/-** One year.

Department of Mathematics

33. A. H. Hasmani (PI), Applications of Newman-Penrose Formalism, Seed Grant, SPU, **Rs. 1,00,000/-**
34. P.A. Dabhi (PI), Harmonic Analysis on weighted groups and semigroups, Seed Grant, SPU, **Rs. 1,00,000/-**
35. H. V. Dedania (PI), S.J. Ghevariya (CI), An investigation in to some Mathematical Aspects in financial derivatives, Interdisciplinary Studies, SPU **Rs.1,00,000/-**
36. S.S. Bhatt (PI), S. J. Bhatt (CI) and J.M. Patel (CI). An Investigation of Fractality of some biological systems and processes, Interdisciplinary Studies, SPU **Rs. 1,00,000/-**

Department of Materials Science

37. Dr. L. M. Manocha (PI), Dr. S. Manocha (CI), Centre of Advanced Studies(CAS)-Special Assistantship Programme (SAP), UGC, New Delhi, **Rs. 1,06,00,000/-**, 2009-2014.
38. Dr. L. M. Manocha (PI), Dr. S. Manocha (CI), Studies on Development & Characterization of Nanostructures Incorporated Carbon & Silicon Carbide based Composites, National Fusion Programme (IPR), Gandhinagar, **Rs. 17,44,000/-** , 2010 -2012.
39. Dr. L. M. Manocha (PI), Studies on effect of Irradiation on Physical and Mechanical properties of Densified Carbon and SiC based Composites, IPR-BRFST **Rs. 19,78,000/-**78 lakh, 20.09.2010, Two Years.
40. Dr. L. M. Manocha (PI), Development of silver based Polymeric matrix Nanocomposites, UGC, New Delhi, **Rs. 8,58,000/-**, 2011-2014.
41. Dr. L.M .Manocha (PI), MOU for Scientific International Collaborations Collaboration with Shinshu University, Japan; Argon National laboratory, Chicago, USA; and Seoul National University of Science and Technology; Korea, UGC, New Delhi, Rs 2.5 lakh from year 2011 per year Up to 2014. **(Rs. 7,50,000/-)**

Department of Physics

42. Dr. M.P. Deshpande (PI), Dr. A.R. Jani (CI), "Raman Spectroscopy and Resistivity studies of semiconductors under pressure", DAE-BRNS, Amount **Rs. 24,61,250/-** with ATC, BRNS dated 06/01/2011., 2010-2013.

43. Dr. S.H. Chaki (PI), Dr. M.P. Deshpande (CI), "Synthesis and characterization of Tin monosulphide thin films, nanoparticles and single crystals for optoelectronic devices", DAE-BRNS, Amount **Rs. 24, 49, 000/-** with ATC, BRNS dated 13/12/2010, 2010-2013.
44. Dr. G.K.Solanki (PI), Studies on well characterized doped crystals of GeSe and SnSe for their applications in opto-electronic devices., UGC, New Delhi, **Rs. 4,95,000/-**, Three years 1st March-2011 to 28th February 2014.
45. Dr. Sunil Chaki (PI), Preparation and characterization of CuxS (x=1 to 2) in nanocrystalline thin films, nanoparticles and single crystal forms for optoelectronic devices., UGC, New Delhi, **Rs. 7,41,800/-** , 2011, Three Years.
46. Dr. P. C. Vinodkumar (PI), Study of strong and weak decay processes of mesons involving heavy flavor quarks, UGC, New Delhi, **Rs. 9,00,400/-**, 3yrs [1/7/11 to 31/06/14

[B] Projects awarded in 2012-2013

Department of Biosciences

1. Prof. Datta Madamwar (PI), Folding and stability of naturally truncated photosynthetic pigment C-phycoerythrin from cyanobacteria *Phormidium tenue*, DST New Delhi, **Rs. 3,60,000/-** (2012-2015)
2. Prof. J. S. S. Mohan (PI), Evaluation of physiological effects of Pyraclostrobin 20% WG on Corn., BASF, **Rs. 1,98,000/-** (2012-2013)
3. Prof. J. S. S. Mohan (PI), Evaluation of physiological effects of Pyraclostrobin 20% WG on Groundnut, BASF, **Rs. 1,98,000/-** (2012-2013)
4. Prof. R. B. Subramanian (PI), Effect of sequential applications of Headline 20% WG and Cabrio Top 60% WG on growth and physiology of *Gossypium hirsutum* (Cotton), BASF, **Rs. 1, 98,000/-**, One year (June, 2012) to (May 2013).

Department of Chemistry

5. Dr. H. S. Patel (PI), UGC-BSR One time grant, **Rs. 7,00,000/-**, UGC New Delhi (2012 to 2013)
6. Dr. S. S. Soni (PI), Influence of Micellar Morphology On Conductivity of Polymer Gel Electrolytes, **Rs. 5, 92,000/-**, UGC-DAE, Mumbai, (2012-2015)
7. Dr. S. S. Soni (PI), Development of Porous Functionalized Metal Oxides And Their Application In Metal Ion Removal, **Rs. 10, 35,000/-**, UGC New Delhi , (2012-2015)
8. Dr. K. R. Surati (PI), Novel Coordination Compounds Derived From PyrazoloneSchiff Base and Transition Metal Ions: Design, Synthesis, Characterization And Biological Activities Investigations, **Rs. 8, 54,000/-**, UGC, New Delhi, (2012-2015)

Department of Electronics

9. Dr.(Ms.) Basumati H.Patel (PI) , Synthesis and Charcterrization of Pulsed Laser Deposited Semiconductor thin films for nanosensor application, UGC, **Rs. 14,58,800/-** (2012-2013)
10. Dr.(Mrs) Shahera S.Patel (PI), Screeningof Design and development of a Laboratory Based Model of BGA Rework Station, SEED GRANT, **Rs. 1,00,000/-** 1 Year from 10th Sept 2012

Department of Physics

11. M. P. Deshpande (PI), Synthesis and characterization of V_2VI_3 compound in single crystal/nanomaterial/ thin film forms. –, Funding agency: University Grants Commission, New Delhi. Amount: **Rs. 11, 16,800/-**.
12. N. K. Bhatt (PI) and A. R. Jani (CI), Vibrational response and phase transition in certain non-simple metals and alloys covering wide range of densities. – Funding agency: University Grants Commission, New Delhi. Amount: **Rs. 9, 76,800/-**.
13. Prof. A.R. Jani (Coordinator), Prof. U. H. Patel (Deputy Coordinator), SAP/ DSA (Phase – I) project allotted to Department of Physics by UGC (New Delhi), Amount: **Rs. 97, 50,000/-** , Project duration: 5 years (2012-2017).

Annexure –III**Research Activities of the University under PURSE – DST Programme during the period of Report****1. Thrust Areas of Research in the Science Departments**

Department	Thrust Areas of Research
Department of Biosciences	Microbial and Environmental Biotechnology, Plant and Animal Biotechnology and Plant and Microbial Biodiversity
Department of Chemistry	Polymer Science, Organic and Inorganic Chemistry, and Physical Chemistry
Department of Computer Science	Systems Software, Distributed Computing, Knowledge-based Systems, Image Processing
Department of Electronics	Semi-conducting Thin Films and Device Applications, Gas Sensors, Biosensors, Polymer Electronics, VLSI, Embedded Systems
Department of Home Science	Functional foods and Nutraceuticals, Nutrigenomics, Bio-processing, Natural dyes and textiles, Women Empowerment
Department of Materials Science	High Performance Composites, Ceramics, Carbon, Nano Materials and Smart Materials, Biomaterials and Polymers
Department of Mathematics	Banach Algebras, Operator Theory, Operator Algebras and Applications, Harmonic Analysis, Relativity, Tribology, Financial Mathematics
Department of Physics	Condensed Matter Physics, High Energy Physics, Atomic and Molecular Physics, Theoretical Physics
Department of Statistics	Design of Experiments, Inference, Biostatistics, Financial Statistics, Reliability and Life Testing, Statistical Quality Control

2. Academic Achievements of Various Departments**Department of Biosciences****Foreign visits:**

1. Prof. Datta Madamawar delivered a plenary talk on “Molecular analysis of bacterial community structure to assess ecological impact of pollution” in 5th International Conference on ‘Industrial Bioprocesses’ at National Taiwan University of Science and Technology and National Taiwan University, Taipei, Taiwan during October 7-11, 2012.
2. Prof. K.S. Rao attended and delivered a plenary talk on “Cambial Seasonality in Tropical Trees” at the IAWA 2012 Pan-American meeting from 1st to 5th October 2012 at Recife, Brazil

3. Prof. A. V. R. L. Narasimhacharya presented the work in an International Conference on Food Structures, digestion & health at Riddet Institute, Massey University, New Zealand, 7th- 9th March 2012
4. Prof. J. S. S. Mohan attended Third Asian Top Ciencia Meeting organized held at Bali, Indonesia on 17-21 December, 2012.
5. Prof. R. B. Subramanian visited Bali, Indonesia to attend the Topsciencia conference by BASF from Dec 17 to 21, 2012

Fellowships/Awards to Research students:

1. Ms. Vilas Patel and Ms. Neeta B. Gol have been awarded 'CSIR SRF Fellowship' by Council of Scientific & Industrial Research, New Delhi for the period of two years form April 2012 to March 2014.
2. Mr. Ravi Sonani, Ms. Jenny Johnson and Mr. Parth Thakor have been awarded DST 'Inspire Fellowship' for the student standing First in the University in the selected subject by Department of Science and Technology, Ministry of Science and Technology, New Delhi for the period of five years.
3. Ms. Zeenat Khan has been awarded 'Maulana Azad National Fellowship' by University Grants Commission, New Delhi for the period of five years.
4. Neeta B. Gol and T. V. Ramana Rao received Dr. C. K. Shah award for Best Research Paper entitled "Banana fruit ripening as influenced by edible coatings" in Plant Sciences (Botany / Agriculture Botany / Plant Biotechnology) for the year 2011-2012.

Degree of Ph.D. awarded:

Sr. No.	Name of the Ph. D. Student	Guided By	Title of Thesis
1.	Neha Joshi	Dr. K.S. Rao	"An investigation on the pathogenicity of fusarium oxysporum f. Sp. Ciceris against chickpea (Cicer arietinum L.)"
2.	Pramod S	Dr. K. S. Rao	"Structural histochemical and biochemical studies on xylem cell wall in leucaena leucocephala (LAM) DE WIT",
3.	Purvesh Bharvad	Dr. J S S Mohan	"In vitro propagation, phytochemical analysis and antidiabetic properties of a rare medicinal herb: Schweinfurthia papilionacea A.BR."
4.	Digant Chapla	Dr. Amita Shah	"Microbial production of xylanase from agro-industrial residues: purification, characterization and applications"
5.	Mrs. Shilpa Gupte	Dr. Hareesh Keharia	"Microbial remediation of azodyes using bacterial consortium- des"
6.	Dhiraj Chavda	Dr. Sujata. S. Bhatt	"Biomonitoring of hygienic conditions of aquaculture units and their effect on health status of cultivable prawns and fishes"

7.	Sandesh Mohan Yadav	Dr. Kiran Kalia	“A study on type 2 diabetic patients using IgG as prognostic biomarker for diabetic nephropathy”
8.	Hitesh Patel	Dr. Kiran Kalia	“Potential Biological mechanism of arsenic induced diabetes mellitus”
9.	Miss Rupal A. Vasant	Dr A V R L Narasimhacharya	“An investigation on the alternative remedial measures to ameliorate fluoride toxicity”
10.	Shraddha Trivedi	Dr. K. C. Patel	“Biochemical and molecular evaluation of castor bean (<i>Ricinus communis</i> L.) Breeding lines against fusarium wilt”
11.	Suchita Patel	Dr. R. B. Subramanian	“An investigation on the genetics of resistance in selected tomato cultivars against early blight caused by <i>alternaria solani</i> ”
12.	Harsur M. Jajda	Dr. Vasudev Thakkar	“Investigation of molecular mechanism of tikka disease caused by hemibiotroph, <i>cercospora</i> species and collar rot disease caused by necrotroph, <i>Aspergillus niger</i> in <i>Arachis hypogaeae</i> L

Department of Chemistry

Research

The faculty members have been carrying out the research work in the defined and related thrust areas for the last one year and published papers with following specific themes.

- Metal based drugs
- Amphiphilic copolymers / ionic liquids and their aggregates for drug solubilization and release
- Dye sensitized solar cell
- Organic synthesis
- Biologically active organics

Ph. D. Degrees Awarded

Sr. No.	Name of the Ph. D. Student	Guided By	Title of Thesis
1.	Jigarkumar A. Makwana	Dr. (Miss) R.G.Patel	Novel Heterocyclic Derivatization of 2-Chloroquinoline compounds : Their Synthesis, Characterization and Biological Evaluation
2.	Darshana J. Patel	Dr. H.S.Patel	Synthesis and Characterization of BIS-INDOLE based coordination Polymers
3.	Mehul M. Patel	Dr. N.K.Patel	UV-Curable polyurethane coatings derived from renewable resources based modified polyols
4.	Chetan B. Sangani	Dr. (Miss) R.G.Patel	Synthesis and Biological Evaluation of Novel Arylos – Pyrazole and Quinoline based Heterocycles
5.	Nilesh M.	Dr. N.V.Sastry	Surfactant like Ionic Liquids – Synthesis an Studies on

	Vaghela		Surface Chemical and Aggregation Behaviour in Aqueous Media
6.	Promise A. Dosi	Dr. M.N. Patel	Synthesis, Characterization, In-vitro Antimicrobial and DNA interaction studies of some novel coordination compounds of copper(II) and Palladium (II)
7.	Nimesh M. Shah	Dr. (Miss) R.G.Patel	Synthesis of Novel Quinoline based Heterocycles of biological interest
8.	Shashikant B. Teraiya	Dr. N.J.Parmar	Tetrabutylammonium Hydrogen sulfate mediated Domino Reaction : Synthesis and Biological Studies of some Pyrano-, and Chromeno-fused Heterocycles
9.	Chirag V.Patel	Dr. D.I.Bhrambhatt	Synthesis and Antimicrobial activity study of nitrogen containing heterocyclic substituted and heterocyclic fused coumarin derivatives
10.	Jayvirsinh M. Thakor	Dr. (Mrs) T.B.Shah	Applications of Amonoaromatic sulfonic Acid Anchored Chloromethylated Polystyrenedvb cation Exchangers
11.	Varun G. Bhila	Dr. D.I.Bhrambhatt	Studies on Synthesis antimicrobial efficiency of pyridine and pyrazole substituted/fused coumarin derivatives
12.	JigneshB. Dholakiya	Dr. K.H.Patel	Synthesis, Characterization and Microbial screening of Novel Arcylic Copolymers erived from coumarin moiety
13.	Bhupesh S. Bhatt	Dr. M.N.Patel	Synthesis, Characterization and Evaluation of Gold(III) and ciprofloxacin based copper (II) complexes as Antibacterial, Metallonucleases and cytotoxic Agents
14.	Visha P. Modi	Dr. H. S. Patel	Studies on Heterocyclic Compounds Having Azo Dye and Spiro Characteristics
15.	Khyati D. Patel	Dr. H.S.Patel	Studies on Coordination Polymers Based on Novel Bis-Ligands
16.	Rikin A. Patel	Dr. N.J.Parmar	Improved Protocols for domino reaction: synthesis and biological studies of some novel pyran-annuated heterocycles

Talks Delivered

Sr. No.	Title of the Lecture/ Talk	Name and Place of Dept./ College/ University	Duration of Visit
	Prof. Dr. H. S. Patel		
1.	"Medicinal Polymers"	"Advancements in Polymeric Materials 2013 (APM-2013)", At CIPET, Lucknow, UP, India	1 st -3 rd March 2013
2.	"Polymers and Environment"	"Advances in Synthetic & Applied Chemistry" S.N. Arts, D.J.M. Commerce &	6 th - 8 th September

		B.N.S. Science College, Sangamner	2012
Prof. Dr. D. I. Brahmhatt			
3.	^{13}C NMR and 2D NMR Spectroscopy	Department of pure and applied chemistry, M.D.S. University, Ajmer	10-12 th January, 2013
4.	IUPAC nomenclature	SANDHAN (BISAG) Gandhinagar	26 th February and 5 th March, 2013
5.	^1H NMR, ^{13}C NMR and 2D NMR Spectroscopy (Refresher course)	Academic staff college, M.D.S. University, Ajmer	11-13 th October, 2012
6.	Nomenclature in Chemistry	CIIST, Sardar Patel University	1 st November, 2012
7.	IUPAC nomenclature of Organic compounds	Department of pure and applied chemistry, M.D.S. University, Ajmer	22 nd March, 2013
8.	2D NMR spectroscopy (Refresher course)	Academic staff college, Gujarat University, Ahmedabad	14 th February, 2013
9.	Mass spectroscopy and Disconnection approach (U. G. C. visiting teachers programme)	Department of Chemistry, Hemchandracharya North Gujarat University, Patan	7-9 th March, 2013
10.	^{12}C NMR and Mass Spectroscopy	Uka Tarsadiya University, Bardoli	6-8 th September, 2012
Prof. Dr. N. V. Sastry			
11.	Chemistry - An Exciting Science	INSIPRE – DST Science Camp, Sri Venkateshwara University, Tirupati	21 -23 rd December 2012
12.	Interactions in Ionic liquid / water mixtures, thermodynamic properties and excess infrared absorption spectroscopy measurements	Sri Venkateshwara University, Tirupati	10-12 th December 2012

Industries having visited the Department for campus interview

Sr. No.	Name of Industries	Date of Interview
1.	Solvay International Ltd., Panoli	1 st Feb 2013
2.	Aditya Birla	7 th Feb 2013
3.	Navin Fluorine Surat	12 th Feb 2013

4.	PI Industries Ltd., Ankaleshwar	25 th Mar 2013
5.	BASF, Dahej	2 nd Apr 2013
6.	Electrical Research Development Association, ERDA, Vadodara	3 rd Apr 2013
7.	Pyramal Discovery Solution, A'bad	7 th Apr 2013
8.	Amoli Pharmaceutical,	14 Apr 2013

Details of Talks by External Teachers/Scholars on different topics

Sr.No.	Name of the resource person and affiliation	Topics of the talk(s) (No. of Lectures)	Date (s)
1.	Prof. Dr. R. Shirsat Department of Chemistry, University of Goa, Goa	<ul style="list-style-type: none"> • Computer Applications in Chemistry • Quantum Chemistry Concepts and Importance • Computer Applications in Chemistry • Quantum Chemistry Concepts and Importance • Irreversible Thermodynamics <p style="text-align: center;">(5 Lectures)</p>	3 rd October to 6 th October, 2012
2.	Prof. Dr. S. P. Gejji Department of Chemistry University of Pune, Pune	<ul style="list-style-type: none"> • NET/SLET/Ph.D Test Orientation – I • NET/SLET/Ph.D Test Orientation – II • Approximate Methods in Quantum Chemistry • Variational Methods in Quantum Chemistry • Applications of Computational Chemistry <p style="text-align: center;">(5 Lectures)</p>	8 th October to 13 th October, 2012
3.	Prof. Dr. A. Venkatraman Department of Chemistry Gulbarga University, Gulbarga	<ul style="list-style-type: none"> • Development of Materials (From atoms to materials – concepts to applications) • Materials Synthesis – focuses of Chemical routes • Properties of Solids and Materials – Thermal Properties • Properties of Solids and Materials – Magnetic and 	10 th February to 16 th February, 2013

		<p>Electrical Properties</p> <ul style="list-style-type: none"> • Nanotechnology – focus on functional materials for varied applications and drug delivery / contrast agents • High energy materials – principals to Applications <p>(5 Lectures)</p>	
4.	<p>Prof. Dr. S. Ramshesha</p> <p>Solid State Structural Unit</p> <p>Indian Institute of Science,</p> <p>Banglore</p>	<ul style="list-style-type: none"> • Quantum Mechanics and Many Body Interactions • Quantum Mechanics and Many Body Interactions • Role of Electron repulsions in molecules and solids • Role of Electron repulsions in molecules and solids <p>(4 Lectures)</p>	<p>24th February to 2nd March, 2013</p>

Department of Home Science

Oral and poster presentation were done by the faculty members at various National and Interantional conferences during: April-2012 to March-2013

1. Dr.V.H.Patel. Nutritional Profile and Antioxidant Potential in Selected Organically and Conventionally Grown Fruits. International Conference on Food Technology for Health Promotion ICFTHP-2012, IIFANS, JNU, New Delhi, 27-28 December, 2012.
2. Dr.V.H.Patel. Antiglycation and Antioxidant Properties of Selected Herbal Plants of Manipur. International conference on Diabetes and its complications, CHARUSAT, Changa, 8-10 January, 2013.
3. Dr.V.H.Patel. Prevalence and Association of Risk Factors with Cardiovascular Disease among Adult Male Population of Vallabh Vidyanagar. International conference on Diabetes and its complications, CHARUSAT, Changa, 8-10 January, 2013.
4. Dr. Rema Subhash. Optimization of Walnut Oat-Wholewheat Flour Based Bread and Its Impact on the Blood Lipemic Response of Mildly Hypercholesteolemic Subjects. International conference on Diabetes and its complications, CHARUSAT, Changa, 8-10 January, 2013.
5. Dr. Namrita Kola. Diversifying the use of Bhindi (Hibiscus Cannabinus Linn.) yarns. National Seminar on "Dynamics of craft development- A tecnopreneur Approach", Department of Clothing & Textiles, Faculty of Family & Community Science, M S University, Vadodara, 21-22 December, 2012.
6. Dr. Namrita Kola. Embroidery of Node Community of Bunny Region. . National Seminar on "Dynamics of craft development- A tecnopreneur Approach", Department of Clothing & Textiles, Faculty of Family & Community Science, M S University, Vadodara, 21-22 December, 2012.
7. Dr. Neeta Dave. Prevalence and Association of Various Risk Factors with Diabetes Mellitus among Adult Male Population of Vallabh Vidyanagar. International conference on Diabetes and its complications, CHARUSAT, Changa, 8-10 January, 2013.
8. Ms. Viraj Roghelia. Nutritional Profile and Antioxidant Potential in Selected Organically and Conventionally Grown Fruits. International Conference on Food Technology for Health Promotion ICFTHP-2012, IIFANS, JNU, New Delhi, 27-28 December, 2012.

9. Ms. Viraj Roghelia. Formulation and sensory attributes of herbal tea. International conference on Diabetes and its complications, CHARUSAT, Changa, 8-10, January, 2013.
10. Dr. Jisha Elias. Effect of Antioxidants Rich Plant Extracts on Improving ROS Status in Obese Human. International conference on Diabetes and its complications, CHARUSAT, Changa, 8-10, January, 2013.

Department of Materials Science

Student achievements:

(I) GATE Exam Results (2012)

No.	Student Name	All India Rank
1.	Manish Oommen	201
2.	Chandresh Limbasia	291

(II) Mr. Parth Joshi got the Prize in Poster Presentation in the "National conference on Carbon Materials- 2012" held on November 1st -3rd, 2012 at BARC, Mumbai.

Department of Physics

FOREIGN VISITS

Faculty

Prof. S. H. Chaki

Participated and presented a research paper entitled "Study of some binary and ternary chalcogenide semiconductors as materials for solar cells" at the **SMR 2334 – AIP Industrial Physics Forum 2012: Capacity Building for Industrial Physics in Developing and Emerging Economies** held at **Abdus Salam International Centre for Theoretical Physics (ICTP)**, Trieste, Italy during 16 -20 April 2012.

Students

Abhay Dasadia presented a research paper entitled "Structural characterization and transport properties of CVT grown ZrSe₃ and ZrS₃ crystals" at the 4th EuCheMS Chemistry Congress, Prague, Czech Republic, 26 – 30 August 2012.

Arpit Parmar presented a research paper entitled "B_d-B_d mixing parameters using CPPv model" at the Sixth International Conference on Quarks and Nuclear Physics 2012, Palaiseau, France, 16 – 20 April 2012.

Siddharth Pandya presented two research papers entitled "Diurnal variation in the ion production rates upon photo-electron impact ionization in the Martian ionosphere" and "Excitation and elastic scattering upon electron impact with planetary molecules: Cross sections and applications" at the AOGS-AGU (WPGM) Joint Assembly, Resorts World Convention Centre, Singapore, 13 to 17 August, 2012.

Manan Shah presented research papers at the Xth Quark Confinement and Hadron Spectrum Conference, Munich, Germany, 08 to 12 October, 2012.

M. Phil. / Ph.D. PRODUCED WITH TITLE OF DISSERTATION/ THESIS:

M. Phil. Awarded:

1. Name of the candidate : Ms. Smruti Jagdishbhai Patel
Title of Dissertation: Comparative Study of Certain local Pseudopotentials and a new Proposal
Guide: Prof. A. R. Jani (2012).
2. Name of the candidate: Ms. Kamakshi Patel
Title of Dissertation: Synthesis, characterization and application of silver nanoparticles.
Guide: Prof. M.P. Deshpande (2012).
3. Name of the candidate: Ms. Shandhya P. Shukla
Title of Dissertation: Investigations of MoSe₂ / Polypyrroll heterostructure solar cells
Guide: Prof. V. M. Pathak (2013).
4. Name of the candidate: Ms. Kanan D. Patel
Title of Dissertation: Optical properties of some group II-XI chalcogenides.
Guide: Prof. V. M. Pathak (2013).
5. Name of the candidate: Ravi Dawda
Title of Dissertation: Theoretical aspects of electron atom-molecular Physics.
Guide: Prof. K. N. Joshipura (2013).
6. Name of the candidate: Ms. Malek Tasmirabanu J
Title of Dissertation: Synthesis and characterization of Fe₃O₄ nanoparticles.
Guide: Prof. S. H. Chaki (2013).

Ph. D. Awarded:

1. Name of the candidate: Vyas Pareshkumar Shaileshkumar
Title of Thesis: Application of Pseudopotential theory to certain Binary, Ternary and Quaternary semiconductors
Guide: Prof. A. R. Jani (2012).
2. Name of the candidate : Ms. Pooja Bhowmik
Title of Thesis: Theoretical studies on electron scattering processes with important atomic and molecular targets'
Guide: Prof. K. N. Joshipura (2012).
3. Name of the candidate: Ketan Dodia
Title of Thesis: Spectroscopic study of hydrogen bonded one-dimensional conductors
Guide: Prof. A. T. Oza (2012).
4. Name of the candidate: Ajay Majethiya
Title of Thesis: Properties of heavy flavour Baryons using Quarks Models.
Guide: Prof. P. C. Vinodkumar (2012).
5. Name of the candidate: Ms. Pragna Vadher
Title of Thesis: Theoretical modeling of Tribological problems using magnetic fluids as lubricants.
Guide: Prof. P. C. Vinodkumar (2012).
6. Name of the candidate: Shyamkumar G. Khambholja
Title of Thesis: "Study of certain physical properties of technologically important materials using pseudopotential and density function theory
Guide: Prof. B. Y. Thakore (2012).

7. Name of the candidate: Punitkumar H. Suthar
Title of Thesis: Study of certain physical properties of some alkaline earth metals, transition metals, their binary alloys and bulk metallic glasses using pseudopotential theory
Guide: Prof. B. Y. Thakore (2012).
8. Name of the candidate: Mayur M. Patel
Title of Thesis: Application of well characterized \bar{e} – beam evaporated wse2 thin films in Schottky barrier diodes
Guide: Prof. K. D. Patel (2012).
9. Name of the candidate: Sandip R. Unadkat
Title of Thesis: Growth and Characterization of Germanium monosulphoselenide mixed single crystals using chemical vapour transport technique
Guide: Prof G. K. Solanki (2012).
10. Name of the candidate: Ms. Bindiya H. Soni
Title of Thesis: Preparation, characterization of ZnO and Mn doped ZnO nanostructures.
Guide: Prof. M.P. Deshpande (2013).

Department of Statistics

- Two students have been awarded Ph.D. degree during 2012-2013
- One student has been registered for Ph.D.

Annexure –IV**The details of course structure:**

Sardar Patel University, Vallabh Vidyanagar
Course Structure (Ist to IVth Semesters), M.Sc. Applied Science
Choice Based Credit System (CBCS)
Biomedical Science & Technology

Course Code	Course Title	Teaching Scheme (Hours per Week)					Evaluation (Marks)		
		L	S	P	Total Hrs.	Total Credits	Int.	Ext.	Total
FIRST SEMESTER (650 Marks)									
PET01CAS01	Elements of Physical Sciences	3	1	-	3	4	30	70	100
PET01CAS02	Elements of Chemical Sciences	3	1	-	3	4	30	70	100
PET01CAS03	Elements of Biological Sciences	3	1	-	3	4	30	70	100
PET01EAS01	Introduction to Finite Elemental Methods and Biochemical Calculations	3	1	-	3	4	30	70	100
PET01EAS02	Applied Statistics & Analysis	3	1	-	3	4	30	70	100
PET01EAS03	Earth, Earth Materials and Solar System	3	1	-	3	4	30	70	100
PET01CAS04	Computational Laboratory	-	-	12	12	4	30	70	100
PET01CAS05	Practicals in Physical, Chemical & Biological sciences	-	-	12	12	4	30	70	100
PET01CAS06	Comprehensive Viva	-	-	-	-	1	-	50	50
SECOND SEMESTER (650 Marks)									
PET02CAS01	Materials Synthesis, Properties & Selection	3	1	-	3	4	30	70	100
PET02CAS02	Environmental Science, Health & Safety	3	1	-	3	4	30	70	100
PET02CAS03	Characterization Techniques	3	1	-	3	4	30	70	100
PET02EAS01	Molecular Biology & Genetics	3	1	-	3	4	30	70	100
PET02EAS02	CAD-CAM/Instrumentation	3	1	-	3	4	30	70	100
PET02EAS03	Environmental, Ocean and Atmosphere Science	3	1	-	3	4	30	70	100
PET02CAS04	Experimental Methods-I	-	-	12	12	4	30	70	100
PET02CAS05	Experimental Methods-II	-	-	12	12	4	30	70	100
PET02CAS06	Comprehensive Viva	-	-	-	-	1	-	50	50

THIRD SEMESTER (650 Marks)									
PET03CBM01	Spectral Analysis and Medical Imaging	3	1	-	3	4	30	70	100
PET03CBM02	Biomaterials and Bionanotechnology	3	1	-	3	4	30	70	100
PET03CBM03	Advanced Biomaterials and Solid State Pharmaceutics	3	1	-	3	4	30	70	100
PET03EBM01	Biomedical Fluid Dynamics and Drug Delivery	3	1	-	3	4	30	70	100
PET03EBM02	Medical Sensors Diagnostics and Clinical Pharmacology	3	1	-	3	4	30	70	100
PET03CBM04	Laboratory Work	-	-	12	12	4	30	70	100
PET03CBM05	Laboratory Work	-	-	12	12	4	30	70	100
PET03CBM06	Comprehensive Viva	-	-	-	-	1	-	50	50
FOURTH SEMESTER (650 Marks)									
PET04CBM01	Project Work					25	195	455	650

L= Lectures, S=Seminar, P=Practicals

Credits (per semester*)

Theory + Seminar : 16

Practical : 08

Comprehensive Viva : 01

Total : 25

*except for IV semester

Sardar Patel University, Vallabh Vidyanagar
Course Structure (Ist to IVth Semesters), M.Sc. Applied Science
Choice Based Credit System (CBCS)
Defence Science & Technology

Course Code	Course Title	Teaching Scheme (Hours per Week)					Evaluation (Marks)		
		L	S	P	Total Hrs.	Total Credits	Int.	Ext.	Total
FIRST SEMESTER (650 Marks)									
PET01CAS01	Elements of Physical Sciences	3	1	-	3	4	30	70	100
PET01CAS02	Elements of Chemical Sciences	3	1	-	3	4	30	70	100
PET01CAS03	Elements of Biological Sciences	3	1	-	3	4	30	70	100
PET01EAS01	Introduction to Finite Elemental Methods and Biochemical Calculations	3	1	-	3	4	30	70	100
PET01EAS02	Applied Statistics & Analysis	3	1	-	3	4	30	70	100
PET01EAS03	Earth, Earth Materials and Solar System	3	1	-	3	4	30	70	100
PET01CAS04	Computational Laboratory	-	-	12	12	4	30	70	100
PET01CAS05	Practicals in Physical, Chemical & Biological sciences	-	-	12	12	4	30	70	100
PET01CAS06	Comprehensive Viva	-	-	-	-	1	-	50	50
SECOND SEMESTER (650 Marks)									
PET02CAS01	Materials Synthesis, Properties & Selection	3	1	-	3	4	30	70	100
PET02CAS02	Environmental Science, Health & Safety	3	1	-	3	4	30	70	100
PET02CAS03	Characterization Techniques	3	1	-	3	4	30	70	100
PET02EAS01	Molecular Biology & Genetics	3	1	-	3	4	30	70	100
PET02EAS02	CAD-CAM/Instrumentation	3	1	-	3	4	30	70	100
PET02EAS03	Environmental, Ocean and Atmosphere Science	3	1	-	3	4	30	70	100
PET02CAS04	Experimental Methods-I	-	-	12	12	4	30	70	100
PET02CAS05	Experimental Methods-II	-	-	12	12	4	30	70	100
PET02CAS06	Comprehensive Viva	-	-	-	-	1	-	50	50

THIRD SEMESTER (650 Marks)									
PET03CDT01	Composite Materials and its Applications to Defence	3	1	-	3	4	30	70	100
PET03CDT02	Sensors & Devices	3	1	-	3	4	30	70	100
PET03CDT03	Antenna Systems & Radars	3	1	-	3	4	30	70	100
PET03EDT01	Design of Engineering Systems	3	1	-	3	4	30	70	100
PET03EDT02	Automation & Control	3	1	-	3	4	30	70	100
PET03CDT04	Technologies Innovation & Engineering	-	-	12	12	4	30	70	100
PET03CDT05	Robotics & Manufacturing Systems	-	-	12	12	4	30	70	100
PET03CDT06	Comprehensive Viva	-	-	-	-	1	-	50	50
FOURTH SEMESTER (650 Marks)									
PET04CDT01	Project Work					25	195	455	650

L= Lectures, S=Seminar, P=Practicals

Credits (per semester*)

Theory + Seminar : 16

Practical : 08

Comprehensive Viva : 01

Total : 25

*except for IV semester

Sardar Patel University, Vallabh Vidyanagar
Course Structure (1st to IVth Semesters), M.Sc. Applied Science
Choice Based Credit System (CBCS)
Earth System Science

Course Code	Course Title	Teaching Scheme (Hours per Week)					Evaluation (Marks)		
		L	S	P	Total Hrs.	Total Credits	Int.	Ext.	Total
FIRST SEMESTER (650 Marks)									
PET01CAS01	Elements of Physical Sciences	3	1	-	3	4	30	70	100
PET01CAS02	Elements of Chemical Sciences	3	1	-	3	4	30	70	100
PET01CAS03	Elements of Biological Sciences	3	1	-	3	4	30	70	100
PET01EAS01	Introduction to Finite Elemental Methods and Biochemical Calculations	3	1	-	3	4	30	70	100
PET01EAS02	Applied Statistics & Analysis	3	1	-	3	4	30	70	100
PET01EAS03	Earth, Earth Materials and Solar System	3	1	-	3	4	30	70	100
PET01CAS04	Computational Laboratory	-	-	12	12	4	30	70	100
PET01CAS05	Practicals in Physical, Chemical & Biological sciences	-	-	12	12	4	30	70	100
PET01CAS06	Comprehensive Viva	-	-	-	-	1	-	50	50
SECOND SEMESTER (650 Marks)									
PET02CAS01	Materials Synthesis, Properties & Selection	3	1	-	3	4	30	70	100
PET02CAS02	Environmental Science, Health & Safety	3	1	-	3	4	30	70	100
PET02CAS03	Characterization Techniques	3	1	-	3	4	30	70	100
PET02EAS01	Molecular Biology & Genetics	3	1	-	3	4	30	70	100
PET02EAS02	CAD-CAM/Instrumentation	3	1	-	3	4	30	70	100
PET02EAS03	Environmental, Ocean and Atmosphere Science	3	1	-	3	4	30	70	100
PET02CAS04	Experimental Methods-I	-	-	12	12	4	30	70	100
PET02CAS05	Experimental Methods-II	-	-	12	12	4	30	70	100
PET02CAS06	Comprehensive Viva	-	-	-	-	1	-	50	50

THIRD SEMESTER (650 Marks)									
PET03CESS1	Geology-I (Mineralogy, Petrology and Structural Geology)	3	1	-	3	4	30	70	100
PET03CESS2	Geology-II (Palentology, Sedimentology and Stratigraphy)	3	1	-	3	4	30	70	100
PET03CESS3	Applied Geology (Remote Sensing, Engineering Geology, Mineral Exploration and Hydrogeology)	3	1	-	3	4	30	70	100
PET03EESS1	Geophysics	3	1	-	3	4	30	70	100
PET03EESS2	Geochemistry	3	1	-	3	4	30	70	100
PET03CESS4	Laboratory Work	-	-	12	12	4	30	70	100
PET03CESS5	Laboratory Work	-	-	12	12	4	30	70	100
PET03CESS6	Comprehensive Viva	-	-	-	-	1	-	50	50
FOURTH SEMESTER (650 Marks)									
PET04CESS1	Project Work					25	195	455	650

L= Lectures, S=Seminar, P=Practicals

Credits (per semester*)

Theory + Seminar : 16

Practical : 08

Comprehensive Viva : 01

Total : 25

*except for IV semester