

Department of Chemistry

Established in 1946

(DST-FIST and UGC-SAP Funded Department)



DEPARTMENT OF CHEMISTRY
Dr. Harisingh Gour University, Sagar (M.P.) 470 003

Dr. Hair Singh Gour Vishwavidyalaya, Sagar (M.P.)
(A Central University)
www.dhgsu.ac.in

About the Department

Being the oldest and the biggest in State of Madhya Pradesh, the Chemistry Department of Doctor Hari Singh Gour Vishwavidyalaya, Sagar, has a proud record of achievements in the field of higher education during the last sixty five years of its existence. The department is of national importance in higher chemistry education and in basic & applied chemical research. Since its inception in 1946, the department has been engaged in imparting the highest level and quality of education and has focused upon addressing key scientific research problems which have gathered national appreciation and recognition.

The department started its teaching programs with the inception of university and now it has about 1200 undergraduate and 150 post graduate students on its roll. More than 40 research students are currently working for their PhD degree in the fields of Natural products, Medicinal Chemistry, Electrochemistry, Material science, Chemical crystallography, Oxidation chemistry and Chemical Dynamics, Lipid chemistry, Heterocyclic Chemistry, Petroleum chemistry, Computational Chemistry, Nano Chemistry etc. Nearly 380 students have received PhD and 2 have been awarded D.Sc. degree so far. Most of the faculty members have visited abroad in connection with their research assignments at various international laboratories.

Research specializations of faculty members

1. Dr K.S. Pitre Electro Analytical / Bioelectrical Chemistry
2. Dr O.P. Shrivastava Chemical crystallography, Solid State Chemistry & Material Science
3. Dr A.K. Banerjee Natural Products, Lipid Chemistry
4. Dr S.K. Shrivastava Synthetic Heterocyclic Chemistry, Medicinal Chemistry and Natural Products
5. Dr S.N. Limaye Coordination Chemistry and Computational Chemistry
6. Dr F. Khan Nanoporous materials, Nano composites, Electro analytical techniques
7. Dr (Mrs) Archana Pandey Reaction mechanism, Chemical Dynamics
8. Dr R.N. Yadav Natural Products, Medicinal Chemistry
9. Dr A.P. Mishra Structural Inorganic chemistry, Bio inorganic, Nano materials;
Coordination Chemistry
10. Dr (Mrs) S.D. Shrivastava Synthetic Heterocyclic Chemistry, Medicinal Chemistry and Natural Products
11. Dr O.P. Chourasia Medicinal Chemistry, Synthesis of Heterocyclic compounds
12. Dr T.S.S. Rao Theoretical Organic Chemistry, Petroleum Chemistry
13. Dr S.P. Shrivastava Medicinal chemistry, Synthesis of Heterocyclic compounds
14. Dr Y. Rohan Water Pollution
15. Shri R.C. Pawar Chemical Kinetics, Coordination Chemistry
16. Dr Vijay Verma Solid state Chemistry, Spectroscopy
17. Dr Ratnesh Das Electro Chemistry, Computational Chemistry and Synthetic
Heterocyclic compounds
18. Dr (Mrs) Ritu Yadav Synthetic Heterocyclic Chemistry, Medicinal Chemistry and Natural Products
19. Dr K. K. Raj Coordination Chemistry of Transition Metals

Courses of the Department (admission through entrance test)

All courses are based on Choice Based Credit System (CBCS) that cover various facets of chemistry and applied chemistry.

<i>Course</i>	<i>Duration</i>	<i>Intake</i>
❖ BSc Chemistry (PCM, CBZ and other combinations)	6 semester course	292
❖ BSc in Pharmaceutical Chemistry (with PCM, PCB/PCZ)	6 semester course	30
❖ BSc in Industrial Chemistry (with PCM, PCB/PCZ)	6 semester course	35
❖ MSc in Pure Chemistry	4 semester course	40
❖ MSc Industrial Chemistry	4 semester course	35
❖ PhD: Course work of two semesters (48 credits') followed by research work (32 credits)		Variable

UG courses:**1. B.Sc. Pure Chemistry compulsory papers (36 Credits)*****Semester I******Semester II***

Course Name	Course Code	Credits	Course Code	Credits
Inorganic Chemistry	CHE-C-111	2	CHE-C-211	2
Organic Chemistry	CHE-C-112	1	CHE-C-212	1
Physical Chemistry	CHE-C-113	1	CHE-C-213	1
Laboratory Exercise	CHE-C-114	2	CHE-C-214	2

Semester III***Semester IV***

Course Name	Course Code	Credits	Course Code	Credits
Inorganic Chemistry	CHE-C-311	1	CHE-C-411	1
Organic Chemistry	CHE-C-312	2	CHE-C-412	2
Physical Chemistry	CHE-C-313	1	CHE-C-413	1
Laboratory Exercise	CHE-C-314	2	CHE-C-414	2

Semester V***Semester VI***

Course Name	Course Code	Credits	Course Code	Credits
Inorganic Chemistry	CHE-C-511	1	CHE-C-611	1
Organic Chemistry	CHE-C-512	1	CHE-C-612	1
Physical Chemistry	CHE-C-513	2	CHE-C-613	2
Laboratory Exercise	CHE-C-514	2	CHE-C-614	2

2. B.Sc. Industrial Chemistry (36 Credits)***Semester I***

Course Name	Course Code	Credits
Gen. Industrial Chemistry	ICH-C-111	2
Gen. Industrial Techniques	ICH-C-112	2
Laboratory Exercise	ICH-C-113	2

Semester II

Course Name	Course Code	Credits
General Industrial Chemistry	ICH-C-211	2
Industrial Aspect of Organic Chemistry	ICH-C-212	2
Laboratory Exercise	ICH-C-213	2

Semester III

Course Name	Course Code	Credits
Material Science I	ICH-C-311	2
Organic synthesis-I	ICH-C-312	2
Laboratory Exercise	ICH-C-313	2

Semester IV

Course Name	Course Code	Credits
Process Instrumentation Science	ICH-C-411	2
Organic synthesis-II	ICH-C-412	2
Laboratory Exercise	ICH-C-413	2

Semester V

Course Name	Course Code	Credits
Industrial Organization & Waste Recycling– I	ICH-C-511	2
Industrial Chemical Analysis - I	ICH-C-512	2
Laboratory Course	ICH-C-513	2

Semester VI

Course Name	Course Code	Credits
Industrial Organization & Waste Recycling– II	ICH-C-611	2
Industrial Chemical Analysis - II	ICH-C-612	2
Laboratory Course	ICH-C-613	2

3. B.Sc.(Hons) Pharmaceutical Chemistry (44 Credits)**Semester I****Semester II**

Course Name	Course Code	Credits	Course Code	Credits
General Topics for Pharmaceutical /Chemistry-I/II	PCH-C-111	2	PCH-C-211	2
Pharmaceutical Analysis-I/II	PCH-C-112	2	PCH-C-212	2
Laboratory Course I/II	PCH-C-113	2	PCH-C-213	2

Semester III**Semester IV**

Course Name	Course Code	Credits	Course Code	Credits
Pharmacognosy and Phytochemistry-I/II	PCH-C-311	2	PCH-C-411	2
Pharmaceutical Biochemistry-I/II	PCH-C-312	2	PCH-C-412	2
Laboratory Exercise I/II	PCH-C-313	2	PCH-C-413	2

Semester V**Semester VI**

Course Name	Course Code	Credits	Course code	Credits
Spectroscopy-I/II	PCH-511	2	PCH-611	2
Medicinal and Pharmaceutical Chemistry-I/II	PCH-512	2	PCH-612	2
Therapeutic Agents and their Action-I/II	PCH-513	2	PCH-613	2
Computational Chemistry and Computer-Assisted Drug Design-I	PCH-514	2	PCH-614	2
Laboratory Exercise	PCH-515	2	PCH-615	2

Courses taught at PG level

M. Sc Pure Chemistry

Semester-I (23 Credits)

S. N.	Course <i>Compulsory</i>	Title	Credit (s)
1.	CHE-C-121	Inorganic-I	4
2.	CHE-C-122	Organic-I	4
3.	CHE-C-123	Physical-I	4
4.	CHE-C-124	Spectroscopy and Group Theory-I	3
5.	CHE-C-125 A/B	Mathematics / Biology for Chemists	2
6.	CHE-C-126-128	Laboratory course	6

Semester-II (23 Credits)

S. N.	Course <i>Compulsory</i>	Title	Credit (s)
1.	CHE-C-221	Inorganic-II	4
2.	CHE-C-222	Organic-II	4
3.	CHE-C-223	Physical-II	4
4.	CHE-C-224	Spectroscopy and Diffraction Studies-II	3
5.	CHE-C-225	Computer for Chemists	2
6.	CHE-C-226-229	Laboratory course	6

Semester-III (21 Credits)

S. N.	Course	Title	Credit (s)
	Compulsory		
1.	CHE-C-321	Spectroscopy, Photochemistry, Solid state Chemistry	4
2.	CHE-C-322	Bioinorganic, Bioorganic, Biophysical	3
3.	CHE-C-323	Environmental Chemistry	2
	Elective (any two)		
4.	CHE-E-324	Organo transitional chemistry	3
5.	CHE-E-325	Bio inorganic & Supramolecular chemistry	3
6.	CHE-E-326	Heterocyclic chemistry	3
7.	CHE-E-327	Chemistry of Natural Products	3
8.	CHE-E-328	Chemistry of Materials	3
9.	CHE-E-329	Nuclear Chemistry	3
10.	CHE-E-3210	Analytical Chemistry	3
	Compulsory		
11.	CHE-C-3211 to 3213	Laboratory course	6

Semester-IV (21 Credits)

S. N.	Course	Title	Credit (s)
	Compulsory		
1.	CHE-C-421	Spectroscopy, Photochemistry, Solid state Chemistry	4
2.	CHE-C-422	Bioinorganic, Bioorganic, Biophysical	3
3.	CHE-C-423	Environmental Chemistry	2
	Elective (any two)		
4.	CHE-E-424	Photo Inorganic Chemistry	3
5.	CHE-E-425	Organic Synthesis	3
6.	CHE-E-426	Medicinal Chemistry	3
7.	CHE-E-427	Polymers	3
8.	CHE-E-428	Chemistry of Supramolecules	3
9.	CHE-E-429	Electro Chemistry	3
10.	CHE-E-4210	Advanced Analytical Chemistry	3
	Compulsory		
	CHE-C-4211-4213	Laboratory Course	6

M.Sc Industrial Chemistry

Semester-I (18.5 Credits)

Course Name	Course code	Credit
Inorganic Chemistry	ICH-C-121	3
Organic Chemistry	ICH-C-122	3
Physical Chemistry	ICH-C-123	3
Quantum Chemistry and Chemical Bonding	ICH-C-124	3
Mathematics Biology for Chemists	ICH-C-125 A/B	2
Inorganic Chemistry Laboratory	ICH-C-126	1.5
Organic Chemistry Laboratory	ICH-C-127	1.5
Physical Chemistry Laboratory	ICH-C-128	1.5

Semester-II (19.5 Credits)

Course Name	Course code	Credit
Inorganic Chemistry	ICH-C-221	3
Organic Chemistry	ICH-C-122	3
Physical Chemistry	ICH-C-223	3
Spectroscopy	ICH-C-224	3
Mathematics Biology for Chemists	ICH-C-225 A/B	2
Inorganic Chemistry Laboratory	ICH-C-226	1.5
Organic Chemistry Laboratory	ICH-C-227	1.5
Physical Chemistry Laboratory	ICH-C-228	1.5
Computers for ChemistS - Laboratory	ICH-C-229	1

Semester – III (24 Credits)

Course Name	Course code	Credits
Industrial Polymer-I	ICH-C-321	4
Industrial Chemicals	ICH-C-322	4
Chemistry of Natural Products	ICH-C-323	4
Applied Electrochemistry – I	ICH-E-324	3
Analytical Chemistry – I	ICH-E-325	3
Medicinal Chemistry – I	ICH-E-326	3
Laboratory Course I : Analytical & Elective I	ICH-C-327	3
Laboratory Course II: Analytical & Elective II	ICH-E-3284	3

Semester – IV (24 Credits)

Course Name	Course code	Credits
Industrial Polymer-I	ICH-C-421	4
Advanced Analytical Chemistry – II	ICH-C-422	4
Chemistry of Natural Products	ICH-C-423	4
Applied Electrochemistry – I	ICH-E-424	3
Green Chemistry	ICH-E-425	3
Medicinal Chemistry – I	ICH-E-426	3
Laboratory Course I : Analytical & Elective I	ICH-C-427	3
Laboratory Course II: Analytical & Elective II	ICH-C-428	3

PhD program*total credits: 80***Part A. credits through course work: 48 (two semesters)****Part B. Credits through research work: 32****Course work Semester I**

S. N.	Course	Title	Credit(s)
	Compulsory		
1.	CHE-C-141	Research Methodology and Spectroscopy	3
2.	CHE-C-142	Solid State and Material Chemistry	3
3.	CHE-C-143	Recent Developments in Chemistry of Natural Products	3
4.	CHE-C-144	Advance Nano-Materials and Technology	3
5.	CHE-C-145	Laboratory Course in Research Methodology and Spectroscopy	1
6.	CHE-C-146	Laboratory Course in Solid state chemistry	1
7.	CHE-C-147	Laboratory Course in Recent Developments in Chemistry of Natural Products	1
8.	CHE-C-148	Laboratory Course in Advance Nano-Materials and Technology	1
9.	CHE-C-149	Project work on literature review and techniques	4
10.	CHE-C-150	Seminar and viva-voce examination on above (2+2)	4

Semester-II

S. N.	Course	Title	Credit(s)
	Compulsory		
1.	CHE-C-241	Structural Inorganic Chemistry and Radio-chemistry	3
2.	CHE-C-242	Advanced heterocyclic synthesis and its applications	3
3.	CHE-C-243	Kinetics and Mechanism of Chemical Transformation	3
4.	CHE-C-244	Applied Electrochemistry	3
5.	CHE-C-245	Laboratory Course in Structural Inorganic Chemistry and Radio-chemistry	1
6.	CHE-C-246	Laboratory Course in Advanced heterocyclic synthesis and its applications	1
7.	CHE-C-247	Laboratory Course in Kinetics and Mechanism of Chemical Transformation	1
8.	CHE-C-248	Laboratory Course in Applied Electrochemistry	1
9.	CHE-C-249	Project work on proposed research topic and synopsis of the thesis	4
10.	CHE-C-250	Seminar and viva-voce examination on above (2+2)	4

Major Research Projects during last five years

S. N.	Principal Investigator	Title of the project	Funding agency	Amount Funded (Rs. in Lakhs)	Duration
1.	Prof O. P. Shrivastava	FIST Program	DST, New Delhi	90.0	2011-2016
2.	Prof K. S. Pitre and Prof T. S. S. Rao	Electro Analytical Chemistry and Drug designing	Special Assistance Program (SAP) Phase-I UGC New Delhi	37.25	2009-2014
3.	Prof K. S. Pitre and Prof T. S. S. Rao	Electro Analytical Chemistry and Drug designing	SAP Infrastructure Grant under DRS	20.0	2009-2010

4.	Prof Farid Khan	Synthesis and characterization of Nano-porous Materials	Nano- Science and Technology Mission, DST New Delhi	22.0	2008-2011
5.	Prof O. P. Shrivastava	Synthesis, crystallographic characterization and study of electrical behavior of titania, zirconia and phosphate based ceramic materials	SERC-DST, New Delhi	49.50	2006-2009
6.	Dr K. K. Raj	Synthesis, Characterization and Biological Studies of Some 3d Metal Complexes.	MPCOST, Bhopal	4.52	2010-2013

Infrastructure facilities

Lecture halls	06
UG laboratory	02
PG laboratory	07
Research laboratory	06
Petroleum technology laboratory	01
Computer laboratory	03
Teachers' room	12

Major Equipments

1	Infra red Spectrophotometer
2	UV- and Visible Spectrophotometer
3	HPLC
4	Electrochemical Analyzer
5	Impedance meter
6	High temperature furnace
7	X-ray Diffractometer (under process in FIST program)

Recent publications

- Garima Modi and **K.S. Pitre**, Electrochemical analysis of natural chemopreventive agent (curcumin) in extracted and pharmaceutical formulation. Defence Sc. J., 60, 2010.
- Garima Modi and **K.S. Pitre**, Significance of species sensitive electrochemical methods for the analysis of antineuractodermal agent AE (ALOE-EMODIN). Rev. Anal. Chem., 29(2), 117, 2010.
- Rakesh Choure and **K.S. Pitre**, Polarographic Analysis of Structurally Modified Paracetamol, E. J. Chem., 7(SI), 2010.
- Rakesh Choure and **K.S. Pitre**, Structural Modification of Coumarin for its increased anticoagulation potency. Canadian J. Chem. Engg. And Tech., 1, (2), 7 2010.
- Chourasia Rashmi and **Shrivastava O. P**: Crystal structure and impedance study of samarium substituted perovskite: $\text{La}_{1-x}\text{Sm}_x\text{MnO}_3$ ($x = 0.1-0.3$), Solid State Sciences, 14: 341-348, 2012
- Chourasia Rashmi and **Shrivastava O. P**: structure refinement of polycrystalline orthorhombic yttrium substituted calcium titanate: $\text{Ca}_{0.90}\text{Y}_{0.10}\text{TiO}_{3+\delta}$ ($x=0.1-0.3$), Bull. of Mat Sci, 34(1):89-95, 2011.
- Chourasia Rashmi and **Shrivastava O. P**: Crystal chemistry and electrical properties of Manganese doped perovskite $\text{BaTi}_{1-x}\text{Zr}_x\text{O}_3$ ($0 < x < 0.1$), Polyhedron, 30: 738–745, 2011
- Chourasia Rashmi and **Shrivastava O. P**: Crystallographic characterization and microstructure of nano ceramic powder of calcium zirconium phosphate: $\text{Ca}_{1-x}\text{M}_x\text{Zr}_4\text{P}_6\text{O}_{24}$ ($\text{M} = \text{Sr}, \text{Ba}$ & $x=0-1$), Solid State Sciences, 13: 444-454, 2011.
- Chourasia Rashmi, Bohre Ashish, Ambastha Ritu D., **Shrivastava O. P** and. Wattal P. K: Crystallographic evaluation of sodium zirconium phosphate as a host structure for immobilization of cesium, J. Materials science, 45: 533-545, 2010.
- Chourasia Rashmi, **Shrivastava O. P**, Ambastha Ritu D., and. Wattal P. K: Crystal chemistry of immobilization of fast breeder reactor (FBR) simulated waste in sodium zirconium phosphate (NZP) based ceramic matrix, J. Annals Nuclear Energy, 37: 103-112, 2010.
- Chourasia Rashmi and **Shrivastava O. P**: Structure refinement and impedance properties of polycrystalline orthorhombic yttrium substituted calcium titanate: $\text{Ca}_{0.90}\text{Y}_{0.10}\text{TiO}_{3+\delta}$ ($x=0.1-0.3$), Journal of Indian Chemical Society, 88:1-8, 2011.
- **Banerjee, A**: Studies on Shorea robusta Analysis of seed oil and defatted content, International Journal of Chemistry and Applications, 3 (2): 189-196, 2011.
- Upadhyaya, A., **Srivastava, S.K., Srivastava, S.D. and Yadav, R.**, Conventional as well as microwave assisted synthesis of some new 4-aryl-3-chloro-1[(isonicotinamid-4-yl)-acetamido]-2-oxo-ozetidines: antibacterial and antifungal agent, Proc. Nat. Acad. Sci., 80(A), II, 131-137(2010).

- **Srivastava, S.K.,** Dua, R. **and Srivastava, S.D.,** Synthesis and antimicrobial activity of [N-substitutedarylidene-hydrazine)-2-methyl-imidazol and [N-substitutedaryl-3-chloro-2-oxo-1-azetidiny-amino]-2-methyl-imidazoles, Proc. Nat. Acad. Sci., 80(A), II, 117-121 (2010).
- Upadhyay, A., **Srivastava, S.K. and Srivastava, S.D.,** Neat reaction technology and conventional method for the synthesis of 4-oxo-thiazolidines and their 5-arylidene derivatives and its antimicrobial activity, Jordan Journal of Chemistry (Jordan), 5(1), 1-11 (2010).
- Dua, R. **and Srivastava, S.K.,** Synthesis, Characterization and antimicrobial activity of 2-(2-substituted - benzylidene-hydrazino-acetyl)-mercapto-5-methyl-1,3,4-thiadiazoles and 2-[4-substituted-aryl-3-chloro-2-oxo-azetidine]-acetyl-amino-mercapto]-5-methyl-1,3,4-thiadiazoles, International J. of Pharma and Bio Science, VI(2), 1-8 (2010).
- Upadhyay, A., **Srivastava, S.K. and Srivastava S.D.,** Conventional and microwave assisted synthesis of some new N-[(4-oxo-2-substitutedaryl-1,3-thiazolidine)-acetamidyl]-5-nitroindazoles and its antimicrobial activity, European Journal of Medicinal Chemistry, 45, 3542-3548 (2010).
- Dua, R., Sonwane, S.K., **Srivastava, S.K. and Srivastava, S.D.,** Green and expeditions synthesis of 2-azetidinone derivative from 2-mercaptobenzothiazole and their pharmacological screening of the synthesized compounds using microwave irradiation, World Journal of Chemistry, 5(1), 52-56 (2010).
- Upadhyay, A., **Srivastava, S.K., Srivastava, S.D. and Yadav, R.,** Conventional as well as microwave assisted synthesis and antimicrobial Screening of 4-aryl-3-chloro-1-[(5-introindazol-1-yl)-acetamido]-2-oxo-azetidines, Indian J. Chemistry, 50B, 89-97 (2010).
- Samadhiya, P., Sharma, R., **Srivastava, S.K. and Srivastava, S.D.,** Synthesis and biological activity of N-[3-({4-substituted-3-chloro-2-oxo-azetidine)-carbonyl}-propyl]-2-aminothiazoles by conventional and microwave irradiation, Der Pharma Chemica, 2(6), 183-196 (2010).
- **Khan, F.,** Khanam, A., Parihar, M. S., Bilginya, R, Rai, K. and Khan F.: 'Dissipative convective structures and nanoparticles encapsulation in Cu/alginate/Dextran composite hydrogels and sponges' Carbohy. Polym., 83, 586-590, 2011.
- Bilginya, R., **Khan, F. and** Mann, S.: Spontaneous patterning and nanoparticles encapsulation in carboxymethylcellulose/alginate/dextran hydrogels and sponges Mater. Sci. & Engin. C., 30, 352-356, 2010
- Kesharwani, A. K., **Khan, F.:** Polarographic characteristics and Thermodynamic parameters of Zn(II) – Antibiotics- Paracetamol complex., Oxid. Commun., 33, 709-718, 2010.
- **Khan, F and** Khanam, A.: Study of electrode kinetics and thermodynamics of Zinc complexes with some L-Amino acids and Vitamin C by Voltammetric technique. CHEMIJA (Lithuania), 21(2-3), 80, 2010.

- **Khan, F**, Bilgainya, R.: Synthesis and Characterization of Silver, Gold, Copper oxide, and Titanium dioxide sponges using Triton X -305 as sacrificial template. *Current Science*, 100(11), 1690-1695, 2011.
- **Khan, F.**, Bilgainya, R.: Synthesis and characterization of metal and metal oxide sponges using Triton X – 165 as sacrificial template' *Indian J Chem.*, 50A, 55-59, 2011.
- **Khan, F. with Rai**, K.: Polarographic study of stability constant & thermodynamic Parameters of [Mn-L- amino acidate – vitamin –PP] system vis- a- vis electrode kinetics' *J. Indian Chem. Soc.*, 87, 971-974, 2010.
- Kesharwani, A., **Khan, F.:** Polarographic study and kinetic parameters of mixed ligand complexes of [(Mn(II) – antibiotic – aspirin)] system, *J. Indian Council Chem.*, 27(1), 48, 2010.
- Yadava R.N. and Bhargava Bharati, Phytochemical Constituents from *Vernonia anthelmintica* Wild.", *Int. J. Chem. Sci.*, Vol-8(4), pp. 2470-2474, 2010.
- **Yadava R.N.** and Reddy K. Indrasena, "Synthesis of 5,4'-Dihydroxy-7,3'-Dimethoxy Flavone", *J. Inst. Chemists (India)*, Vol-82, part-5, 2010.
- **Yadava R.N.** and Patil Gautam, Chemical Constituents from *Launaea pinnatifida* Cass, *Asian Journal of Chemistry in Asia*, vol-1, issue No-4, p. 219-224, 2010.
- **Yadava R.N.** and Raj Mamata, Phytochemical Examination of *Emilia sonchifolia* DC. *Asian Journal of Chemistry*, vol-23, No.3, p. 1403-1404, 2011.
- **Yadava R.N.** and Satnami D.K., Potential Phytochemical from *Ceasalpinia crista* Linn., *Research Journal of Phytochemistry*, vol-V, No-1, p- 22-31, 2011.
- **A.P.Mishra** and P.Gupta: Effect of chelation on therapeutic potential of drugs: synthesis, structure, antimicrobial and insecticidal activity of 3d-metal complexes involving Schiff base; *J. Chem. Pharm. Res.* 3(2),(2011),150-61
- **A.P. Mishra** and R.K. Jain; Microwave synthesis, spectroscopic, thermal and biological significance of some transition metal complexes containing heterocyclic ligands ; *J. Chem. Pharma. Res.* 2(6), (2010), 51-61.
- **A.P. Mishra** and S. Shukla; Synthesis, Structure and antimicrobial activity of Co(II) and Cu(II) complexes with 2-amino-4-thioburet; *Der. Pharma. Chim.* 2, (2010) 410-18.
- Nidhi Goutam & **O.P. Chourasia** Synthesis, antimicrobial, and insecticidal activity of some 4-H 1,2,4 triazole derivatives, *Indian Journal of Chemistry*, pp 956-959, Vol.49B, July 2010.
- Nidhi Goutam & **O.P. Chourasia** Synthesis and antimicrobial activity of some new thiazolidinone derivatives *journal of Institution of chemists (India)*, pp 165-170, Vol.82, part 6, 2010.

- Nidhi Goutam & **O.P. Chourasia** Synthesis, and antimicrobial, and insecticidal activity of some new N-(5-methyl-1-(methoxy phenyl)-1,2,3-triazol-4yl) carbamic acid ester derivatives., *Journal of Inst Chemists(India)*, pp 09-15, Vol.83, part 1, 2011.
- **Shrivatava S.P.** Ahirwar M.K. Goutam N, "Synthesis and antimicrobial activity of some pyrazoline derivatives, *Asian Journal of chemistry*, Vol.22, pp 5297-5302, No.-7, 2010.
- **Shrivastava, S.P.** Bamnela, Rita, Synthesis and Biological Activity of 4,6, Substituted aryl -1-acetyl pyrimidine -2-ol, *Asian Journal of chemistry*, Vol.22,pp-6553-6558, 2010.
- **Shrivastava ,S.P.** Bamnela Rita , Synthesis and in vitro Antimicrobial , Anthelmintic and Insecticidal Activities study of 4(4'-Bromophenyl) -6- substituted -aryl-1- acetyl Pyrimidine -2-thiols, *E- Journal of Chemistry* Vol.7(3), pp- 935-941, 2010.
- **Shrivastava S.P.** Ahirwar Mukesh Kumar, Bardia Rahul and Synthesis And Antifungal Activity Studies Of Some 3-(3 (5-nitro)indolyl)-5-(4-substitutedphenyl)-Isoxazoline And Isothiazoline Derivatives *Asian journal of chemistry*. Vol.22, pp7493-7497, No.10, 2010.
- **Shrivastava S.P.**, Ahirwar Mukesh Kumar, Mehta P., Synthesis and Antimicrobial Activity of Some Pyrazoline Derivatives, *Journal of Pharmacy and Chemistry* Vol.4, pp-75-79, issue 3, 2010.
- **Raj, Krishna Kumar**, "Co(II), Ni(II) and Cu(II) Complexes with Schiff bases; DCA and NACPh as Potential Antifungal and Antibacterial Agents", *Int. J. Chem. Sci*: 8(4), 2127-2131, 2010.

Participation in conference/ seminar/ workshops

- **Shrivastava O. P.:** International Conference On Chemistry for Mankind: Innovative Ideas in Life Sciences (ICCM-2011), 9-11th February, 2011 at Nagpur, PC-230.
- **K. S. Pitre:** 4th Conference on "Instrumental Methods of Analysis" Organized by Department of Chemistry, I.I.T. Roorkee, During 18-20 February 2011
- **Shrivastava O. P.:** National Conference on Recent Trends in Exotic Materials (26-28 August 2010) at Sharda University, G. Noida U. P.
- **Khan, F. :** Invited lecture on "Nanoporous Materials" at 'National Symposium on New Trends in Materials Research' held at ISCAS Institute of solid state & Materials Science in Jammu University, Jammu between 18 – 20, November, 2010.
- **Khan, F. :** Oral presentation on "Porous Materials" at 98th Indian Science Congress held at SRM University, Chennai 3- 7th of January, 2011.

- **Khan, F.:** Presentation on "Synthesis and Characterization of Nanoporous Materials" in National Review meeting of Nanoscience & Nanotechnology (NSNT) at IIT, Delhi, during 25-27 February, 2011.
- **R. N. Yadava; chaired,** a scientific session in National Seminar on Bioresource management in India, organized by Govt. Autonomous Girls P.G.College of Excellence Sagar from 26-27 March 2011.

Lectures delivered

- **Pitre K. S. :** Modified Carbon Based Electrodes As Medical Probes" at the 4th Conference On "Instrumental Methods of Analysis" Organised by Department of Chemistry, I.I.T. Roorkee, During 18-20 February 2011
- **Shrivastava O. P:** Invited lecture on Synthesis & Crystallographic, Characterization of titanium and zirconium based ceramic materials at National Conference on Recent Trends in Exotic Materials (26-28 August 2010), Sharda University, G. Noida U. P.
- **Khan, F. :** Invited lecture on "Nanoporous Materials" at 'National Symposium on New Trends in Materials Research' held at ISCAS Institute of solid state & Materials Science in Jammu University, Jammu between 18 – 20, November, 2010.
- **R.N. Yadav:** Delivered lecture as invited speaker on Bioresource management in India in National seminar organized by Govt. Girls P.G. College of Excellence Sagar, 26-27 March 2011.
- **A. P. Mishra,** Nov.12th, 2010; Invited Lectures in XXII Refresher Course (UGC), at Chemistry Deptt., Allahabad University.
- **A. P. Mishra,** Invited for Lecture in 29th Conference of ICC, at Punjab Univ. Chandigarh, Dec.19-21, 2010.
- **A. P. Mishra,** Feb. 23, 2011; Invited Lect (IYC-2011), Chemistry Deptt. MDS Univ, Ajmer.
- **A. P. Mishra,** March.14,2011; Invited Lect. (IYC-2011), on Bioinorganic Chemistry: Relevance in life processes; Chemistry Deptt., GKUniv., Haridwar
- **A. P. Mishra,** Feb, 20-21, 2010, Invited speaker& Chaired Session, National Conference on recent aspects of biological and medicinal chemistry (UGC, DST), L.R. College, Sahibabad (Meerut University).
- **A. P. Mishra,** Feb.24-26, 2010; Invited Speaker & Chaired Session, National Conference on Emerging trends in chemical sciences, B.K. University, Jhansi.
- **A. P. Mishra,** March 9-10, 2010; Invited Speaker (Chelation therapy: a greener approach to today's toxic world), National Symposium (UGC), Govt. Boys P.G.Nodal College, Sagar.

Representation on Boards/ Committees

- **Prof. R. N. Yadav:** Appointed counselor of India by Asian Allelopathy Society of India for the year 2010-2012.
- **Prof. R. N. Yadav:** Council member of Institution of Chemists (India) for 2010-2012.
- **Prof. A. P. Mishra:** Vice-President; Indian Council of Chemists, 2009-11

Chapter(s) in books

- Tiwari Sweety and **Pitre K.S.:** Microfaradaic Electrochemical Biosensors for the Study of Anticancer action of DNA Intercalating Drug Epirubicin. In Biosensors for Health, Environment and Bio security / Book 2", ISBN 978-953-37-443-6. In-Tech Open Access Publisher, Vienna, 2011.

Honors and awards

- Prof O. P. Shrivastava: Member, Mineral Subcommittee International Centre for Diffraction Data (ICDD), USA, 2010
- Prof F. Khan: K.A. Thakar award -2011, Journal of Institution of Chemists, Kolkata
- Prof. R.N. Yadava: Coordinator of India by Asian Allelopathy Society at South Agriculture University China for 2010-2012.
- Dr Rashmi Chourasia: awarded Dr D. S. Kothari Post Doctoral Fellowship, UGC New Delhi, 2010-2013.

Fellowships

- CSIR NET-01
- UGC Rajiv Gandhi Fellowship-03
- UGC merit scholarship-04
- MP council of science and technology-01
- DST INSPIRE fellowship-01