Ashok Kumar Singh

Professor
Department of Chemistry
Indian Institute of Technology Roorkee
Roorkee-247667, Uttarakhand, INDIA
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Mobile No.- 9412978289
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Research interest

- Macrocyclic synthesis
- Ion- selective electrodes
- Chemical Sensors
- Colorimetric and Fluorescent sensor

Summary detail

Name : Ashok Kumar Singh

Date of Birth : 1st July, 1951

Specialization : Macrocyclic synthesis, Ion- selective electrodes

Academic Qualifications : B.Sc. Chemistry, Physics, Maths, B.H.U., 1971
M.Sc. Chemistry, B.H.U., 1973
Ph.D. Chemistry, B.H.U., 1977

Telephone number : 01332-285798 (O), 285077 (R), 09412978289 (Mob.)

Employment : Banaras Hindu University (2 Years),
I.I.T Roorkee (University of Roorkee) >30 Years

Teaching Experience : >36 Years (UG & PG)

Research Experience : >40 Years

No. of Publications : 135 (8 Communicated)
Symposium-37 (Since 1996)

Ph.D. Theses Supervised : Awarded-23 (In Progress-07)

M.Phil/M.Tech Theses Supervised : 6

M.Sc. Theses Supervised : 50

Prize/Medals/Awards : National Scholarship
Outstanding Teacher's Award (2013 IIT Roorkee)

Academic Visit Abroad : France, Santiago, Poland, Atlanta (USA), Orlando (USA).

***Departmental Responsibilities*:** Officer Incharge Maintenance
Supt. Examination
Member Departmental Research Committee

Institutional Responsibilities	**:**	Coordinator Preparatory Course (2004-06) Chief Warden of Bhawan-for 12 Years Warden of Bhawan-for 5 Years Office on special duty (2005-06) Vice Chairman PG Admissions 2012 Chairman PG Admission 2013,2014 Chief Vigilance Officer 2011-2014
Research Projects	**:**	DST (1989-1992), CSIR (1993-1996), UGC Minor Research Project (1997-1998) UPCST (1998-2001), CSIR (2002-2005) MHRD (2004-2008), DRDO (2007-2010) CSIR (2010-2013)

CURRICULULM VITAE

Name and Designation : **Dr. Ashok Kumar Singh**
Professor

Date of Birth : 1st July, 1951

Institution : IIT Roorkee

Telephone number : 01332-285798 (O), 285077 ®, 09412978289 (Mob.)

Department : Department of Chemistry

Field of Research : Synthesis of macrocyclic compounds and Schiff bases and development of chemical sensors for determination of toxic and industrially important metals.

Field of Research : Synthesis of macrocyclic compounds and Schiff bases and development of chemical sensors for determination of toxic and industrially important metals.

Academic Qualifications:

S.N.	Degree	University/ Institution	% Marks	Division	Year	Subjects
1.	B.Sc.	B.H.U, Varanasi	71.7	First	1971	Phy., Chem., Maths
2.	M.Sc.	-do-	64.6	First	1973	Chemistry
3.	Ph.D.	-do-	----		1977	Chemistry

Extra-Curricular Activities :

Prize/Medals/Awards : National Scholarship
Outstanding Teacher's Award (2013 IIT Roorkee).

Academic Visit Abroad : France, Santiago, Poland, Atlanta (USA), Orlando (USA).

***Departmental Responsibilities*:**	Officer Incharge Maintenance
	Supt. Examination
	Member Departmental Research Committee
***Institutional Responsibilities* :**	Coordinator Preparatory Course (2004-06)
	Chief Warden of Bhawan-for 12 Years
	Warden of Bhawan-for 5 Years
	Office on special duty (2005-06)
	Vice Chairman PG Admissions 2012
	Chairman PG Admission 2013,2014
	Chief Vigilance Officer 2011-2014
***Research Projects* :**	DST (1989-1992), CSIR (1993-1996),
	UGC Minor Research Project (1997-1998)
	UPCST (1998-2001), CSIR (2002-2005)
	MHRD (2004-2008), DRDO (2007-2010)
	CSIR (2010-2013)

Teaching Experience:

- More than twenty eight years of teaching experience of Under graduate and Post graduate courses
- Worked as Lecturer from 1979-81 in Department of Chemistry, Banaras Hindu University.
- Worked as Lecturer from 1981-92 in Department of Chemistry, University of Roorkee.
- Worked as Reader from 1992-96 in Department of Chemistry, University of Roorkee.
- Worked as Associate Professor since 1996-04 in Department of Chemistry, Indian Institute of Technology, Roorkee.
- Working as a Professor since 2004 in the Department of Chemistry, Indian Institute of Technology, Roorkee.

Research Experience:

More than thirty eight years of research experience.

- Ph.D Theses supervised –23
- Ph.D Theses in progress – 07
- M.Phil Dissertation supervised –6
- M.Sc Dissertation supervised –50

Research Papers:

- Published – 135
- Press – 0
- Communicated – 8

Major Sponsored Research Projects:

- Polyazamacrocyclic complexes: Their reactivity and stereochemistry, DST, 1989-92.
- Synthetic, kinetic and stereochemical studies on the complexes of transition metals with nitrogen donor macrocycles carrying unsymmetrical ring, CSIR, 1993-96.
- Stereospecific additions to strained bicyclic system, DRIL, 1995-96.
- Substituent interactions in slow inverting aziridines, UGC minor project, 1997-98.
- Polyazamacrocyclic systems: Synthesis and applications as membrane sensor, UPCST, 1998-2001.
- Synthesis and analytical applications of some polyazamacrocycles and their complexes, CSIR, 2002-2005.
- Development of Chemical sensors for determination of industrially important metals, MHRD, 2004-2008.
- Synthesis and Analytical Application of Polydentate Macrocycles as Chemical Sensor, DRDO, 2007-2010.
- Synthesis of Chelating Ionophores and Electroanalytical investigations as Ion-selective Sensors, CSIR, 2010-2013.

Membership of Scientific Societies:

1. Life member Indian National Science congress Association.
2. Life member Indian Chemical Society.
3. Member of Indian Society for Electroanalytical Chemistry

Organization of Various Conferences:

- Member Organizing Committee in the Symposiums on Recent Trends in Instrumental Methods of Analysis, University of Roorkee, March 12-14, 1985; March 2-4, 1989; March 24-26, 1992; Sep 18-20, 1997.

- Member Organizing Committee in the National Symposiums on Radiation and Photochemistry, University of Roorkee, Feb. 21-23, 2001.
- Member Organizing Committee, 22nd Annual Conference of Indian Council of Chemists, IIT, Roorkee, Oct 17-19, 2003.
- Member Organizing Committee, International workshop on Chemical Evolution and Origin of life, March 14-16, 2008.

Peer Reviewer for International Journals

1. Sensors and Actuators (Elsevier)
2. Talanta (Elsevier)
3. Indian Journal of Chemistry (CSIR, New Delhi)
4. Indian Journal of Chemical technology (CSIR, New Delhi)
5. Electroanalysis (Wiley-VCH)
6. Journal of Incl. Phenomenon (Kluwer)
7. Anal Chim Acta (Elsevier)
8. Inorganic Chemistry Communications (Elsevier)
9. Journal of Applied Electrochemistry
10. Analytical Letters (Marcel Dekker)
11. Anal. Bioanal. Chem. (Springer)
12. Combinatorial Chemistry and High throughput screening
13. Monatshefte fur Chemie - Chemical Monthly (Springer).
14. Electrochimica Acta (Elsevier)
15. International Journal of Environmental Analytical Chemistry

DETAILS OF RESEARCH PUBLICATIONS

PAPERS PUBLISHED IN JOURNALS:

1. **Ashok Kumar Singh** and S. M. Verma
   Stereochemistry of bromination of cyclopentadiene maleic-anhydride adducts through conformational analysis about the N-N bond by NMR spectroscopy.
   Indian J. Chem., 14B (1976) 834.

2. **Ashok Kumar Singh** and S. M. Verma
   Configurational assignment of cyclopentadiene maleic-anhydride Diels-Alder adducts through conformational studies by NMR spectroscopy.
   Indian J. Chem., 15B (1977) 700.

3. **Ashok Kumar Singh** and S. M. Verma
   Structural assignment by NMR spectroscopy: Diel's-Alder adduct of 2,3-dimethylnaphthalene and 6,6-diphenylfulvalene with maleic-anhydride through their N-(diacylamino)imide derivatives.
   Bull. Chem. Soc. JAPAN, 51 (1978) 516.

4. **Ashok Kumar Singh** and S. M. Verma
   Electron impact study on isomeric Diel's-Alder adduct of cyclopentadiene maleic anhydride and their N-(diacylamino)imide derivatives
   Indian J. Chem., 18B (1979) 280.

5. **Ashok Kumar Singh** and S. M. Verma
   Stereochemical assignment of camphoroxime by NMR spectroscopy using tris(dipivalomethanato)europium(III).
   Indian J. Chem., 20B (1981) 33.

6. **Ashok Kumar Singh,** Mamta and S. M. Verma
   PMR spectral studies of Diel's-Alder adducts: Anthracene-Fumaric acid and □-Napthol-Fumaric acid.
   Indian J. Chem., 23B (1984) 631.

7. **Ashok Kumar Singh** and S. M. Verma
   Stereochemistry of iodine chloride addition to olefinic bond of Diel's-Alder adducts by PMR spectroscopy.
   Indian J. Chem., 23B (1984) 635.

8. **Ashok Kumar Sing,** S. K. Srivastava and Renu Khanna
   Anion exchange characteristics of Zirconium Tellurites.
   Indian J. Chem., **24A (1985) 254.**

9. **Ashok Kumar Singh,** S. K. Srivastava, Mridula Garg and Renu Khanna
Estimation Of Chromium(VI) in water, tannery and plating wastes.
Microchimica Acta, 111 (1985) 377.

10. **Ashok Kumar Singh** and S. M. Verma
Stereochemical studies by PMR spectroscopy: Methoxybromination of the olefinic bond in bicyclic systems.
Indian J. Chem., 25B (1986) 329.

11. **Ashok Kumar Singh** and S. K. Srivastava
Stereospecific addition of mercuric acetate to strained norbornene systems.
J. Indian Chem. Soc., LXIV, 292 (1987).

12. S. K. Srivastava, **Ashok Kumar Singh** and Renu Khanna
Anion exchange characteristics of Stannic Tellurites.
Indian J. Chem., 26A (1987) 534.

13. **Ashok Kumar Singh** and S. K. Srivastava
Stereochemistry of the oxime of N-hydroximide of □-naphthol maleic anhydride adduct**.**
J. Indian Chem. Soc., LXV, 732 (1988).

14. **Ashok Kumar Singh,** Rajumani Saikia and G. Bhattacharjee
Reaction of N-(2,4-dinitrophenoxy)-9,10-dihydroanthracene-9,10-endosuccinimide with hydroxide ion, pipyridine, cyclohexylamine and morpholine. Evidence for base catalysis.
Indian J. Chem., 27A (1988) 790.

15. **Ashok Kumar Singh,** G. Bhattacharjee and Rajumani Saikia
Kinetics of reaction of O-(2,4-dinitrophenyl)benzaldoxime with methyl amine, cyclohexylamine, piperidine. Reactivity at different electrophilic sites.
Tetrahedron, 44 (1988) 4536.

16. **Ashok Kumar Singh,** G. Bhattacharjee and Rajumani Saikia
Solvent effects on the kinetics of the reaction of 2,3-(9,10-dihydroanthracene-9,10-diyl)-N(2,4-dinitrophenoxy) with piperidine.
J. Chem. Soc., Perkin Trans., II; 999 (1989).

17. **Ashok Kumar Singh**, R. Bembi, S. M. Sondhi, A. K. Jhanji, T. G. Roy, J. W. Lown and R. G. Ball
Synthesis of isomeric 3,4,7,7,10,12,14,14-octamethyl-1,4,8,11-tetraazacyclo- tetradecane [Me_8(14)anes].
Bull. Chem. Soc. Japan, 62 (1989) 3701.

18. **Ashok Kumar Singh**, Sudha Yadava and G. Bhattacharjee
9,10-(1.4-dihydrosubstituted-naphthalene-2-oxo-endo/oxo-1,4-diyl)-N-aryl-succinimide:Configurational assignment by PMR spectroscopy.
J. Indian Chem. Soc., 67 (1990) 818.

19. **Ashok Kumar Singh,** S. K. Srivastava, R. Bembi and Ashutosh Sharma
Physico-chemical studies on the characteristics and disposal problems of small and large pulp and paper mill effluents.
Indian J. Environ. Protec., 10 (1990) 438.

20. **Ashok Kumar Singh** and Sudha Yadava
Stereochemical assignment by PMR spectroscopy: Methoxy bromination in norbornene systems.
Indian J. Chem., 30B (1991) 486.

21. G. Bhattacharjee, **Ashok Kumar Singh** and Rajumani Saikia
Kinetics of reaction of 2,3-(3-Norcarene-2,5-diyl)-N-(2,4-dinitrophenoxy) succinimide with hydroxide ion, piperidene, morpholine and cyclohexylamine. Base catalysis with hydroxide ion and piperidine.
J.Indian Chem Soc., 68 (1991) 407.

22. G. Bhattacharjee, **Ashok Kumar Singh** and Rajumani Saikia and Sudha Yadava
Base catalysed nucleophilic aromatic substitution reaction. Difference in reactivity between endo/exo-2,3-(cyclopentene-3′,5′-diyl)-N-(2′′,4′′-dinitrophenyl)succini- mide with hydroxide ion and piperidine.
Indian J. Chem., 32B (1993) 1214.

23. S. K. Srivastava, **Ashok Kumar Singh** and Ashutosh Sharma
Studies of the uptake of Lead and Zinc by lignin obtained from black liquor-a paper industry waste.
Environ. Tech., 15 (1994) 353.

24. G. Bhattacharjee, **Ashok Kumar Singh** and Priti Garola
Effect of nucleophile on the kinetics of the reaction of N-(2, 4-dinitrophenyl)-camphoroxime with cyclohexylamine and piperidine.
Indian J. Chem., 34B (1995) 129.

25. **Ashok Kumar Singh**, Sudeshna Chandra and Randhir Singh
Synthesis and charecterization of Macrocyclic complexes of nickel(II), cobalt(II) and copper(II) containing a tetradentate-N_6-macrocyclic ligand.
J. Indian Chem. Soc., 74 (1997) 5.

26. G. Bhattacharjee, **Ashok Kumar Singh** and Priti Garola
Solvent effect on the kinetics of the reaction of 2,3-(cyclopentene-3′,5′-diyl)-endo-N-(2′′, 4′′-dinitrophenoxy)succinimide with morpholine.
J. Indian Chem. Soc., 74 (1997) 231.

27. **Ashok Kumar Singh**, G. Bhattacharjee and Sudeshna Chandra
Synthesis, characterization and kinetic studies of acid promoted dissociation reaction of nickel(II) complex of a [Me_4 (14) tetraene-N_4] macrocyclic ligand.
J. Chem. Res., 7 (1997) 1651.

28. **Ashok Kumar Singh**, G. Bhattacharjee, Manendra Singh and Sudeshna Chandra
A new macrocyclic polystyrene based sensor for zinc.
Electroanalysis, 9 (1997) 1005.

29. **Ashok Kumar Singh**, G. Bhattacharjee, Manendra Singh and Sudeshna Chandra
A new macrocyclic ligand based sensor for nickel(II) ion.
Bull. Chem. Soc., Japan, 70 (1997) 2995.

30. **Ashok Kumar Singh**, Sudeshna Chandra and Seema Baniwal
Synthesis, characterization of 5,7,12,14-tetramethyl-1,4,8,11-tetraazacyclotetradeca-1,4,11,14-tetraene and its metal complexes with chromium(II), nickel(II), cobalt(II) and iron(II) metal ions.
J. Indian Chem. Soc., 75 (1998) 84.

31. G. Bhattacharjee, **Ashok Kumar Singh** and Anshu Gupta
Aminoanalysis of 2,3-(cyclopentene-3′,5′-diyl)-endo-N-(2′′,4′′-dinitrophenoxy) succinimide with morpholine, piperidine, pyrrolidine and cyclohexylamine in ethyl acetate.
J. Indian Chem. Soc., 75 (1998) 49.

32. **Ashok Kumar Singh**, G. Bhattacharjee, Seema Baniwal and Manendra Singh
A new PVC based membrane sensor of dibenzo-18-crown-6 for strontium.
J. Indian Chem. Soc., 76 (1999)53.

33. **Ashok Kumar Singh**, Shailendra, Amit Panwar and Seema Baniwal
Chromium(III)-selective electrode based on a macrocyclic compound.
Analyst, 124 (1999) 521.

34. Seema Baniwal, S. Chandra, A. Panwar and **Ashok Kumar Singh**
PVC based macrocyclic membrane for magnesium.
Talanta, 50 (1999) 499.

35. A. Panwar, Seema Baniwal, C. L. Sharma and **Ashok Kumar Singh**
A polystyrene based membrane electrode for cadmium(II) ion.
Fresenius J. Anal. Chem., 368 (2000) 768.

36. **Ashok Kumar Singh**, C. L. Sharma, Seema Baniwal and Amit Panwar
Nickel(II)-selective membrane electrode based on macrocyclic ligand. **Electroanalysis, 13 (2001) 1209.**

37. **Ashok Kumar Singh**, C. L. Sharma, S. Baniwal, R. Singh and Amit Panwar Strontium(II)-selective electrode based on macrocyclic ligand.
Anal. Lett., 14 (2001) 34.

38. **Ashok Kumar Singh**, Rupam Singh and Seema Baniwal
Kinetics of acid-promoted dissociation on reactions of Cu(II) macrocyclic complex.
Indian J. Chem., 41A (2002) 537.

39. **Ashok Kumar Singh**, Rupam Singh, Amit Panwar and Seema Baniwal
A new macrocyclic polystyrene based sensor for Cr(III) ions.
Anal. Bioanal. Chem., 372 (2002) 506.

40. **Ashok Kumar Singh**, Amit Panwar, Rupam Singh and Seema Baniwal
New bis macrocyclic complexes with transition metal ions.
Transition Met. Chem., 28 (2003) 160.

41. **Ashok Kumar Singh**, G. Bhattacharjee, Rupam Singh and Anshu Gupta Nucleofuge effect: The kinetics and mechanistic studies of the reactions of some aryl oximes and phenyl naphthyl ether with n-butylamine in acetonotrile.
J. Ind. Chem. Soc., 80 (2003) 95.

42. **Ashok Kumar Singh**, G. Bhattacharjee and Rupam Singh
A new PVC-membrane electrode based on a diazatetrathia (N_2S_4) macrocyclic ligand for selective determination of silver ion.
Anal. Lett., 36 (2003) 2623.

43. **Ashok Kumar Singh**, G. Bhattacharjee, Rupam Singh and Anshu Gupta
Effect of nucleophile on the kinetics of the reactions of O-(2',4'-dinitrophenyl)-4- phenyl-3-butene-2-one oxime in acetonitrile
J. Ind. Chem. Soc., 81 (2004) 38.

44. **Ashok Kumar Singh**, G. Bhattacharjee and Rupam Singh
Mercury (II)-selective membrane electrode using tetrathiadiazacyclotetradeca-2,9-diene as neutral carrier.
Sens. Actuators B, 99 (2004) 36.

45. **Ashok Kumar Singh**, G. Bhattacharjee, Rupam Singh and Priti Gairola
The kinetics of the reactions of O-(2,4-dinitrophenyl) indanone oxime with cyclohexylamine, piperidine and ethanolamine in acetonitrile.
Indian J. Chem., 42 A (2004) 1051.

46. **Ashok Kumar Singh**, Rupam Singh and Puja Saxena
Tetraazacyclohexadeca Macrocyclic ligand as a Neutral Carrier in Cr(III) Ion Selective Electrode
Sensors, 4, (2004) 187.

47. **Ashok Kumar Singh,** Rupam Singh and Puja Saxena
Macrocyclic metal complexes: Synthesis and characterization of 14- & 16-membered tetraaza macrocyclic complexes of transition metals.
Transition Met. Chem., 29 (2004) 867.

48. **Ashok Kumar Singh**, Puja Saxena and Rupam Singh
New cadmium (II)-selective electrode based on a tetraazacyclohexadeca macrocyclic ionophore.
Anal. Sci, 21 (2005) 179.

49. **Ashok Kumar Singh**, Rupam Singh and Puja Saxena
Lead Selective Potentiometric Sensor Based On Macrocyclic Ionophore [Pyo_2(16)Diene N_6]
Anal. Lett., 38 (2005) 589.

50. **Ashok Kumar Singh** , Rupam Singh, R.P. Singh and Puja Saxena
Novel potentiometric sensor for monitoring Barium(II) based on 2,3,4-pyridine- 1,3,5,7,12-pentaazacyclopentadeca-3-ene.
Sens. Actuators B, 106 (2005) 779.

51. **Ashok Kumar Singh** and Puja Saxena
A new PVC membrane electrode based on a thia substituted macrocyclic ionophore for potentiometric determination of Tl(I) ions.
Talanta, 66 (2005) 993.

52. **Ashok Kumar Singh**, Puja Saxena and Amit Panwar.
Manganese (II)-Selective PVC Membrane Electrode Based on Pentaaza macrocyclic Manganese Complex.
Sens. Actuators B, 110 (2005) 377.

53. **Ashok Kumar Singh** and Rupam Singh
A new PVC-membrane electrode based on a macrocyclic ionophore for selective determination of Ni(II) ions.
J. Inclusion Phenomena, 53 (2005) 249.

54. **A.K. Singh,** Sameena Mehtab, and Puja Saxena
Rubeanic Acid as Novel Carrier in construction of PVC based La(III)-selective membrane sensor.
Anal. Chim. Acta, 551 (2005) 45.

55. **Ashok Kumar Singh**, R. P. Singh and Puja Saxena
Cobalt (II)-selective electrode based on a newly synthesized macrocyclic compound
Sens. Actuators B, 114 (2006) 578.

56. **Ashok Kumar Singh**, Amit Panwar and Puja Saxena
Copper incorporated [Me_2(15)dieneN_4] macrocyclic complex for fabrication of PVC based membrane electrode.
J. Inclusion Phenomena, 54 (2006) 299.

57. **Ashok Kumar Singh,** Puja Saxena, Sameena Mehtab and Barkha Gupta.
Strontium(II)-Selective Electrode Based on a Macrocyclic Tetraamide.
Talanta, 62 (2006) 521.

58. **A.K. Singh,** Sameena Mehtab and Puja Saxena
A Novel Bromide Selective Polymeric Membrane electrode Based on Zn(II)Complex.
Talanta, 69 (2006) 1143.

59. **Ashok Kumar Singh** and Puja Saxena**.**
A Silver (I)-selective Electrode Based on a Tetrathia Macrocyclic Ionophore in a Polystyrene Matrix,
Anal. Bioanal. Chem., 385 (2006) 90.

60. **Ashok Kumar Singh**, A.K. Jain, Puja Saxena and Sameena Mehtab
Zn(II)-selective membrane electrode based on Tetraazamacrocycle [$Bzo_2Me_2Ph_2$(16)eneN_4]
Electroanalysis, 18 (2006) 1186.

61. **Ashok Kumar Singh,** Puja Saxena, Barkha Gupta and Sameena Mehtab
A selective membrane electrode for Lanthanum (III) ion based on a [$Bzo_2Me_2Pyo_2$(16)hexaeneN_6] as ionophore.
Anal. Sci., 22 (2006) 1.

62. **Ashok Kumar Singh**, V.K. Gupta, Sameena Mehtab and Barkha Gupta.
Cobalt (II) selective PVC membrane based on a Schiff base complex of N, N′-bis(salicylidene)-3,4-diaminotoluene.
Anal.. Chim. Acta, 566 (2006) 5.

63. **Ashok Kumar Singh**, Amit Panwar, Puja Saxena and Sameena Mehtab
Cobalt (II)-Selective Membrane Sensor Based on [Me_2(13)dieneN_4] Macrocyclic Cobalt Complex.
Anal. Bioanal. Chem., 544 (2006) 9.

64. **Ashok Kumar Singh,** Sameena Mehtab and A.K. Jain
Highly selective electrochemical sensor for copper(II) ion based on chelating ionophores.
Anal. Chim. Acta, 575 (2006) 25

65. **Ashok Kumar Singh,** V.K.Gupta, and Barkha Gupta
A Cerium (III) selective PVC membrane based on a Schiff base complex of N,N′-Bis [2-(salicylideneamino) ethyl] ethane-1,2-diamine.
Anal. Chim. Acta, 575 (2006) 198.

66. **Ashok Kumar Singh,** V.K.Gupta, and Barkha Gupta
Schiff Bases as Cadmium(II) selective ionophores in polymeric membrane electrodes
Anal. Chim. Acta, 583 (2007) 340.

67. **Ashok Kumar Singh,** Sameena Mehtab, Puja Saxena
A novel potentiometric membrane sensor for determination of Co^{2+} based on a 5-amino-3-methylisothiazole.
Sens. Actutators B, 120 (2007) 455.

68. **Ashok Kumar Singh,** V.K.Gupta, and Barkha Gupta
Chromium (III) selective membrane sensors based on Schiff bases as chelating ionophores.
Anal. Chim. Acta 585 (2007) 171.

69. **Ashok Kumar Singh** and Sameena Mehtab
Calcium (II)-selective potentiometric sensor based on α-furildioxime as neutral carrier
Sens. Actuators B 123 (2007) 429.

70. V.K. Gupta, **A.K. Singh** , M. Al Khayat , Barkha Gupta
Neutral carriers based polymeric membrane electrodes for selective determination of mercury (II)
Anal. Chim. Acta 590 (2007) 81.

71. **A.K. Singh,** G. Bhattacharjee and Anshu Gupta
Kinetic studies on the reactions of O-(2',4'-dinitrophenyl)1,7,7-trimethylbicyclo[2..1.1]heptan-2-one oxime with nucleophiles in aprotic solvent-mechanism for the uncatalysed pathway
J. Indian Chem. Soc. 84 (2007) 365.

72. **Ashok Kumar Singh**, Sameena Mehtab, Udai P. Singh, Vaibhave Aggarwal
Comparative studies of tridentate sulphur and nitrogen-containing ligands as ionophores for construction of cadmium ion-selective membrane sensors
Electroanalysis 19 (2007) 1213.

73. **Ashok Kumar Singh** and Puja Saxena
PVC Based Membrane Electrode for Nickel (II) Ions Incorporating a Tetraazamacrocycle as Ionophore.
Sens. Actuators B, 121 (2007) 349.

74. **Ashok Kumar Singh**, Udai Pratap Singh, Sameena Mehtab, Vaibhave Aggarwal
Thiocyanate selective sensor based on tripodal zinc complex for direct determination of thiocyanate in biological samples
Sens. Actuators B, 125 (2007) 453.

75. **Ashok Kumar Singh,** Sameena Mehtab, Udai P. Singh, Vaibhave Aggarwal,
Tripodal chelating ligands based sensor for selective determination of Zn(II) in biological and environmenta lsamples
Anal. Bioanal. Chem. , 388 (2007) 1867.

76. **A.K. Singh,** A.K. Jain, Sameena Mehtab
Ytterbium-selective polymeric membrane electrode based on substituted urea and thiourea as a suitable carrier
Anal. Chim. Acta, 597 (2007) 322.

77. **A.K. Singh,** V.K. Gupta, Barkha Gupta
Potentiometric sensor for the high-throughput determination of Tetramisole hydrochloride
Comb. Chem. High Throughput Screen, 10 (2007) 583.

78. **A.K. Singh,** V.K. Gupta, Barkha Gupta
Application of membrane sensors for the determination of alfuzosin hydrochloride in pharmaceutical preparations and biological fluids
Comb. Chem. High Throughput Screen., 10 (2007) 560.

79. **A.K. Singh**, V.K. Gupta, Barkha Gupta
Development of membrane sensors for determination of antiepileptic drugs in pharmaceuticals, plasma and urine
Anal. Bioanal. Chem., 389 (2007) 2019.

80. **Ashok Kumar Singh,** Sameena Mehtab
Iodide-selective polymeric membrane sensors based on Cd(II) complexes of N,N´-bis(salicylidene)-3,4-diaminotoluene and N,N´-bis(salicylidene)-1,4-diaminobutane
Talanta, 74, 806-814 (2008).

81. **Ashok Kumar Singh,** R. P. Singh, Sameena Mehtab
Mercury-Selective Membrane Electrode Based on Methyl Substituted Dibenzo Tetraphenyl Tetraaza Macrocycle
J. Inclusion Phenomena And Macrocycle Chemistry, 60 (2008) 9.

82. **A.K. Singh,** V.K. Gupta, Barkha Gupta
Electroanalytical performance of terbium(III) selective membrane electrode based on a neutral ionophore
Anal. Bioanal. Chem., 390 (2008) 2171.

83. **Ashok Kumar Singh,** Sameena Mehtab, Udai P. Singh, Vaibhave Aggarwal, Jitendra Tripodal cadmium complex and macrocyclic ligand based sensors for phosphate d etermination in environmental samples
Electroanalysis, 20 (2008) 1186.

84. **A.K. Singh,** Sameena Mehtab, U.P. Singh, V. Aggarwal,
Azide selective sensor based on tripodal iron complex for direct azide determination in aqueous samples,
Anal. Bioanal. Chem., 391 (2008) 2299.

85. Vinod K. Gupta, **Ashok K. Singh** and Manoj K. Pal
Ni(II) selective sensors based on Schiff bases membranes in poly(vinyl chloride)
Anal. Bioanal. Chem, 624 (2008) 223.

86. **A.K. Singh,** Sameena Mehtab, V. Aggarwal, U.P. Singh,
Nickel Pyrazolyl Borate Complexes: Synthesis, Structure and Analytical Application in Biological and Environmental Samples as Anion Selective Sensors,
Talanta, 77 (2008) 718.

87. **Ashok K. Singh,** Prerna Singh, Shibdas Banerjee
Development of electrochemical sensors for nano scale Tb(III) ion determination based on pendant macrocyclic ligands
Anal. Bioanal. Chem, 633 (2009) 109.

88. **A.K. Singh**, Prerna Singh, Sameena Mehtab,
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4. A Quadridentate Macrocyclic PVC Based Membrane Sensor for Magnesium. **The 8th International Conference on Bioinorganic Chemistry, Yokohama, JAPAN, July 27- August 1, 1997.**

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19. Electroanalytical studies on Poly(vinyl chloride) based membranes of Schiff bases for nano level detection of Cd(II). **Ist Regional Electrochemistry Meeting of South Asia-2008, 5^{th}-7^{th} August, 2008.**

20. Ni(II) selective sensors based on Schiff bases membranes in Poly(vinyl chloride). **Ist Regional Electrochemistry Meeting of South Asia-2008, 5^{th}-7^{th} August, 2008**.

21. Development of electrochemical sensors for nano scale Tb(III) ion determination based on pendant macrocyclic ligands. **Pittcon Conference & Expo, Chicago, March 8-13, 2009.**

22. Determination of Cobalt ions at nano level based on newly synthesized pendant armed macrocycle by polymeric membrane and coated graphite electrode. **7^{th} International High Energy Materials Conference & Exhibit (HEMCE-2009), 8-10 December 2009, HEMRL, Pune, INDIA.**

23. Determination of Cerium ion by polymeric membrane and coated graphite electrode based on novel pendant armed macrocycle. **The 7th WSEAS International Conference on ENVIRONMENT, ECOSYSTEMS and DEVELOPMENT (EED'09), Puerto De La Cruz, Canary Islands, Spain, December 14-16, 2009**

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Department of Chemistry IIT (BHU) Varanasi

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225th ECS MEETING 11-15 May 2014 Orlando, Florida

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Ph.D. Theses Supervised

S.N.	Title of Thesis	Name of Scholar	Year
1.	Studies with inorganic ion exchange gels and their membranes	Renu Khanna	1985
2.	Studies on nucleophilic reactions of some O-substituted oximes and related compounds	Ranjumoni Saikia	1987

3.	Studies on some reactions promoted by the complexes of transition metals with polyaza macrocycles	Seema Anand	1991
4.	Stereochemical and kinetic studies on some derivatives of Diels-Alder adducts	Sudha Yadav	1992
5.	Studies on the use of lignin obtained from black liquer (a paper industry waste) for the removal of some inorganic pollutions	Ashutosh Sharma	1993
6.	Studies of nucleophilic aromatic substitution reaction of some nitro activated substrates in aprotic solvents	Anshu Gupta	1994
7.	Studies on nucleophilic substitution of some nitro activated aromatic substrates	Priti Gairola	1994
8.	Physico-chemical studies on synthetic macrocycles and their analytical applications	Sudeshna Chandra	1997
9.	Synthesis and characterization of polyaza-macrocyclic complexes and their analytical applications	Seema Baniwal	1999
10.	Synthesis of some polyaza-macrocycles and their applications as electrochemical sensors	Amit Panwar	2001
11.	Physico-chemical studies of some polydentate macrocyclic complexes and their applications	Rupam Singh	2003
12.	Synthesis and characterization of some noble polyaza macromolecules and their analytical application as membrane sensor	R.P. Singh	2003
13.	Synthesis and Analytical application of some polydendate macrocycles and their complexes	Puja Saxena	2006
14.	Studies on Some Potentiometric Sensors for Ion Determination	Barkha Gupta	2008
15.	Electroanalytical Studies on Membrane Sensors for Ion Determination	Sameena Mehtab	2008
16.	Synthesis, Structural and reactivity studies of copper complexes	Sujata Kashyap	2011
17.	Synthesis and Analytical application of chelating ionophores as chemical sensors	Prerna Singh	2011
18.	Synthesis and Electroanalytical Studies Of Some Chelating Ionophores	Jitendra Singh	2011
19.	Synthesis, Structures And Physical Properties Of Some Lanthanide Complexes And Organic Salts	Nidhi Goel	2011

20.	Molecular Characterization Of Rhamnolipid And Its Effect On Candida Biofilm	Nivedita	2011
21.	Synthesis of chelating ionophores and electroanalytical applications as chemical sensors	Koteswara Rao bandi	2014
22.	Electroanalytical studies of chelating ionophore for ion determination	Anjali Upadhyay	2014
23.	Studies on Ligno-cellulosic isocyanate polymer composites	Monika Chauhan	2014

M.Sc. Dissertation Supervised

S. No.	Title of Thesis	Name of the Scholar	Year
1.	Synthesis and characterization of 2-amino benzothiazole and its derivatives	Manu agarwal	1982
2.	Synthesis and characterization of some biologically active pyrazoline-5-ones	V. Nalini	1983
3.	Stereospecific addition of bromine to the olefinic bonds in bicyclic system	G. Prabhakar Reddy	1985
4.	Fischer indole synthesis	Neeru agarwal	1986
5.	Synthesis and characterization of substituted phenyl tetrazoles	Anu Gupta	1987
6.	Stereochemical assignment: The Diel-Alder adduct of 1,3,5-cycloheptatriene and maleic anhydride	Kavita Verma	1988
7.	Synthesis and characterization of 2-pyrazolin-5-one mannich bases	S. Ravi Shankar	1989

8.	Synthesis and characterization of some heterocyclic compounds of pharmacological importance	Rima Laiker	1990
9.	Synthesis and characterization of aziridines from N-aminophthalimide and substituted olefins	Tripti Dhalve	1991
10.	Synthesis of some formyl derivatives using Vilsmeier reagent and their characterization	Y.V.S. Jagannath	1991
11.	Studies of hydrazones derived from N,N-diacyl hydrazines	Mona Gupta	1992
12.	Stereochemical studies of oximes of some cyclic ketones	Ritu Dhull	1993
13.	Synthesis, spectral and structural studies and an evaluation of the hydrogen bonding of some phenyl hydrazones	Archna Joshi	1993
14.	Synthesis and characterization of substituted tetrazoles	G.K. Janani	1993
15.	Stereochemical assignment of some ketoximes by PMR spectroscopy	Puneet Banga	1994
16.	Synthesis and characterization of some 1,2-diazole derivatives	Rachna Dhingra	1994
17.	Stereochemical assignment: Diel-Alder adducts of p-benzoquinone with cyclic dienes	Olinka mandiratta	1994
18.	Synthesis and characterization of chalcones and their epoxides	Mamta Rani	1995
19.	Synthesis and characterization of some phenyl hydrazones and their nitro derivatives	Atul Mittal	1995
20.	Synthesis and characterization of fourteen membered tetraaza macrocyclic complexes	Swati Sharma	1995
21.	Synthesis and characterization of some N_4 and N_6 macrocyclic complexes	Bhawana	1996
22.	Synthesis & characterization and kinetic studies of a new macrocyclic ligand and its metal complexes	Bhawana Kulshreshtha	1996
23.	Synthesis, characterization and stereochemical assignment of Diel-Alder adducts	Sugandha Agrawal	1996
24.	Kinetic studies on the aminolysis of 1-chloro-2,4-dinitrobenzene	Sonal Singhal	1997
25.	Synthesis and characterization of some phenyl substituted fourteen membered macrocycles	Monica Mohan	1997
26.	Synthesis and characterization of 14 and 16-membered tetraaza macrocyclic complexes	Monica Sharma	1998
27.	Synthesis and characterization of twelve and sixteen membered polyaza macrocyclic compounds	Tokeer Ahmad	2000

28.	Synthesis and characterization of fifteen & sixteen membered pentaaza & hexaaza macrocyclic complexes	Shaibal Banerjee	2001
29.	Synthesis and characterization of 12 & sixteen membered polyaza macrocyclic complexes	Soma Gupta	2002
30.	Synthesis and characterization of twelve and twenty membered tetraaza and hexaaza macrocyclic complexes	Somak Paul	2002
31.	Synthesis and characterization of thirteen and seventeen membered polyaza macrocyclic complexes	Neeta Bachheti	2002
32.	Synthesis and characterization of macrocyclic complexes	Vidhi Chaudhary	2003
33.	Synthesis and characterization of fourteen and sixteen membered polyaza macrocyclic complexes	Vaibhave Aggarwal	2004
34.	Synthesis and characterization of fourteen membered tetraaza macrocyclic ligand and its metal complexes.	Amit Kumar	2004
35.	Electroanalytical studies on a Poly(Vinyl Chloride)based membrane electrode for Cu(II) ions	K.V. Narsimha Rao	2005

36.	Synthesis and characterization of Polyazamacrocyclic complexes and ligands	Sunil Kumar Gupta	2005
37.	Synthesis and characterization of N_4 & N_6 Macrocyclic ligands and metal complexes of N_6 Ligand	Samarpita Kabiraj	2005

36.	Synthesis and characterization of Polyazamacrocyclic complexes and ligands	Sunil Kumar Gupta	2005
37.	Synthesis and characterization of N_4 & N_6 Macrocyclic ligands and metal complexes of N_6 Ligand	Samarpita Kabiraj	2005

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40.	Synthesis and Characterization of Zinc Complexes of Schiff Bases	Ashapurna Baral	2007
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42.	Synthesis and Characterization of Macrocyclic and Schiff base ligands and analytical applications of a Schiff base.	Bala	2008
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44.	Synthesis and Characterization of some Schiff bases and Macrocyclic ligands.	Sooraj K.	2010
45.	Synthesis and Characterization of Schiff bases and Macrocyclic ligands.	Suryoday Pradhan	2011
46.	Synthesis and Characterization of Schiff bases Contain 5-Amino-1,3,4-thiadiazole-2-thiol & thiazol-2-amine moities	Anand Kumar	2012
47.	Synthesis of Chalcones And Schiff base Macrocycles Containing 5-Amino-1,3,4-thiadiazole-2-thiol	Amit Kumar	2012
48.	Synthesis and Characterization of Novel Multidentate Schiff Bases	Sreenu Yesuraju	2013
49.	Synthesis, Characterisation and Electroanalytical Studies of Ionophores: 2-((thiazol-2-ylimino)methyl)phenol (L1) and 2-((thiazol-2-ylamino)methyl)phenol (L2)	Ravi Kumar	2014
50.	Synthesis, Characterisation of some chelating ionophores and their analytical application.	Vimal Swarnkar	2015

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S. No.	Title of Thesis	Name of the Scholar	Year
1.	Estimation of metal ions by macrocyclic membrane electrodes	Shailendra	1998
2.	Analysis of toxic metal ions based on macrocyclic membrane electrodes	Menka Ravivanshi	1999
3.	Physico chemical studies of synthesized macrocycles and their analytical applications	Sanjeev Kumar	2000
4.	Analytical applications of macrocycles	Sunil Kumar	2001
5.	Synthesis of chelating macrocycles based chemical sensors	Danishad K.A.	2003
6.	Synthesis, Characterization and Analytical Activity studies of Optically Active Pyrazoles	Nidhi Tyagi	2006