

**Evaluative Report of the Department**  
*Please provide data for last 5 years*

1. Name of the Department : **School of Chemistry and Biochemistry**
2. Year of establishment **2002**
3. Is the Department part of a School/Faculty of the university? **YES**
4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)

Title	Field of Specialization	Sanctioned Intake	Duration (Years)	Year of Starting
Under-Graduate Program	na			
Post-Graduate Programs	M. Sc. Chemistry	30	2 Years	2007
Research Programs	Ph. D. Chemistry			2002

5. Interdisciplinary programmes and departments involved: **M.Sc. Biochemistry, SCBC and DBT**
6. Courses in collaboration with other universities, industries, foreign institutions, etc. **NA**
7. Details of programmes discontinued, if any, with reasons: **Integrated B.Sc.-M.Sc.**
8. Examination System: Annual/Semester/Trimester/Choice Based Credit System: **Semester**
9. Participation of the department in the courses offered by other departments: **NA**
10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (Including CAS & MPS)
Professor	0	2	2
Associate Professor	1	5	5
Assistant Professor	2	5	5
Others (DSt Inspire)		0	

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No of years of Experience	
Dr. Susheel Mittal	Ph.D.	Senior Professor	Chemical Sensors Environmental Chemistry Waste Management	27	8
Dr. Satnam Singh	Ph.D.	Associate Professor	Organic Chemistry	18	3
Dr. Bonamali Pal	Ph.D.	Associate Professor	Physical chemistry/Nanomaterial/Photocatalysis	15.5 years	awarded 1 submitted - 2
Dr. Ranjana Prakash	Ph.D.	Associate Professor	Biocatalysis	14 Years	2
Dr. Amjad Ali	Ph.D.	Associate Professor	Biodiesel and heterogeneous catalysts	8	4
Dr. Manmohan Chhibber	Ph.D.	Assistant Professor	Synthetic Organic Chemistry	11	
Dr. Rajesh Kumar	Ph.D.	Assistant Professor	Biophysical and Bioinorganic Chemistry	8 years	One submitted
Dr. Kamaldeep Paul	Ph.D.	Assistant Professor	Organic and Medicinal Chemistry	4 years	
Dr. S. K. Pandey	Ph.D.	Assistant Professor	Organic and Medicinal Chemistry	2 years	
Dr. Vijay Luxami	Ph.D.	Assistant Professor	Supramolecular chemistry	3 yrs	
Dr. Somen Basu	Ph.D.	Assistant Professor	Synthesis & Applications of Nanomaterials	4Yrs	
Dr. Rajendra Singh Dhayal	Ph.D.	Assistant Professor	Organometallic and solar energy	3Yrs	

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors: NA

13. Percentage of classes taken by temporary faculty – programme-wise information: NA

14. Programme-wise Student Teacher Ratio

15. Number of academic support staff (technical) and Administrative staff :

Administrative staff : Sanctioned (01), filled (01) and actual (01)

Academic support staff (technical): Sanctioned (-), filled (01) and actual (01)

16. Research thrust areas as recognized by major funding agencies :

**Nanotechnology, Biodiesel, Chemical Sensors, Pharmaceutical Chemistry, Organic synthesis, Biophysical chemistry and organometallic chemistry**

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise. - **List for last 5 years**

S. No.	Principal Investigator	Co- Principal Investigator	Project Title	Duration	Amount (Lakh)	Funding Agency
1.	Susheel Mittal	Manmohan Chhibber, SC BC, TU	Design and Development of Diphenylether based Supramolecules for Electroanalytical Probes	2012-2015	22.8	BRNS (DAE)
2.	Susheel Mittal	Ravinder Agarwal EIED, TUA.Chander RGMC	Particulate matter dose relationship with lung function efficiency of children during agriculturalcrop residue burning episodes	2012-2015	40.0	ICMR
3.	Susheel Mittal	Dr. Bead IITM Pune	Modelling Atmospheric Pollution and Networking (MAPAN) - Patiala (MAPAN - 08)	2013-17	22.3	MES
4.	Bonamali Pal		Size and shape dependent photocatalyticactivity of silica-coated metal (M)-Zinc sulfide (ZnS) nanocomposites for nitroaromatics reduction	2012-2015	14.1	UGC
5.	Bonamali Pal		"Study of surface charge and Zeta potential of coinage metal nanoparticles for their optimum stability and catalytic activity"	2013-2016	15.0	CSIR
6.	Dr.RanjanaPrakash		Fungus mediated biodiesel generation from waste edible oils	2012-2015	18.0	CSIR
7.	Dr.RanjanaPrakash		Strain improvement of Aspergillus sp. for enhanced trans esterification of waste cooking and non-edible oils using induced mutation by $\gamma$ irradiation	2011-2014	21.2	BRNS
8.	Manmohan Chhibber		Synthesis and characterization of diphenyl ether/analogue for their antibacterial activity	2012-2015	6.2	UGC
9.	Rajesh Kumar		pH-Dependent stability and microsecond folding kinetics of horse ferrocycytochrome-C.	2012-2015	11.4	UGC
10.	Kamaldeep Paul		Hybrids of Substituted Benzimidazole and Quinazoline /purine/pyrazolo pyrimidine analogous as Antituberculosis and Antimalarial activity.	2012-2013	5.5	CSIR

11.	Kamaldeep Paul		Coupling of Substituted Quinazoline /Xanthine and Purine/Pyrimidine/ Benzimidazole : A Novel Scaffold for Kinase Inhibitors	2012-2015	11.08	UGC
12.	Kamaldeep Paul	Vijay Luxami SCBC, TU	Heterocyclic Substituted Quinazoline and Pyrazolo[3,4-d]pyrimidine Derivatives: Novel Scaffold for Aurora Kinase Inhibitors	2012-2015	21.5	CSIR
13.	Kamaldeep Paul		Novel Scaffolds of P-glycoprotein Modulators to Overcome Multidrug Resistance in Cancer cells	2011-2014	22.0	DST
14.	Satyendra K. Pandey		The Total Synthesis of the Antimalarial Natural Products, Flinderoles	2013-2016	22.0	DST
15.	Satyendra K. Pandey		Concise and Protecting Group-Free Synthesis of 2-Alkyl-Substituted Tetrahydroquinolines	2013-2015	6.0	UGC
16.	Vijay Luxami		ESIPT based Chromophores: Applications for Sensing and White light emitting devices	2012-2017	35.0	DST

## 2. List of completed sponsored projects

S.No.	Principal Investigator	Co- Principal Investigator	Project Title	Duration	Amount (Lakh)	Funding Agency
1.	Satnam Singh		Polycyclic Aromatic hydrocarbons in tea and coffee	2010-2013	8.0	UGC
2.	Satnam Singh	Amjad Ali	Heterogeneous catalysts for biodiesel production	2010-2013	15.0	CSIR
3.	Bonamali Pal		Preparation of Core-Shell Structure of Silica (SiO <sub>2</sub> )-Coated Cadmium Sulfide (CdS) Nanocomposites by Size-Selective Photoetching and Study of Photocatalytic Organic Syntheses Reactions.	2009-2013	41.80	DST
4.	Dr. N. TejoPrakash	Dr.Ranjana Prakash	Molecular mechanism of selenium reduction by microorganisms and its application to development of selenium recovery systems	2011-2013	4.9	DST-JSPS India
5.	Amjad Ali		Zirconia supported solid catalyst for simultaneous transesterification and esterification of high free fatty acid containing triglycerides	2011-2014	14.0	CSIR
6.	Amjad Ali		Alkali metal supported transition metal oxides as solid catalyst for the transesterification of jatropa and karanja oils	2012-2014	19.0	DRDO

7.	Rajesh Kumar		Sugars and salts-induced folding and stabilization of base-denatured horse cytochrome c	2012-2014	31	ICMR
8.	Rajesh Kumar		Kinetic and thermodynamics studies on the effect of chaotropic and kosmotropic cosolvents on horse ferrocycytochrome c	2011-2014	21.3	CSIR
9.	Rajesh Kumar		The Kinetics and Mechanism of Iron Release from Transferrins	2010-2013	18.2	DST
10.	Kamaldeep Paul		Hybrids of Substituted Benzimidazole and Quinazoline /purine/pyrazolo pyrimidine analogous as Antituberculosis and Antimalarial activity.	2012-2013	5.5	CSIR
11.	Kamaldeep Paul		Novel Scaffolds of P-glycoprotein Modulators to Overcome Multidrug Resistance in Cancer cells	2011-2014	22.0	DST
12.	Vijay Luxami		Heterocycles based FRET- dyads for Chemionics and Bioionics	2011-2014	27.0	DST

18. Inter-institutional collaborative projects and associated grants received

a) National collaboration

b) International collaboration

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

DST-FIST program 2010 Rs 86.00 Lacs (on 50:50 basis)

20. Research facility / centre with

- state recognition
- national recognition
- international recognition

S. No.	Name of Facility	Model	Make
1.	Atomic Absorption Spectrophotometer (AAS)	AAS 4129	ECIL, India
2.	Argon Ion Laser	Stellar-Pro-L Select 300	Modu-Laser, USA
3.	ELISA Plate Reader	Power Wave XS2	BioTek
4.	Fluorescence Spectrophotometer	LS 55	PerkinElmer
5.	Flame Photometer	CL 378	Elico, India
6.	Gas Chromatograph (GC)	5765	Nucon, India
7.	High Performance Liquid Chromatography (HPLC)	1120 Compact LC	Aglient
8.	(FT)- Infra Red Spectrophotometer (FTIR)	Nicolet iS10	Thermo Scientific
9.	Incubator with Shaker		Metrex Scientific Inst
10.	Magnetic Susceptibility Balance		Sherwood Scientific, UK
11.	Nuclear Magnetic Resonance (NMR)	JNM ECS 400	JEOL, Japan

S. No.	Name of Facility	Model	Make
12.	Potentiostat	Auto Lab 12	Eco-Chemie
13.	Potentiostat	DY2300	Digi-Ivy, USA
14.	Polymer Making Film		Spectra Lab, Thane
15.	Surface area Analyser	Smart Sorb 92/93	Smart Instruments Co.
16.	UV-Vis Spectrophotometer	Specord 205	Analytik Jena
17.	GC-MS	--	Brucker

21. Special research laboratories sponsored by / created by industry or corporate bodies  
NIL

22. Publications: **List for last 5 years**

- Number of papers published in peer reviewed journals (national / international) : 161
- Monographs : NIL
- Chapters in Books : 2
- Citation Index : ~1100
- SNIP : (average of 5 years)
- SJR : (average of 5 years)
- Impact Factor - range / average : 0.06 - 7.00
- h-index : 5-19

**List of research publications in SCI/Impact Factor journals**

	Title of the paper	Name of the Journal with volume, page nos., year	Name of the authors	Impact Factor
1.	Preparation, Surface and Crystal Structure, Band Energetics, Optoelectronic, and Photocatalytic Properties of AuxCd1- xS Nanorods	<i>ChemPlusChem.</i> (2015), DOI: 10.1002/cplu.201402388	Singh, R., Pal, B.	3.24
2.	Shape Dependent Thermal Conductivity of TiO <sub>2</sub> -Deionized Water and Ethylene Glycol Dispersion	<i>Journal of Nanoscience and Nanotechnology,</i> (2015), 3670-3676	Pal, B., Mallick, S.S., Pal, B.	1.33
3.	Tuning the optical and photocatalytic properties of anisotropic ZnS nanostructures for the selective reduction of nitroaromatics	<i>Chemical Engineering Journal,</i> (2015), 200-208	Pal, B., Pal, B.	4.01
4.	Highly dispersed Au, Ag and Cu nanoparticles in mesoporous SBA-15 for highly selective catalytic reduction of nitroaromatics	<i>RSC Advances,</i> (2015), 184-190	Sareen, S., Mutreja, V., Singh, S., Pal, B.	3.7

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
5.	Improved catalytic activity and surface electro-kinetics of bimetallic Au-Ag core-shell nanocomposites	<i>New Journal of Chemistry</i> , (2015), 304-313	Monga, A., Pal, B.	3.4
6.	Influence of Different Reducing Agents on the Ag Nanostructures and Their Electrokinetic and Catalytic Properties	<i>Journal of Nanoscience and Nanotechnology</i> , (2015), 37-53-2760	Rana, S., Pal, B., Kaur, R.	1.33
7.	Homogeneous dispersion of Au nanoparticles into mesoporous SBA-15 exhibiting improved catalytic activity for nitroaromatic reduction	<i>Microporous and Mesoporous Materials</i> , (2015), 219-225	Sareen, S., Mutreja, V., Singh, S., Pal, B.	3.5
8.	Photodegradation of imidacloprid insecticide by ag-deposited titanate nanotubes: A study of intermediates and their reaction pathways	<i>Journal of Agricultural and Food Chemistry</i> , (2014), 12497-12503	Grover, I.S., Singh, S., Pal, B.	3.3
9.	Influence of coinage and platinum group metal co-catalysis for the photocatalytic reduction of m-dinitrobenzene by P25 and rutile TiO <sub>2</sub>	<i>Journal of Molecular Catalysis A: Chemical</i> , (2014), 99-105	Kaur, J., Singh, R., Pal, B.	3.7
10.	Anisotropic CuO nanostructures of different size and shape exhibit thermal conductivity superior than typical bulk powder	<i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> (2014), 282-289	Pal, B., Mallick, S.S., Pal, B.	2.4
11.	Influence of thermal treatment and Au-loading on the growth of versatile crystal phase composition and photocatalytic activity of sodium titanate nanotubes	<i>RSC Advances</i> (2014), 51342-51348	Grover, I.S., Singh, S., Pal, B.	3.7
12.	Influence of CuO Nanostructures on the Thermal Conductivity of DI Water and Ethylene Glycol Based Nanofluids	<i>Particulate Science and Technology: An International Journal</i> (2014), 10.1080/02726351.2014.953647	Pa, B., Pal, B.	0.49

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
13.	100% selective yield of m-nitroaniline by rutile TiO <sub>2</sub> and m-phenylenediamine by P25-TiO <sub>2</sub> during m-dinitrobenzene photoreduction	<i>Catalysis Communications</i> (2014), 25-28	Kaur, J., Pal, B.	3.7
14.	Superior photoactivity and stability of movable CdS (core)-CdO (shell) nanostructures formed in tubular SiO <sub>2</sub> by laser etching of SiO <sub>2</sub> @CdS nanorod	<i>Chemical Engineering Journal</i> (2014), 260-267	Gupta, N., Pal, B.	4.01
15.	Co-catalytic and electrokinetic properties of Au nanostructures dispersed in solvents of varying dipole moments	<i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> (2014), 155-163	Kaur, R., Pal, B.	2.4
16.	Sensitivity of the Multiple Functional Moieties of Amino Acids for the Self-Assembly of Au Nanoparticles on Different Physicochemical Properties	<i>Journal of Cluster Science</i> (2014), 1085-1098	Monga, A., Pal, B.	1.14
17.	Improved surface properties and catalytic activity of anisotropic shapes of photoetched Au nanostructures formed by variable energy laser exposure	<i>Journal of Molecular Catalysis A: Chemical</i> (2014), 7-15	Kaur, R., Pal, B.	3.7
18.	Cu nanostructures of various shapes and sizes as superior catalysts for nitro-aromatic reduction and co-catalyst for Cu/TiO <sub>2</sub> photocatalysis	<i>Applied Catalysis A: General</i> , (2014), 28-36	Kaur, R., Pal, B.	3.65
19.	Core-shell structure of metal loaded CdS-SiO <sub>2</sub> hybrid nanocomposites for complete photomineralization of methyl orange by visible light	<i>Journal of Molecular Catalysis A: Chemical</i> , (2014), 158-167	Gupta, N., Pal, B.	3.7
20.	Facile Synthesis of Anisotropic Au Nanostructures by Laser Irradiation and Study of Their Optical and Electrokinetic Properties	<i>Particulate Science and Technology</i> , (2014),	Pal, B., Kaur, R.	0.49



	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
21.	Influence of Au Photodeposition and Doping in CdS Nanorods: Optical and Photocatalytic Study	<i>Particulate Science and Technology</i> , (2014), 10.1080/02726351.2014.944634	Singh, R., Pal, B.	0.49
22.	Co-catalysis effect of different morphological facets of as prepared Ag nanostructures for the photocatalytic oxidation reaction by Ag-TiO <sub>2</sub> aqueous slurry	<i>Materials Chemistry and Physics</i> (2013), 393-399	Kaur, R., Pal, B.	2.15
23.	Fabrication of hollow SiO <sub>2</sub> and Au (core)-SiO <sub>2</sub> (shell) nanostructures of different shapes by CdS template dissolution	<i>Journal of Sol-Gel Science and Technology</i> , (2013), 284-293	Gupta, N., Badhwar, N., Pal, B.	1.64
24.	Highly porous ZnS microspheres for superior photoactivity after Au and Pt deposition and thermal treatment	<i>Materials Research Bulletin</i> , (2013), 4867-4871	Singla, S., Pal, B.	2.2
25.	Superior photoluminescence and photocatalytic activity of CdS (core)-SiO <sub>2</sub> (shell) nanostructures obtained by CdS photoetching and Au deposition	<i>Journal of Nanoscience and Nanotechnology</i> (2013), 5069-5079	Gupta, N., Pal, B.	1.33
26.	Selective photo-reduction of p-nitrophenol to p-aminophenol by au deposited CdS nanostructures of different shapes having large surface area	<i>Journal of Nanoscience and Nanotechnology</i> (2013), 4917-4924	Gupta, N., Pal, B.	1.33
27.	The preparation, surface structure, zeta potential, surface charge density and photocatalytic activity of TiO <sub>2</sub> nanostructures of different shapes	<i>Applied Surface Science</i> (2013), 366-372	Grover, I.S., Singh, S., Pal, B.	2.54
28.	Highly enhanced photocatalytic activity of Au nanorod-CdS nanorod heterocomposites	<i>Journal of Molecular Catalysis A: Chemical</i> (2013), 246-254	Singh, R., Pal, B.	3.7
29.	Priority PAHs in orthodox black tea during manufacturing process	<i>Environmental Monitoring and Assessment</i> (2013), 6291-6284	Grover, I.S., Singh, S., Pal, B.	1.55

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
30.	Polycyclic aromatic hydrocarbons in some grounded coffee brands	<i>Environmental Monitoring and Assessment</i> (2013), 6459-6463	Grover, I.S., Sharma, R., Singh, S., Pal, B.	1.55
31.	Photocatalytic degradation of N-heterocyclic aromatics-effects of number and position of nitrogen atoms in the ring	<i>Environmental Science and Pollution Research</i> (2013), 3956-3964	Kaur, J., Pal, B.	2.75
32.	Photochemical fabrication of transition metal nanoparticles using cds template and their co-catalysis effects for tio2 photocatalysis	<i>International Journal of Nanoscience</i> (2013),	Badhwar, N., Gupta, N., Pal, B.	0.15
33.	Fine-tuning the photoluminescence and photocatalytic properties of CdS nanorods of varying dimensions	<i>Materials Research Bulletin</i> (2013), 1403-1410	Singh, R., Pal, B.	2.2
34.	Study of excited charge carrier's lifetime for the observed photoluminescence and photocatalytic activity of CdS nanostructures of different shapes	<i>Journal of Molecular Catalysis A: Chemical</i> (2013), 77-85	Singh, R., Pal, B.	3.7
35.	Photocatalytic activity of transition metal and metal ions impregnated TiO <sub>2</sub> nanostructures for iodide oxidation to iodine formation	<i>Journal of Molecular Catalysis A: Chemical</i> , (2013), 48-55	Gupta, N., Pal, B.	3.7
36.	Enhanced photocatalytic activity of coinage metal-cadmium sulfide nanorod composites under sun light irradiation	<i>Advanced Materials Research</i> (2013), 189-192	Singh, R., Pal, B.	--
37.	Metal ion-TiO <sub>2</sub> nanocomposites for the selective photooxidation of benzene to phenol and cycloalkanol to cycloalkanone	<i>Journal of Experimental Nanoscience</i> (2013), 148-160	Gupta, N., Bansal, P., Pal, B.	1.15
38.	Size and shape dependent attachments of Au nanostructures to TiO <sub>2</sub> for optimum reactivity of Au-TiO <sub>2</sub> photocatalysis	<i>Journal of Molecular Catalysis A: Chemical</i> , (2012), 39-43	Kaur, R., Pal, B.	3.7

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
39.	The synthesis, structure, optical and photocatalytic properties of silica-coated cadmium sulfide nanocomposites of different shapes	<i>Journal of Colloid and Interface Science</i> , (2012), 250-256	Gupta, N., Pal, B.	3.9
40.	Rapid photokilling of gram-negative Escherichia coli bacteria by platinum dispersed titania nanocomposite films	<i>Materials Chemistry and Physics</i> (2012), 21-27	Pal, B., Singh, I., Angrish, K., Aminedi, R., Das, N.	1.5
41.	Superior photodecomposition of pyrene by metal ion-loaded TiO <sub>2</sub> catalyst under UV light irradiation	<i>Environmental Science and Pollution Research</i> (2012), 250-256	Rani, M., Gupta, N., Pal, B.	1.4
42.	Sodium impregnated zinc oxide as a solid catalyst for biodiesel preparation from a variety of triglycerides	<i>Energy Sources, Part A: Recovery, Utilization and Environmental Effects</i> , (2014), 1999-2008	Ali, A., Khullar, P., Kumar, D.	0.81
43.	Potassium ion impregnated calcium oxide as a Nanocrystalline solid catalyst for Biodiesel production from waste cotton seed oil	<i>Energy Sources, Part A: Recovery, Utilization and Environmental Effects</i> , (2014), 1093-1102	Kumar, D., Ali, A.	0.81
44.	Ethanolysis of waste cottonseed oil over lithium impregnated calcium oxide: Kinetics and reusability studies	<i>Renewable Energy</i> (2014), 272-279	Kaur, M., Ali, A.	2.98
45.	Kinetics and reusability of Zr/CaO as heterogeneous catalyst for the ethanolysis and methanolysis of Jatropha crucas oil	<i>Fuel Processing Technology</i> , (2014), 173-184	Kaur, N., Ali, A.	2.81
46.	Potassium impregnated nanocrystalline mixed oxides of La and Mg as heterogeneous catalysts for transesterification	<i>Renewable Energy</i> (2014), 226-233	Mutreja, V., Singh, S., Ali, A.	2.98
47.	Lithium zirconate as solid catalyst for simultaneous esterification and transesterification of low quality triglycerides	<i>Applied Catalysis A: General</i> (2014), 193-202	Kaur, N., Ali, A.	2.5

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
48.	Potassium fluoride impregnated CaO/NiO: An efficient heterogeneous catalyst for transesterification of waste cottonseed oil	<i>European Journal of Lipid Science and Technology</i> (2014), 80-88	Kaur, M., Ali, A.	2.26
49.	Removal of lead (II) from synthetic and batteries wastewater using agricultural residues in batch/column mode	<i>International Journal of Environmental Science and Technology</i> , (2014), 1759-1770	Singh, J., Ali, A., Prakash, V.	1.80
50.	Application of Acacia karroo charcoal for desalinating Ni(II) and Zn(II) from aqueous solutions through batch mode	<i>Journal of Water Reuse and Desalination</i> , (2013), 268-276	Singh, J., Sharma, R., Ali, A.	1.02
51.	Transesterification of low-quality triglycerides over a Zn/CaO heterogeneous catalyst: Kinetics and reusability studies	<i>Energy and Fuels</i> , (2013), 3758-3768	Kumar, D., Ali, A.	2.72
52.	Removal of Ni <sup>2+</sup> , Cu <sup>2+</sup> and Zn <sup>2+</sup> using different agricultural residues: Kinetics, isotherm modeling and mechanism via chemical blocking	<i>Asian Journal of Chemistry</i> , (2013), 6377-6386	Singh, J., Ali, A., Kumar, R.	1.5
53.	Lithium ions-supported magnesium oxide as nano-sized solid catalyst for biodiesel preparation from mutton fat	<i>Energy Sources, Part A: Recovery, Utilization and Environmental Effects</i> (2013), 184-192	Kaur, N., Ali, A.	0.81
54.	Effect of metal ions on the hydrolytic and transesterification activities of <i>Candida rugosa</i> Lipase	<i>Journal of Oleo Science</i> , (2013), 919-924	Katiyar, M., Ali, A.	1.20
55.	Sodium aluminate as catalyst for transesterification of waste mutton fat	<i>Journal of Oleo Science</i> (2012), 665-669	Mutreja, V., Singh, S., Ali, A.	1.20
56.	Immobilization of <i>Candida rugosa</i> lipase on MCM-41 for the transesterification of cotton seed oil	<i>Journal of Oleo Science</i> , (2012), 469-475	Katiyar, M., Ali, A.	1.20
57.	Nanocrystalline K-CaO for the transesterification of a variety of feedstocks: Structure, kinetics and catalytic properties	<i>Biomass and Bioenergy</i> . (2012), 459-468	Kumar, D., Ali, A.	--

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
58.	Kinetics, thermodynamics and breakthrough studies of biosorption of Cr (VI) using arachis hypogea shell powder	<i>Research Journal of Chemistry and Environment</i> , (2012), 69-79	Singh, J., Ali, A.	--
59.	Lithium ion impregnated calcium oxide as nano catalyst for the biodiesel production from karanja and jatropa oils	<i>Renewable Energy</i> (2011), 2866-2871	Kaur, M., Ali, A.	2.98
60.	Biodiesel from mutton fat using KOH impregnated MgO as heterogeneous catalysts	<i>Renewable Energy</i> , (2011), 2553-2258	Mutreja, V., Singh, S., Ali, A.	2.98
61.	Emulsification and hydrolysis of oil by syncephalastrum racemosum	<i>Defence Science Journal</i> , (2010), 251-254	Mathur, C., Prakash, R., Ali, A., Kaur, J., Cameotra, S.S., Prakash, T.N.	--
62.	Nanocrystalline lithium ion impregnated calcium oxide as heterogeneous catalyst for transesterification of high moisture containing cotton seed oil	<i>Energy and Fuels</i> , (2010), 2091-2097	Kumar, D., Ali, A.	2.72
63.	Voltammetry of nanoparticle-coupled imine linkage-based receptors for sensing of Al(III) and Co(II) ions	<i>Journal of Applied Electrochemistry</i> , (2014), 1239-1251	Mittal, S.K., Sharma, R., Sharma, M., Singh, N., Singh, J., Kaur, N., Chhibber, M.	--
64.	Effect of combustion variables on PAHs emission from incineration of cellulose waste filters from acrylic industry	<i>Environmental Monitoring and Assessment</i> , (2010), 591-598	Prakash, V., Singh, S.	--
65.	"Influence of drying of biosludge on organochlorine compounds from pulp and paper industry"	<i>J. Environ Bio .</i> , 33 (2012) 85- 88.	S. Gupta, M. Purwar, S.K. Chakrabarti and Satnam Singh ,	1.2
66.	"PAHs in some brands of tea"	<i>Environ Monit Assess.</i> , 177 (2011) 35-38.	Satnam Singh , Amit Vashishth, Vishal,	1.2
67.	"Effect of Varying Load of Organochlorine Compounds on Activated Sludge Processes"	<i>IPPTA J.</i> , 23 (2011) 175-179.	Gupta, S.K. Chakrabarti, Singh Satnam and R. Varadhan,	1.5

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
68.	"Effect of ozonation on waste activated sludge of Pulp and Paper industry	<i>Water Sci. Technol.</i> , 62 (2010) 1676-81.	S. Gupta, S.K. Chakrabarti, Satnam Singh ,	1.5
69.	"Effect of combustion variables on PAHs emission from incineration of cellulose waste filters from Acrylic industry"	<i>Environ Monit Assess</i> 163 (2010) 591-598.	Vinit Prakash, Satnam Singh	--
70.	Selenium uptake and associated anti-oxidant properties in <i>Pleurotus fossulatus</i> cultivated on wheat straw from seleniferous fields	<i>Acta Alimentaria</i> , (2014), 280-287	Bhatia, P., Bansal, C., Prakash, R., Nagaraja, T.P.	--
71.	Selenium bioaccessibility and speciation in biofortified <i>Pleurotus</i> mushrooms grown on selenium-rich agricultural residues	<i>Food Chemistry</i> , (2013), 225-230	Bhatia, P., Aureli, F., D'Amato, M., Prakash, R., Cameotra, S.S., Nagaraja, T.P., Cubadda, F.	--
72.	New proton nuclear magnetic resonance-based derivation for quantification of alkyl esters generated using biocatalysis	<i>Energy and Fuels</i> , (2013), 2660-2664	Sharma, A., Verma, A., Luxami, V., Melo, J.S., D'Souza, S.F., Prakash, N.T., Prakash, R.	2.72
73.	Transesterification of triglycerides by dried biomass of <i>Aspergillus</i> sp	<i>Journal of Oleo Science</i> , (2013), 297-303	Aulakh, S.S., Prakash, N.T., Prakash, R.	1.2
74.	Selenium uptake by edible oyster mushrooms ( <i>Pleurotus</i> sp.) from selenium-hyperaccumulated wheat straw	<i>Journal of Nutritional Science and Vitaminology</i> , , (2013), 69-72	Bhatia, P., Prakash, R., Prakash, N.T.	1.5
75.	Selenium content in seed, oil and oil cake of Se hyperaccumulated <i>Brassica juncea</i> (Indian mustard) cultivated in a seleniferous region of India	<i>Food Chemistry</i> , , (2012), 401-404	Jaiswal, S.K., Prakash, R., Acharya, R., Reddy, A.V.R., Tejo Prakash, N.	--
76.	Bioaccessibility of selenium from Se-rich food grains of the seleniferous region of Punjab, India as analyzed by instrumental neutron activation analysis	<i>CYTA - Journal of Food</i> , , (2012), 160-164	Jaiswal, S.K., Prakash, R., Acharya, R., Nathaniel, T.N., Reddy, A.V.R., Tejo Prakash, N.	

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
77.	Whole cell catalyzed esterification of fatty acids to biodiesel using <i>Aspergillus</i> sp.	<i>Biocatalysis and Biotransformation</i> , (2011), 354-358	Aulakh, S.S., Chhibber, M., Mantri, R., Prakash, R.	1.1
78.	Transesterification of used edible and non-edible oils to alkyl esters by <i>Aspergillus</i> sp. as a whole cell catalyst	<i>Journal of Basic Microbiology</i> , (2011), 607-613	Prakash, R., Aulakh, S.S.	1.5
79.	Effect of frying time on free fatty acid generation and esterification rate in <i>Aspergillus</i> sp.-catalyzed transesterification of cottonseed oil	<i>Biocatalysis and Biotransformation</i> , (2010), 403-407	Prakash, R., Aulakh, S.S., Kalra, R.	--
80.	Selenium fortification and pro/anti oxidant responses in <i>Allium cepa</i> (onion) cultivated in Se supplemented soils	<i>Experimental Agriculture</i> , (2010), 531-540	Prakash, N.T., Sharma, N., Prakash, R., Nathaniel, T.N., Acharya, R., Reddy, A.V.R.	--
81.	Removal of selenium from se enriched natural soils by a consortium of <i>Bacillus</i> isolates	<i>Bulletin of Environmental Contamination and Toxicology</i> , (2010), 214-218	Prakash, N.T., Sharma, N., Prakash, R., Acharya, R.	--
82.	Emulsification and hydrolysis of oil by <i>syncephalastrum racemosum</i>	<i>Defence Science Journal</i> , , (2010), 251-254	Mathur, C., Prakash, R., Ali, A., Kaur, J., Cameotra, S.S., Prakash, T.N.	--
83.	Lipase catalyzed transesterification of cottonseed oil	<i>Journal of Pure and Applied Microbiology</i> , (2010), 367-372	Singh, S., Aggrawal, S., Chhibber, M., Prakash, R.	--
84.	Optimization of medium and process parameters for the production of lipase from an oil-tolerant <i>Aspergillus</i> sp. (RBD-01)	<i>Journal of Basic Microbiology</i> , (2010), 37-42	Aulakh, S.S., Prakash, R.	--
85.	Selenium mobilization by <i>Pseudomonas aeruginosa</i> (SNT-SG1) isolated from seleniferous soils from India	<i>Geomicrobiology Journal</i> , , (2010), 35-42	Gupta, S., Prakash, R., Prakash, N.T., Pearce, C., Patrick, R., Hery, M., Lloyd, J.	--

	Title of the paper	Name of the Journal with volume, page nos., year	Name of the authors	Impact Factor
86.	Aerobic microbial manufacture of nanoscale selenium: Exploiting nature's bio-nanomineralization potential	<i>Biotechnology Letters</i> , (2009), 1857-1862	Prakash, N.T., Sharma, N., Prakash, R., Raina, K.K., Fellowes, J., Pearce, C.I., Lloyd, J.R., Patrick, R.A.D.	--
87.	Profile of selenium in soil and crops in seleniferous area of Punjab, India by neutron activation analysis	<i>Journal of Radioanalytical and Nuclear Chemistry</i> , (2009), 59-62	Sharma, N., Prakash, R., Srivastava, A., Sadana, U.S., Acharya, R., Prakash, N.T., Reddy, A.V.R.	--
88.	Dansyl-antipyrine dyad as fluorescent sensor for Cu <sup>2+</sup> and F <sup>-</sup> : Sequential XNOR logic operation	New J. Chem., 2015, in press	Vijay Luxami, Akul Sen Gupta and Kamaldeep Paul,	3.5
89.	Benzimidazole-Biologically Attractive Scaffold for Protein Kinase Inhibitors,	<i>RSC Adv.</i> , (2015), in press	Prinka Singla, Vijay Luxami and Kamal Deep Paul,	3.7
90.	Palladium catalyzed novel monoarylation and symmetrical/unsymmetrical diarylation of imidazo[1,2 a]pyrazines and their in vitro anticancer activities	<i>RSC Adv.</i> , (2014), 4, 9885-9892	Richa Goel, Vijay Luxami and Kamaldeep Paul,	3.7
91.	Synthesis and in vitro antitumor evaluation of primary amine substituted quinazoline linked benzimidazole	<i>Bioorg. Med. Chem.Lett.</i> , (2014), 24, 624-629.	Kamaldeep Paul, Alka Sharma, Vijay Luxami,	2.6
92.	Synthesis, in vitro evaluation and molecular modelling of naphthalimide analogue as anticancer agents.	<i>Eur. J. Med. Chem.</i> (2013), 68, 352-360.	Meenakshi Verma, Vijay Luxami, Kamaldeep Paul.	2.5
93.	A dual-responsive chromo-fluorescent probe for detection of Zn <sup>2+</sup> and Fe <sup>3+</sup> via two different approaches	<i>RSC Adv.</i> , 2013, 3, 9189.	Vijay Luxami, Renukamal, Kamaldeep Paul and Subodh Kumar	2.7
94.	Synthesis, single crystal and antitumor activities of benzimidazole-quinazoline hybrids	<i>Bioorganic and Med. Chem. Lett.</i> , (2013), 23, 3288.	Alka Sharma, Vijay Luxami and Kamaldeep Paul,	2.4
95.	Pyrophosphate selective fluorescent probe and molecular flip flop.	<i>Dalton Trans.</i> (2013), 42, 3783	Vijay Luxami*, Kamaldeep Paul and In Howa Jeong	2.1



	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
96.	Synthesis of new conjugated coumarin-benzimidazole hybrids and their anticancer activity.	<i>Bioorganic &amp; Med. Chem. Lett.</i> , (2013), 23, 3667.	Kamaldeep Paul, Shweta Bindal and Vijay Luxami,	2.5
97.	FRET-based ratiometric detection of Hg <sup>2+</sup> and biothiols using naphthalimide-rhodamine dyads.	<i>Org. Biomol. Chem.</i> , (2012), 10, 8076.	Vijay Luxami, Meenakshi Verma, Richa Rani, Kamaldeep Paul and Subodh Kumar	2.5
98.	ESIPT based dual fluorescent sensor and concentration dependent reconfigurable boolean operators.	<i>RSC Adv.</i> , 2012, 2, 8734	Vijay Luxami and Subodh Kumar	2.7
99.	A differential ICT based molecular probe for multi-ions and multifunction logic circuits.	<i>Dalton Trans.</i> 2012, 41, 4588	Vijay Luxami and Subodh Kumar,	2.2
100.	Chemodosimeters : An approach for estimation of biologically relevant metal ions and anions	<i>Coord. Chem. Rev.</i> 2012, 256, 1992.	Kuljit Kaur, Rajnish Saini, Ashwani Kumar, Vijay Luxami, Navneet Kaur, Prabhpreet Singh and Subodh Kumar,	2.5
101.	"Factor defining the effects of glycine betaine on the thermodynamic stability and internal dynamics of horse cytochrome c",	<i>Biochemistry (ACS)</i> , 53(32) (2014) 5221-5235.	Rishu Jain, Deepak Sharma, Sandeep Kumar, Rajesh Kumar.	3.2
102.	"Electrostatic effects controls the stability and iron release kinetics of ovotransferrin",	<i>J. Biol. Inorg. Chem.</i> , 19(6) (2014) 1009-1024.	Sandeep Kumar, Deepak Sharma, Rajesh Kumar, Rajesh Kumar.	3.2
103.	"Effect of urea and alkylureas on the stability and structural fluctuation of the M80-containing $\beta$ -loop of horse cytochrome c", mvt059 341-354	<i>Biochimica et Biophysica Acta</i> , 1844(3) (2014) 641-655.	Sandeep Kumar, Deepak Sharma, Rajesh Kumar.	3.75
104.	"Guanidine hydrochloride-induced alkali-molten globule model of horse ferrocycytochrome c",	<i>Journal of Biochemistry</i> , 153(2) (2013) 161-177.	Rishu Jain, Sandeep Kaur, Rajesh Kumar.	

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
105.	. "Effects of Alcohols on the Stability and Low-Frequency Local Motions that Control the Slow Changes in Structural Dynamics of Ferrocycytochrome c",	<i>Journal of Biochemistry</i> , 154 (4) 059 (2013) 341-354.	Rishu Jain, Deepak Sharma, Rajesh Kumar	3.1
106.	"Viscosity-Dependent Structural Fluctuation of the M80-Containing O-Loop of Horse Ferrocycytochrome c",	<i>Chemical Physics</i> , 418 (2013) 57-64.	Rajesh Kumar. Rishu Jain, Rajesh Kumar.	2.8
107.	Location and conformation of pantothenate and its derivatives in Mycobacterium tuberculosis pantothenate kinase: insights into enzyme action,	<i>Acta Crystallographica Section D</i> , (2011), D67, 774-783.	Bhaskar Chetnani, Parimal Kumar, K. V. Abhinav, Manmohan Chhibber, A. Surolia, and M. Vijayan;	1.5
108.	"Biodiesel production via ethanolysis of jatropha oil using molybdenum impregnated calcium oxide as solid catalyst"	<i>RSC Advances</i> , 2015, 5, 13285	Navjot Kaur and Amjad Ali	3.7
109.	Lithium zirconate as solid catalyst for simultaneous esterification and transesterification of low quality triglycerides,	<i>Applied catalysis A: General</i> , 2015, 289, 193-202	Navjot Kaur and Amjad Ali,	3.7
110.	BOD exertion and OD600 measurements in presence of heavy metal ions using microbes from dairy wastewater as a seed	<i>Journal of Water Resources and Protection</i> , 2(2010)478-488	SK Mittal and S Goel,	1.18
111.	Impact of seasonal variation on ambient air of an industrial town of Punjab (India)	<i>J Environmental Science &amp; Engineering (USA)</i> 2010	Susheel K Mittal, N Singh and Krunesh Garg	--
112.	Effects of air pollution on respiratory parameters during the wheat-residue burning in Patiala,	<i>Journal of Medical Engineering &amp; Technology</i> , 34(2010) 23-28	R Agarwal, A Awasthi, SK Mittal, N Singh, PK Gupta,	0.527
113.	Characterization Of Atmospheric Aerosols For Organic Tarry Matter And Combustible Matter During Crop Residue Burning And Non-Crop Residue Burning Months In Northwestern Region Of India.	<i>Atmospheric Environment</i> , 44(2010)1292-1300.	N Singh, R Agarwal, A Awasthi, PK Gupta, SK Mittal,	3.465

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
114.	Impact Assessment of Rice Crop Residue Burning on Levels of SPM, SO <sub>2</sub> and NO <sub>2</sub> in ambient air of Patiala city in India, Int	Journal of Env Anal Chemistry, 90(2010)829-843.	NSingh, S K Mittal, RAgarwal, AAwasthi&PK Gupta,	1.162
115.	Effects of agriculture crop residue burning on children and young on PFTs in North West India	Sci. of The Total Environment, 408(2010) 4440-4445.	A Awasthi, N Singh, S Mittal, PK. Gupta and R Agarwal,	3.286
116.	Potentiometric determination of dysprosium(III) ion using zirconium(IV) antimonomolybdate as an electroactive material	<i>J of Anal Chem</i> , 65(2010)1045-1051.	SK Mittal, R Kumar, P. Dogra, HK Sharma	0.747
117.	A Comparative Study of Linked 2, 2'-Dipyridylamine Ligand System as an Ion Selective Electrode for Ag (I) Ions,	<i>Int. J. Electrochem. Sci.</i> , 5 (2010) 1984 – 1995	SK Mittal, PKumar, A Kumar SK LF Lindoy,	3.729
118.	Cerium(III)-Selective Membrane Electrode Based on Dibenzo-24-crown-8 as a Neutral Carrier	<i>E-Journal of Chemistry</i> , 7(2010) 849-855.	SK Mittal, Ashok Kumar S.K and HK Sharm	0.516
119.	Highly Selective Potentiometric Determination of Ag(I) using 1,2,4,5-tetrakis (8-hydroxyquinolinoxy methyl) benzene Based Coated-wire Ion-selective Electrode	<i>Sensor Letters</i> , 9(2011)1390-1397	S.K. Ashok Kumar, SK Mittal, S Kumar	0.819
120.	Study of size and mass distribution of particulate matter due to crop residue burning with seasonal variation in rural area of Punjab, India,	<i>Journal of Environmental Monitoring</i> 13(2011) 1073-1081	A Awasthi R Agarwal, SK Mittal, N Singh, K Singh, PK Gupta	1.81
121.	Systematic Approach for the Determination of Individual Lanthanides using Inexpensive ConductometricTechnique	<i>Analytical Methods</i> ,3(2011)1290-1295.	K Matharu, SK Mittal, A Kumar, SK,	1.036
122.	Modeling impact of solar radiation on site selection for solar PV Power Plants in India	<i>International Journal of Green Energy</i> , 8(2011)486-498	A Jain, R Mehta, SK Mittal,	1.19

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
123.	Chlorella sp. Based biosensor for selective determination of mercury in presence of silver ions	<i>Sensors and Actuators B</i> , 165(2012)48-52	J.Singh, SK Mittal	3.9
124.	Whole cell based amperometric sensor with relative selectivity for zinc ions,	Analytical Methods, 4(2012)1326-1331.	J.Singh, SK Mittal	1.03
125.	Chlorella Modified Glassy Carbon Electrode as Whole Cell Microbial Sensor for Heavy Metal Ions.	<i>Current Analytical Chemistry</i> 8(2012)365-372	SK Mittal, J Singh, Ashok Kumar SK	1.0
126.	Assessment of total coliform removal and leaching of metal ions from sewage sludge-fly ash mixture at different pH and washing conditions	<i>African Journal of Biotechnology</i> , 11(2012)9612-9618.	M.Kharub, A Rajor, SK Mittal	0.57
127.	Neutral Carrier-Based Zinc-Selective Electrode,	<i>Sensor Letters</i> , 10(2012)979-984.	Pawan Kumar, Ashok Kumar SK, Susheel K Mittal,	0.81
128.	Anthrone derivatives as voltammetric sensors for applications in metal ion detection	<i>Sensor Letters</i> , 11(2) 223-236(2012)	SK Mittal, K Kaur, Ashok Kumar SK, S Kumar, A Kumar,	0.819
129.	Effects of exposure to rice-crop residue burning smoke on pulmonary functions and oxygen saturation level of human beings in Patiala (India),	<i>Science of the total Environment</i> , 429(2012)161-166.	R Agarwal, A Awasthi, N Singh, PK Gupta and SK. Mittal,	3.286
130.	Fly ash-Sewage Sludge Mixture as a barrier of heavy metal leaching Research	<i>J of Chemistry and Environment</i> , 16(2012)22-26.	M.Kharub, A Rajor, S.K Mittal,	0.379
131.	Trace Level Detection of Nickel Ions in Chocolate Samples Using Noval N4 Macrocycle Based Potentiometric Sensor	<i>Advanced Science, Engineering and Medicine</i> 5(2013)1-6.	N R Gupta, S K Mittal and S K Sonkar,	--
132.	Optimising the Cost and Performance of Parabolic Trough Solar Plants with Thermal Energy Storage in India,	<i>Environmental Progress &amp; Sustainable Energy (Wiley)</i> (DOI: 10.1002/ep.11660) IF:1.649	AJain, Tuyet Vu, R Mehta, S K Mittal	

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
133.	Epidemiological study of healthy people to investigate the effects of agriculture crop residue burning on their PFTS in Patiala (India)	International Journal of Environmental Health Research (Taylor & Francis) DOI:10.1080/09603123.2012.733933	RAgarwal, A Awasthi, N Singh, PK Gupta,S K Mittal,	0.84
134.	Conductometric Performance of 2-pole and 5-ring conductivity cell probe for lanthanides determination using EDTA and DCTA as potential sequestering agent,	<i>Industrial &amp; Engineering Chemistry Research (ACS),</i> 51(2012)11328-11334.	KomalMatharu, Susheel K Mittal and Ashok Kumar SK,	2.127
135.	Thermal and electrical behavior of silver chloride/polyaniline nanocomposite synthesized in aqueous medium using hydrogen peroxide	<i>J Mater Sci: Mater Electron</i> DOI 10.1007/s10854-012-0933-0 IF: 1.076	SujataVohra, Manish Kumar, Susheel K. Mittal,M. L. Singla	
136.	Optimization studies for hybrid and storage designs for parabolic solar trough systems with the system advisor model	<i>Environental Progress and Sustainable Energy,</i> DOI: 10.1002/ep.11719	Amit Jain, P.N.B.V. ChalapathiRao, PoulamiChoudhury, Rajeev Mehta, Susheel K. Mittal	1.649
137.	Improvised response in 1,4 Dioxane as co-solvent during selective determination of lanthanides in binary mixtures by conductometry	<i>Current Analytical Chemistry (In Press)</i>	KomalMatharu Ashok Kumar SK and Susheel K Mittal,	1.0
138.	Heterogeneously catalyzed selective esterification of benzoic acid using zirconium based ion exchangers, Science	Journal of Pure and Applied Chemistry (In Press)	C. Singh, SK Mittal, N. Kaur,	--
139.	Electron spin resonance, nuclear quadrupole resonance, reflectance and magnetic parameters of cobalt (ii) and nickel (ii) complexes using density functional theory,	<i>International Journal of Current Research and Review,</i> 4(22)(2012)12-28.	Harminder Singh, A.K. Bhardwaj, M.L.Sehgal and Susheel K Mittal	--
140.	Thermal stability and electrical characteristics of poly(2-ethylaniline)-Au nanocomposite,	<i>J Mater Sci: Mater Electron</i> ,DOI 10.1007/s10854-013-1156-8	SujataVohra, Narinder Singh, Susheel K. Mittal, M. L. Singla,	1.97

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
141.	Correlation of Electron Spin Resonance, Nuclear Quadrupole Resonance, reflectance and magnetic parameters of transition metal complexes by DFT calculations:	part-i: Titanium (II,III), Vanadium (II,III)	Harminder Singh, A.K. Bhardwaj, M.L.Sehgal and Susheel K Mittal	--
142.	Calculating ESR Parameters ( $H^{\wedge}$ & $\Delta E_h$ F) Of 4d And 5d transitionmetal ion complexes: A DFT Study	<i>International Journal of Current Research and Review</i> ,5(5)(2013)71-88.	Harminder Singh, A.K. Bhardwaj, M.L.Sehgal and Susheel K Mittal	1.136
143.	Disposable Screen Printed Electrodefor Mercury Ions	<i>Int. J. Electrochem. Sci.</i> , 8(2013)	KaramjeetKaur, Susheel K Mittal, Ashok Kumar SK, Ashwani Kumar, SubodhKumar, Jonathan P. Mettersand Craig E Banks	1.956
144.	Viologen Substituted Anthrone Derivatives for Selective Detection of Cyanide Ions Using Voltammetry	<i>Anal. Methods</i> , 5(2013), 5565-5571	KaramjeetKaur, Susheel K Mittal, Ashok Kumar SK, Ashwani Kumar and Subodh Kumar	1.547
145.	Sewage sludge as Green Manure Supplement in Agriculture	<i>Journal of Applied Ecology and Environmental Research (Accepted)</i> .	Monika Kharub, AnitaRajor, SusheelK Mittal,	0.59
146.	Immobilization of N',N'',N''' tris(2-pyridyloxymethyl) ethane as a neutral carrier in a PVC-membrane medium for lead(II) ion-selective electrodes,	<i>J. Chem. Sci. (Springer)</i> , 126(2014)33-40.	Pawan Kumar, Ashok Kumar SK, Susheel K Mittal,	1.224
147.	Statistical model to quantify the effect of pollution loading due to field crop residue burning on the PFTs of healthy subjects	<i>Journal of Metrology Society of India DOI: 10.1007/s12647-013-0070-0(Springer)</i> .	AmitAwasthi, RavinderAgarwal, SusheelK Mital, Nirankar Singh and PrabhatK Gupta	0.28
148.	Potassium as a Marker in Air Particulate Matter After Crop Residue Burning Events in Patiala, India	<i>Chitkara Chemistry Review</i> 09/2013; 1(2):47-58.	Nirankar Singh, Susheel Mittal, Rishipal Singh, AmitAwasthi, RavinderAgarwal, Prabhat K Gupta	--

	<b>Title of the paper</b>	<b>Name of the Journal with volume, page nos., year</b>	<b>Name of the authors</b>	<b>Impact Factor</b>
<b>149.</b>	Polymer-Based Biocompatible Fluorescent Sensor for Nanomolar Detection of Zn <sup>2+</sup> in Aqueous Medium and Biological Samples	Inorg. Chem. Front.(RSC), 2014,1, 99-108.	KamalpreetKaur, ManjotKaur, AmanpreetKaur, JasminderSingh, NarinderSingh, Susheel K. Mittal, NavneetKaur	--
<b>150.</b>	Electrochemical Studies on Zirconium Phosphoborate Based Heterogeneous Membranes	J. Electrochem. Sci. Eng. 4(2) (2014) 55-65	SandeepKaushal, Pritpal Singh and Susheel K Mittal	1.956
<b>151.</b>	A Yttrium(III) selective electrode based on zirconium(IV) phosphoborates	Journal of New Materials for Electrochemical Systems 17, 5-8 (2014)	SandeepKaushal, Pritpal Singh and Susheel K Mittal,	0.53
<b>152.</b>	A new assembly for biosensing ultra-trace levels of mercury in a continuous flow system	Anal. Methods, 2014,6, 5741-5745.	Jasminder Singh and Susheel K. Mittal	1.547
<b>153.</b>	Voltammetry of nanoparticle coupled imine linkage based receptors for sensing of Al(III) and Co(II) ions,	J Applied Electrochemistry (Springer), DOI: DOI: 10.1007/s10800-014-0746-3	Susheel K Mittal, Rashmi Sharma, Manisha Sharma, Narinder Singh, Jasminder Singh, Navneet Kaur and Manmohan Chhibber,	2.147
<b>154.</b>	NMR ( <sup>13</sup> C, <sup>17</sup> O) and IR/Raman Studies of Binuclear Carbonyls: A DFT Application	International Journal of Pure and Applied Chemistry, 8(2013) (In Press).	ML Sehgal, S Sharma and SK Mittal	--
<b>155.</b>	Improved Response in 1,4 Dioxane as Co-solvent During Selective Determination of Cerium (III) in Binary Mixtures by Conductometry	Current Analytical Chemistry, 10(4), 2014, 505-511(7)	Komal Matharu, Ashok Kumar SK, and Susheel K Mittal	2.35
<b>156.</b>	N, N, N-tris(2-pyridyloxymethyl) ethane as ionophore in potentiometric sensor for Pb(II) ions	Journal of Chemical Sciences, 123(1), 2014, 33-40.	PawanKumar, AshokKumarSK, Susheel KMittal	1.22

	Title of the paper	Name of the Journal with volume, page nos., year	Name of the authors	Impact Factor
157.	Diphenylether based derivatives as Fe (III) chemosensors: Spectrofluorimetry, Electrochemical and Theoretical studies	RSC Advances, 5, (2015) 21831-21842	Rashmi Sharma, Manmohan Chhibber, Susheel K Mittal	3.7
158.	Y(OTf) <sub>3</sub> catalyzed substitution dependent oxidative C(sp <sup>3</sup> )-C(sp <sup>3</sup> ) cleavage and regioselective dehydration of β-allyl-β-hydroxydithioesters: alternate route to α,β-unsaturated ketones and functionalized dienes.	Tetrahedron 2013, 69, 8899-8903	S. Chowdhury, T. Chanda, G. C. Nandi, S. Koley, B. Janaki Ramulu, S. K. Pandey, M. S. Singh	2.8
159.	An Enantioselective Approach to Functionalized Amino Acids: Total Synthesis of Antiepileptic Drug (R)-Lacosamide.	J. Org. Chem. 2015 80 (8), 4201-4203	Yuvraj Garg and Satyendra Kumar Pandey	4.6
160.	Enantioselective total synthesis of (+)-serinolamide A	RSC Adv. 2015 DOI: 10.1021/acs.joc.5b00480	Suraksha Gahalawat and Satyendra Kumar Pandey	3.7
161.	An enantioselective approach to 2-alkyl substituted tetrahydroquinolines: total synthesis of (+)-angustureine	RSC Adv. 2015,5, 38846-38850	Yuvraj Garg, Suraksha Gahalawat and Satyendra Kumar Pandey	3.7

23. Details of patents and income generated: (02 applied)
24. Areas of consultancy and income generated: NA
25. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad:  
Dr. Vijay Luxami: Working as visiting scientist at chemistry department, Bath University, UK
26. Faculty serving in
  - a) National committees
  - b) International committees
  - c) Editorial Boards
  - d) any other (please specify)



27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).
28. Student projects (**List for last 3 years**)
- percentage of students who have done in-house projects including inter-departmental projects  
100%
  - percentage of students doing projects in collaboration with other universities / industry / institute
29. Awards / recognitions received at the national and international level by Faculty
- IASC-INSA-NASI SUMMER RESEARCH FELLOWSHIP -2009  
 DFG Award  
 DST-Young scientist awards  
 DST INSPIRE faculty Award  
 DST Women scientist fellowship and  
 DST INSPIRE award to Ph. D. students
- Doctoral / post doctoral fellows
  - Students
30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.
1. **National Conference “Innovative molecules for sustainable future” Oct. 24-26, 2013**
  2. **Seminar on Basics and applications in catalysis, Feb. 24, 2014 by SCORE**
31. Code of ethics for research followed by the departments:  
 To remain active in frontier areas of chemical research of international standard and relevant to Indian industry and Society.
32. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M. Sc. Chemistry	79	2	22	8	92
Ph. D. Chemistry	25	3	8	12	32

33. Diversity of students:

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
M. Sc. Chemistry	0	70	30	00
Ph.D. Chemistry	20	60	20	00

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

CSIR-NET: 03

GATE: 02

35. Student progression

Student progression	Percentage against enrolled
UG to PG	No of UG program
PG to M.Phil.	No of M. Phil. program
PG to Ph.D.	20
Ph.D. to Post-Doctoral	10
Employed	
Campus Selection	
Other than campus recruitment	PG/Ph.D. students self placed = 90%
Entrepreneurs	

36. Diversity of staff

Percentage of faculty who are graduates of the same university	NIL
from other universities within the State	50%
from universities from other States from	50%

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period:

**All faculty members are Ph. D. Holder from reputed institute/University.**

38. Present details of departmental infrastructural facilities with regard to

- Library: Central library
- Internet facilities for staff and students: Wi-Fi to all students and staff.
- Total number of class rooms:
- Class rooms with ICT facility
- Students' laboratories: 2 UG labs and 2 PG labs.

f) Research laboratories: All faculty

Laboratory description	Space, number of students	Software used	Type of experiments	Quality of instruments	Laboratory manuals
2UG Lab Labs	53"x29" sq. ft.42 x29 sq.ft.30 students x 20 batch = 600	Chem draw, isis draw	Volumetric titration and instruments based experiments.	Branded new (1-2) years old	Available in the all labs
2PG Lab	20 students x 2 batch	Chem draw, isis draw	Organic,inorganic and physical chemistry experiments	Branded new (1-2) years old	Available in the all labs

39. List of doctoral, post-doctoral students and Research Associates

a) from the host institution/ university

S No	Name of student	Thesis Title	Year
1	Siloni Goel	Impact of heavy metal ions on BOD exertion	2008
2	Surjit Singh Katoch	Investigations on common treatment technologies for some biomedical waste	2008(CHED)
3	Vinit Prakash	Polycyclic aromatic hydrocarbons from waste incineration	2009
4	Nidhi Rani Gupta	Potentiometric investigations on cation selective electrodes based on macrocyclic and acyclic amides as ionophores	2009
5	Dinesh Kumar	Studies on cetane number and lubricity of additives from vegetable oils	2011
6	Nirankar Singh	Monitoring of ambient air quality of Patiala city with special reference to crop burning	2011
7	Sanjeev Gupta	Ozonation of activated sludge of pulp and paper industry for reduction in quantity and ontamination	2012
8	Satnam Singh	Fungus mediated transesterification of triglycerides	2012
9	Joginder Singh	Agricultural wastes as adsorbents for the removal of toxic metal ions from industrial effluents	10.10.2013
10	Amit Jain	Modeling and simulation of insolation for solar PV and thermal based power plants in India	25.10.2013
11	Karamjeet Kaur	Neutral and charged receptors as voltametric sensors for ions	11.11.2013
12	Nidhi Gupta	Silica coated metal-CdS hybrid nanocomposites for photocatalytic reactions	12.11.2013
13	Jasminder Singh	Microbial biosensors for some heavy metal ions	21.1.2014
14	Vishal	Development of Heterogenous catalysts for formation of Biodiesel	27.1.2014
15	Komal Matharu	Determination of Lanthanides By Conductometry Using Some Sequestering Agents	March 08, 2014
16.	Pawan Kumar	Pyridyl Based Synthetic Ionophores as Chemical Sensors for Some Transition Metal Ions	November 2014

S No	Name of student	Thesis Title	Year
17.	Sujata	Synthesis and characterization of PANI/PEANI Gold Silver Composite	November 2014
18.	Madhu Katiyar	Lipase catalysed transesterification reactions of triglycerides	November 2014
19.	Rishu Jain	Kinetic and thermodynamic studies on the effect of chaotropic and kosmotropic cosolvents on proteins	November 2014
20.	Rupinder Kaur	Synthesis of coinage metal nanoparticles as co-catalysts for TiO <sub>2</sub> based photocatalysts.	November 2014
21.	Pankil Singla	Microwave assisted polymerization of lactide and in-situ preparation of poly (lactic acid) - claynanocomposites	November 2014
22.	Mandeep Kaur	Preparation and characterization of mixed metal oxides as solid catalysts for transesterification of triglycerides	November 2014
23.	Inderpreet Singh Grovar	Photocatalytic Degradation of Some Pesticides and Polycyclic Aromatic Hydrocarbons by Metal Doped Titania Nanoparticles	November 2014
24.	Rohit Singh	Synthesis of Au/Ag-CdS nanostructures- Effect of size and shape on photocatalytic activity	November 2014

b) from other institutions/universities .....NA

40. Number of post graduate students getting financial assistance from the university.

**SIX students each Year**

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

**YES, as per ISO norms**

42. Does the department obtain feedback from

a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? **yes**

b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback? **For revision of scheme and syllabus.**

c. alumni and employers on the programmes offered and how does the department utilize the feedback? **For the revision of scheme and syllabus**

43. List the distinguished alumni of the department (maximum 10)

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

S. No.	Title	Lecture
1.	Catalysts and technological developments using catalysts	Prof. M.R. Maurya, Department of Chemistry, IIT Roorkee

2.	Concept involve in the synthesis and application of heterogeneous catalysis	Prof. R.K. Sirivastava, Department of Chemistry, IIT Ropar
3.	Basic of hydrotreating catalyst and its application in Petroleum industry	Dr. Samir Maity, IIP Dehradun
4.	Scientific communication and art of paper writing	Dr. Sanjay Sen Gupta, CSIR Delhi
5.	Fluorescent Organic Nanoparticle Based Chemo sensor	Dr. Narinder Singh, IIT Ropar
6.	Siderophore synthesis and biological evaluation for pathogen detection	Dr. Rajesh Pandey, Senior Scientist AllExcel Inc. 135 Wood St, West Haven, CT 06516 USA

45. List the teaching methods adopted by the faculty for different programmes.  
**Blackboard as well as PowerPoint presentation**
46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?  
**By review meeting after the completion of semester.**
47. Highlight the participation of students and faculty in extension activities.
48. Give details of “beyond syllabus scholarly activities” of the department.  
**Invited lectures, seminar, chairing of session in conferences and workshop.**
49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.
50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.  
**The school has published papers in diverse field like Nanotechnology, Biodiesel, Chemical Sensors, Pharmaceutical Chemistry, Organic synthesis, Biophysical chemistry etc.**

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

**STRENGTHS:**

- Highly qualified & experienced faculty from IITs and universities of repute
- Strong research aptitude-students from other universities prefer doing PhD
- Research in interdisciplinary and niche areas of bio-related, medicinal and materials chemistry
- International exposure to most of the faculties
- Research projects sponsored by key funding agencies like DST, DRDO, UGC, CSIR and BRNS
- PG Program in chemistry with periodic curriculum review and an option of dissertation
- Infrastructure projects sponsored by DST (FIST), MoES, AICTE
- MoU with IITM (Pune) for weather monitoring station
- Research publications in journals of high Impact Factors
- High-end equipment - GC-MS, HPLC and FT-IR for research

**WEAKNESSES:**

- Untrained and insufficient Lab and Technical supporting staff
- Inadequate maintenance facilities for equipment
- Glass blowing workshop required

**OPPORTUNITIES:**

- Brand equity of Thapar Institute of Engineering & Technology University
- Academic and administrative independence
- Provision for visits to foreign universities
- Starting of new UG/PG course

**THREATS:**

- High cost of lab establishment
- High fee structure for M. Sc. compare to 5 nearby private institutes/universities
- Retention of Faculty
- Differential criteria for promotion of science faculty

52. Future plans of the department.

- i) To recognised the school in the research area like Nanomaterial, anti cancer compounds, biodiesel production, and synthetic organic chemistry.
- ii) To start M. Tech. (Instrumental Method of analysis).