



Susheel Mittal

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Member Advisory Board, Analytical Methods (RSC)

URL: <http://www.researcherid.com/rid/C-1425-2010>

Public URL: <http://scholar.google.co.in/citations?user=qKD5kdIAAAAJ>

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Educational Details

- Matriculation with 72% marks from Pb Sch Edu Board in 1975
- BSc (Honours School in Chemistry) with CGPA 4.1/6.0 from Chemistry Deptt. GND University, Amritsar (Pb)
- MSc (Honours School in Chemistry, 1981) with CGPA 4.3/6.0 from Chemistry Deptt. GND University, Amritsar (Pb)
- PhD (Chemistry, 1986) in Analytical Chemistry from Chemistry Deptt. GND University, Amritsar (Pb)
- Post-Doc (CSIR, PSCST) at GND University, Amritsar (1986-1988)

Personal Details

- Date of Birth: August 2, 1960 (Amritsar)
- Residential Address: A-5, Thapar University Campus, Thapar University, Patiala, Pb
- Marital Status: Married

Participation at State Level

- Member, State Level Committee for Establishment of New Laboratories by Department of Water Supply and Sanitation Pb
- Member, Tender Committee, Rajiv Gandhi National Law University, Patiala
- Member, Board of studies, MM University, Sadopur Ambala (Hy).

Administrative Responsibilities

- Head, School of Chemistry & Biochemistry for about 9 years (2002 - 2011)
- **Dean (Research & Sponsored Projects) for about 4 years 7 months (2006 - 2010)**
- Professor-in-Charge, Sophisticated Analytical Instrument Laboratories (SAI Labs) **2012-contd**
- **Head Nava Nalanda Central Library, Thapar University (Acting) Oct 2012 - contd.**
- President, Senior Staff Club, Thapar University, Patiala for 4 years (2005-09)
- **Chairman and member of many University level committees of TU, Registrar(Acting),**
- Faculty advisor, Campus Environment Management, Thapar University, Patiala. **2013-Contd**

Teaching Interests

- Chemistry (General course for UG students of Engg), Physical Chemistry (UG students of Science)
- **Analytical Chemistry, Instrumental methods of analysis - Graduate students of Chemistry,**
- Environmental Chemistry - Graduate students of EnvEngg and MSc

Research Interests

- Neutral Carrier Ionophore Based Chemical Sensors using Potentiometry, Voltammetry and Amperometry, ISFET;
- **Biosensors for heavy metal ions, pesticides using whole cells**
- Inorganic ion-exchange materials: Synthesis, Characterization and Applications of for separation, ion sensing, catalysis, Membrane transport
- **Nanocomposites - Conducting polymers(PANI/PEANI)-Au/Ag/AgCl**
- Ambient air analysis (particulate and gaseous) and to study impact due to biomass burning on human health,
- **Effect of Heavy metal on BOD, Flyash mediated treatment of Municipal Solid Waste,**
- Effect of Crop Residue Burning on human health, Site selection for Solar PV based power generation units, Biomedical waste management

International Collaborations

- Lindoy, L.F. - **Ionophores for Chemical Sensing**
Centre for Heavy Metals Research, School of Chemistry, University of Sydney, NSW, 2006, **Australia**
- **Craig E. Banks - Screen Printed Electrodes**
Fac of Sci& Engg Sch of Biol Chem and Hlth Science, MMUni, Chester St, Manchester, M1 5GD Lancs, **UK**
- **Ummuhan Ocak - Ionophores for Chemical Sensing**
Department of Chemistry, Faculty of Arts and Sciences, KTU, Trabzon-61080, **Turkey.**

National Collaborations

- Gufran Beig (**Bhatnagar Awardee**) - **Modelling Air Pollution and Networking (MAPAN)** - A National Project of Ministry of Earth Sciences, GoI, Indian Institute of Tropical Meteorology, Pune
- Subodh Kumar (FNASc) - **Ionophores for Chemical Sensing**
Department of Chemistry, GND University, Amritsar (Pb)
- Prabhat K Gupta - **Chemical Metrology in Ambient Air Quality Measurements**
Chemical Metrology and Analytical Chemistry Division, National Physical Laboratory (CSIR), New Delhi
- **Ashok Kumar - Ion transport across Liquid Membranes, Conductometry**

School of Advanced Sciences, VIT University, Vellore

- Navneet Kaur – **Ionophore grafted polymers for chemical sensing**
Centre of Nanoscience and Nanotechnology, Panjab University, Chandigarh
- **Narinder Singh, Department of Chemistry, IIT Ropar**
- M L Singla – **Conducting Polymer–AgCl Nanocomposites**
Materials Research Division (Agrionics), Central Scientific Industrial Organisation (CSIR), Chandigarh

Milestones achieved in research projects

- **BOD inhibition due to heavy metals linked to oxidation potentials** -Wat Res,**34**(2000)147-152
- **New method developed for detection of lower detection limit of potentiometric chemical sensor**-
Sensors and Actuators B: **12**(2007)386-395
- **Selective ultra-trace biosensing of heavy metal ions with whole cell biosensors chronoamperometry** -
Current Analytical Chemistry, **8**(2012)
- **Loss of respiratory lung capacity due to Crop residue burning in North Western India** -
Sci of The Total Environ, **408**(2010)4440-45
- **Commentary by A Tedlar on Health effects of crop res burning on children** - Citation in Env Health
Perspectives (ACS) **118**(2010)a475
- **New conductometric method developed for simultaneous determination of any two lanthanides** -
Analytical Methods (RSC), **3**(2011)1290 (Hot article of the issue)
- **Monitoring of mercury ions in waste water stream at ultra trace level using whole cell based
amperometric biosensor** - Analytical Methods (Communicated).

Professional Societies

- Member, Advisory Board, **Analytical Methods** (Royal Society of Chemistry, UK)
- Member, Executive Committee, Indian Society of Electroanalytical Chemists (ISEAC), BARC, Mumbai.,
- Vice President, Metrology Society of India (MSI), Northern Chapter, Patiala
- Member, Editorial Board, Chitkara Chemistry Reviews
- Life member of ISEAC, ISAS, CRSI, SAEST, ITAS

Selected publications

H-Index: 12(GS), 11 (Researcher ID, Web of Science), Total Citations:483 (Google scholar),325(Res ID)

- PVC-based dicyclohexano-18-crown-6 sensor for La(III) ions, Mittal, SK, Kumar, SKA, Sharma, HK
Talanta,62 (2004) 801-805 **Times Cited: 71**
- 8-Hydroxyquinoline based neutral tripodal ionophore as a copper (II) selective electrode and the effect of
remote substituents on electrode properties, Mittal, Susheel K.; Kumar S K, Ashok; Gupta, Nidhi; et al.,
Analytica Chimica Acta, 585(2007)161-170 **Times Cited: 54**
- Toxic effect of metal ions on biochemical oxygen demand, Mittal, SK; Ratra, RK, Water Research, 34
(2000)147-152 **Times Cited: 33**
- Samarium(III) selective membrane sensor based on tin(IV) boratophosphate, Mittal, SK; Sharma, HK;
Kumar, ASK, Sensors Volume: 4 Issue: 8 Pages: 125-135 Published: AUG 2004, **Times Cited: 30**
- Ambient air quality during wheat and rice crop stubble burning episodes in Patiala, Mittal, Susheel K.; Singh,
Nirankar; Agarwal, Ravinder; et al. Atmospheric Environment, (2009)238-244, **Times Cited: 23**
- An imidazole based novel potentiometric PVC membrane sensor for aluminium (III) determination
RK Bera, SK Sahoo and SK Mittal, Int J Electrochemical Sci, 5(2010) 29-38. **Times Cited: 20**
- Study of size and mass distribution of particulate matter due to crop residue burning with seasonal variation
in rural area of Punjab, India, A Awasthi, R Agarwal, SK Mittal, N Singh, K Singh, PK Gupta
Journal of Environmental Monitoring 13(2011)1073-1081. **Times Cited: 19**
- PVC based dibenzo-18-crown-6 electrode for Ca(II) ions, Kumar, A; Mittal, SK, Sensors and Actuators B-
Chemical,99(2004)340-343 **Times Cited: 18**
- A Comparative Study of Linked 2, 2'-Dipyridylamine Ligand System as an Ion Selective Electrode for Ag (I)
Ions, Mittal, Susheel K.; Kumar, Pawan; Kumar, Ashok S. K.; et al., International Journal of Electrochemical
Science 5(2010)1984-1995. **Times Cited: 18**
- Thorium selective electrode using zirconium phosphoborate as electroactive material, Mittal, SK; Singh, PP,
Indian Journal of Chemistry Section A,34(1995)1009-1011 **Times Cited: 17**

Research supervision

Doctor of philosophy (completed)

1. Synthesis, characterisation and applications of some inorganic ion-exchangers
2. Some Inorganic Ion Exchange Materials as Sensors for Rare Earth Metals Ions
3. Investigations on Ionophore Based Chemical Sensors
4. Investigations on common treatment technologies for some biomedical wastes
5. Impact of Heavy Metal Ions on BOD Exertion
6. Novel synthetic approach for crystalline/granular Inorganic Ion Exchangers: Ion Exchange behaviour and application

7. Potentiometric Investigations on Cation-Selective Electrodes based on Macrocyclic and Acyclic Amides as Ionophores
8. Monitoring of Ambient air of Patiala City with special reference to Crop Residue Burning
9. Modeling and Simulation of Insolation for Solar PV and Thermal Based Power Plants in India
10. Leaching and eco-toxicity studies of metal ions in sewage sludge and flyash mixture
11. Neutral and Charged Receptors as Voltametric Sensors for Ions
12. Determination of lanthanides by conductometry using some sequestering agents
13. Chemical sensors based on pyridyl ionophores for selective determination of some transition metal ions
14. Synthesis and characterisation of pani/peani conducting polymers-Au/Ag nanoparticle composites
15. Microbial biosensors for some heavy metal ions

Doctor of philosophy (Ongoing) - 10

Potentiometric Chemical Sensors - 3 Voltammetric Biosensors - 1 ISFETs- 1 Ambient Air Analysis- 3
 Screen Printed electrodes-1 Ion-exchange membranes -1

Post graduation level: Completed - 25;

Ongoing - Nil

Sponsored Research Projects: 11

Completed

1. Synthetic Inorganic Ion Exchangers as catalysts in Simple Organic Reactions
(0.45 lac; UGC; 1995-97)
2. Applications of Respirometry to Design and Operation of Waste Water Treatment Plant
(3.35 lac; UGC; 1996-99)
3. Synthesis, Characterisation Applications and Electro Chemical Studies of some Zr based Heteropoly Acid Salts
(7.0 lac; DST; 1997-2000)
4. Cost effective Conductometric method for Trace level determination of Rare earth Metal Ions
(13.3 lac; NRB(DRDO); 2009-11)
5. Some Amide Based Ionophores as Sensors For Some Transition Metal Ions (12.0 lac; DST; 2006-2009)
6. Impact of Aerosols and Gaseous Pollutants in Ambient Air on Physiological Parameters of Human Health due to Agriculture Crop-Residue Burning in and Around Patiala
(Co-PI) (33.0 lac; DST; 2006-10)
7. Microbial Biosensors for Some Heavy Metal Ions (23 lac; NRB (DRDO); 2007-10)
8. Ion Selective Field Effect Transistors Based on Neutral Carrier Ionophores for Lanthanides
(9.0 lac; AICTE; 2009-12)

Ongoing

9. Design and Development of Diphenylether based Supramolecules for Electroanalytical Probes
(22.8 lac; BRNS 2012-15)
10. Particulate matter dose relationship with lung function efficiency of children during agricultural crop residue burning episodes
(40.0 lac ICMR 2012-15)
11. Modelling Atmospheric Pollution and Networking (MAPAN) - Patiala (MAPAN - 08)
(22.3 Lac, IITM, Pune 2013-17)

Career Publications in Journals till date

Researcher ID: C-2010-1425

Publications in International/National Journals

Publications upto 2006 Total IF (1- 32) = 29.073

1. PS Thind and SK Mittal, Studies on synthetic inorganic ion exchangers: Part VII. Quantitative, separations of binary mixtures of Mn(II) on arsenoantimonate column, Indian J. Chem., 22A (1983)718-720. (IF= 0.891)
2. PS Thind and SK Mittal, Particle diffusion kinetics of exchange for transition metal ions in crystalline tin(IV) antimonophosphate, Transition Metal Chem., 10(1985) 69-73. (IF= 1.022)
3. SK Mittal, Synthesis, physicochemical properties and applications of some tin based ion exchangers" J ChemSci (India), XII(1986)33-38. (IF= 1.177)
4. PS Thind, SK Mittal and S Gujral, Synthesis and physicochemical properties of zirconium phospho borate and its applications in the quantitative separations of lanthanides, Synth. React. Inorg. Met-Org Chem., 18(1988)593-607. (IF= 0.569)
5. PS Thind and SK Mittal, Stannic arsenate membrane in epoxy resin as Fe(III) selective electrode", Bull. Electrochem. (India), 5(1988) 413-416. (IF=0.165)
6. SK Mittal, Solid membrane electrode for the determination of La(III) presence of other rare earth cations" Bull. Electrochem. (India), 6(1989) 486-490. (IF=0.165)
7. RS Sandhu, S K Mittal and P I Singh, Solid membrane of tin(IV) arsenoantimonate in araldite as Pb(II) selective electrode" J Electrochem.Soc. (India)38(3)(1989)221-223. ----

8. PS Thind, S K Mittal and Ved Parkash, Analysis for aminoacids from rice bran and rapeseed meal "Journal of Oil Technologists Association of India, XII (2)(1990)32-35. ----
9. SK Mittal, Solid membranes of tin(iv) based ion exchangers as Pb(II) sensitive electrodes, Indian J Tech, 29(1991) 283-286. ----
10. SK Mittal and PS Thind, Electrochemical properties of tin(iv) antimonophosphate membrane, Bull. Electrochem. (India). 8(1992) 427-429. (IF=0.165)
11. SK Mittal and PS Thind, Electrochemical properties of tin(iv) antimonophosphate membrane, Bull. Electrochem. (India). VIII (9) (1992) 427-429 (IF=0.165)
12. SK Mittal, Ion exchanger calorimetry as analytical tool for micro determination of copper, Indian J Chem., 34A (1993) 1106-1107. (IF=0.891)
13. S K Mittal, A L J Rao, S Singh and R Kumar, Impact of sewage system on ground water quality o some areas of Patiala City, Indian J Environ Health, 36(1)(1994)51-53 ----
14. SK Mittal and Samarjit Goyal, Studies on suspended particulate matter in ambient air of an industrial area, Indian J Environ Protection, 15(11) (1995)839-844. ----
15. SK Mittal and Pritpal Singh, Thorium selective electrode using Zirconium Phosphoborate as an Electroactive Material, Indian J Chem., 34A(1995)1009-1011. (IF=0.891)
16. SK Mittal and Neha Verma, Critical analysis of ground water quality parameters, Indian J Environ Protection, 17(6) (1997)426-429. ----
17. SK Mittal and Pritpal Singh, Synthesis and ion exchange properties of tin(IV) antimoarsenate, Reactive & Functional Polymers, 40(1999)231-240. (IF=2.479)
18. SK Mittal and RK Ratra, Toxic effect of metal ions on biochemical oxygen demand, Water Research, 34 (2000)147-152. (IF=4.865)
19. SK Mittal and Pritpal Singh, Electrochemical Studies on Zirconium Phosphotungstate Based Heterogeneous Membranes, J of New Materials for Elect. Systems, 4(2001)221-226. (IF=0.625)
20. SK Mittal and Pritpal Singh, Exchange kinetic studies on Zirconium Antimono- phosphate, Ind J of Chem, 41A(2002) 500-505. (IF=0.891)
21. SK Mittal and Siloni Goel, Role of living organisms in BOD exertion in presence of heavy metal ions Indian J. of Environmental Protection, 23(7) (2003)782-784. ---
22. Susheel K Mittal*, Pritpal Singh and Harish Sharma, Synthesis of new zirconium based ion exchangers and their characterization, Journal of Ion Exchange (Japan), 16(1)(2005)76-82. ---
23. SK Mittal and S Goyal, SPM levels of an urban area (Patiala City) and its relation to automobile exhaust Clean Technologies and Environ. Policy, 6(2004)263-267. (IF=1.753)
24. K Mittal, AKumar SK &HK Sharma, PVC Based Dicyclohexano-18-crown-6 sensor for La (III) ions, Talanta, 62(2004)801-805. (IF=3.794)
25. SK Mittal & Ashok Kumar SK, PVC Based Dibenzo-18-crown-6 sensor for Ca (II) ions, Sensors and Actuators, Part B, 99(2004) 340-343. (IF=3.898)
26. SK Mittal, HK Sharma and S.K. A Kumar, Samarium (III) Selective Membrane Sensor Based on Tin (IV) Boratophosphate Sensors (Germany), 4(2004)125-135. . (IF=1.739)
27. SK Mittal, Siloni Goel and Ajay Sharma, Metal ion effect on BOD exertion at different temperatures, Int J of Environ Research and Public Health, 1(2004)132-137. (IF=1.605)
28. SK Mittal and Siloni Goel, BOD exertion in presence of some heavy Metal Ions: The pH effect" Pollution Research (India), 24(2)(2005)1-5. ----
29. SK Mittal and HK Sharma, Samarium (III) Selective Electrode Based On Zirconium (IV) Boratophosphate, J of Anal Chem, 60(2005) 1069-1072. . (IF=1.747)
30. SK Mittal and HK Sharma, Electrochemical studies on polystyrene based membrane of zirconium (IV) antimoarsenate, Indian J of Chem. 44A(2005)1610-1614. (IF=0.891)
31. SK Mittal, HK Sharma and S.K. A Kumar, Synthesis, characterization and analytical application of zirconium (IV) antimoarsenate as a potentiometric sensor, Reactive and Functional Polymers, 66(2006) 1174-1181.(IF=2.479)
32. SK Mittal* and HK Sharma, Synthesis and Characterization of Tin (IV) boratophosphate: A new inorganic ion exchanger, Journal of Ion Exchange, 17(2006)2-6. ---

Publications from 2007- 2009 Total IF= 15.82

33. SK Mittal, S.K. Kumar, S Kaur and S Kumar, Potentiometric performance of 2-aminothiophenol based dipodal ionophore as a silver sensing material" Sensors and Actuators B: Chemical, 121(2007)386-395. (IF=3.898)
34. S.K. Mittal, R.N. Sahu & JS Banait, New Method of Synthesis of Stannic Phosphotungstate and its Characterization as Ion Exchanger, J. Physical Sciences, 1(2007)1-7. ---
35. S.K Mittal, A Kumar S.K., NR Gupta, S Kaur and S Kumar, 8-Hydroxyquinoline based neutral tripodal ionophore as a copper (II) selective electrode and the effect of remote substituents on electrode properties" AnalyticaChimicaActa, 585(2007)161-170. (IF=4.555)
36. S.K. Mittal, J.S. Banait, R.N. Sahu, Particle Diffusion Kinetics of alkaline Metal Ions in Granular Stannic Phosphotungstate, Inorganic Chemistry, An Indian Journal, 2(2)(2007) ----

37. SK Mittal, RD.Pernita, H.K. Sharma, Potentiometric Determination of Terbium (III) ion Using Zirconium (IV) Boratophosphate as an Electroactive Material, *Research J. Chem&Envi.*, 11(2007)47-51. (IF=0.379)
38. NR Gupta, S Mittal, S Kumar and SK AKumar, Potentiometric studies of N,N'-Bis(2-dimethylaminoethyl)-N,N'-dimethyl-9,10 anthracenedimethan amine as a chemical sensing material for Zn(II) ions, *Materials Science and Engineering: C*, 28(2008)1025-1030. (IF=2.686)
39. NR Gupta, S Mittal, S.K. Ashok Kumar, MOcak,UOcak, Silver (I)-Selective Membrane Electrodes Based On Macrocycles Possessing Imine And Thioether Combinations, *Analytical Chemistry, An Indian Journal*, 7(4)(2008)
40. SK Mittal, AK S.K, NR Gupta, M Ocak, U Ocak, Silver Selective Electrode Based on Liquid Membrane Containing N2S2O2Macrocycle as Ionophore, *Indian J Chem*, 47A(2008)1676-1680. (IF=0.891)
41. SK Mittal, N Singh, R Agarwal, A Awasthi, PK Gupta, Ambient air quality during wheat and rice crop stubble burning episodes in Patiala, *Atmospheric Environment*, 43(2009)238-244. (IF=3.465)
42. M. Datta, S. Mittal, D. Goyal, Potentiometric Zn²⁺ Biosensor Based on Bacterial Cells *Asian J Biotechnology*, 1(2)(2009)67-73. ---

Publications in 2010 Total IF=14.622

43. SK Mittal and S Goel, BOD exertion and OD600 measurements in presence of heavy metal ions using microbes from dairy wastewater as a seed, *Journal of Water Resources and Protection*, 2(2010)478-488 IF:1.18(GS)
44. Susheel K Mittal, N Singh and KruneshGarg, Impact of seasonal variation on ambient air of an industrial town of Punjab (India) *J Environmental Science & Engineering (USA)* 2010 ---
45. R Agarwal, A Awasthi, SK Mittal, N Singh, PK Gupta, Effects of air pollution on respiratory parameters during the wheat-residue burning in Patiala, *Journal of Medical Engineering & Technology*, 34(2010)23-28. IF:0.527
46. N Singh, R Agarwal, A Awasthi, PK Gupta, SK Mittal, 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. *Atmospheric Environment*, 44(2010)1292-1300. IF:3.465
47. NSingh, S K Mittal, RAgarwal, AAwasthi&PK Gupta, Impact Assessment of Rice Crop Residue Burning on Levels of SPM, SO₂ and NO₂ in ambient air of Patiala city in India, *Int Journal of Env Anal Chemistry*, 90(2010)829-843. IF:1.162
48. A Awasthi, N Singh, S Mittal, PK. Gupta and R Agarwal, 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. IF:3.286
49. SK Mittal, R Kumar, P. Dogra, HK Sharma, Potentiometric determination of dysprosium(III) ion using zirconium(IV) antimonomolybdate as an electroactive material, *J of Anal Chem*, 65(2010)1045-1051. IF:0.747
50. SK Mittal, PKumar, A Kumar SK LF Lindoy, A Comparative Study of Linked 2, 2'-Dipyridylamine Ligand System as an Ion Selective Electrode for Ag (I) Ions, *Int. J. Electrochem. Sci.*, 5 (2010) 1984 - 1995. IF:3.729
51. SK Mittal, Ashok Kumar S.K and HK Sharm, Cerium(III)-Selective Membrane Electrode Based on Dibenzo-24-crown-8 as a Neutral Carrier, *E-Journal of Chemistry*, 7(2010) 849-855. IF:0.516

Publications in 2011 Total IF (52-55) 4.853

52. S.K. Ashok Kumar, SK Mittal, S Kumar, Highly Selective Potentiometric Determination of Ag(I) using 1,2,4,5-tetrakis (8-hydroxyquinolinoxy methyl) benzene Based Coated-wire Ion-selective Electrode, *Sensor Letters*, 9(2011)1390-1397. IF:0.819
53. A Awasthi R Agarwal, SK Mittal, N Singh, K Singh, PK Gupta, Study of size and mass distribution of particulate matter due to crop residue burning with seasonal variation in rural area of Punjab, India, *Journal of Environmental Monitoring* 13(2011) 1073-1081. IF:1.810
54. K Matharu, SK Mittal, A Kumar, SK, Systematic Approach for the Determination of Individual Lanthanides using Inexpensive ConductometricTechnique *Analytical Methods*, 3(2011)1290-1295. IF:1.036
55. A Jain, R Mehta, SK Mittal, Modeling impact of solar radiation on site selection for solar PV Power Plants in India" *International Journal of Green Energy*, 8(2011)486-498. IF:1.188

Publications in 2012 Total IF (56-72) 20.157

56. J.Singh, SK Mittal *Chlorella sp.* Based biosensor for selective determination of mercury in presence of silver ions, *Sensors and Actuators B*, 165(2012)48-52 IF:3.898
57. J.Singh, SK Mittal Whole cell based amperometric sensor with relative selectivity for zinc ions, *Analytical Methods*, 4(2012)1326-1331. **(RSC)** IF:1.03
58. SK Mittal, J Singh, Ashok Kumar SK *Chlorella* Modified Glassy Carbon Electrode as Whole Cell Microbial Sensor for Heavy Metal Ions, *Current Analytical Chemistry* 8(2012)365-372. IF:1.0
59. M.Kharub, A Rajor, SK Mittal, Assessment of total coliform removal and leaching of metal ions from sewage sludge-fly ash mixture at different pH and washing conditions, *African Journal of Biotechnology*, 11(2012)9612-9618. IF:0.57
60. Pawan Kumar, Ashok Kumar SK, Susheel K Mittal, Neutral Carrier-Based Zinc-Selective Electrode, *Sensor Letters*, 10(2012)979-984. IF:0.81
61. SK Mittal, K Kaur, Ashok Kumar SK, S Kumar, A Kumar, Anthrone derivatives as voltammetric sensors for applications in metal ion detection, *Sensor Letters*, 11(2) 223-236(2012) IF:0.819

62. R Agarwal, A Awasthi, N Singh, PK Gupta and SK. Mittal, Effects of exposure to rice-crop residue burning smoke on pulmonary functions and oxygen saturation level of human beings in Patiala (India), *Science of the total Environment*, 429(2012)161-166. **IF:3.286**
63. M.Kharub, A Rajor, S.K Mittal, Fly ash-Sewage Sludge Mixture as a barrier of heavy metal leaching Research *J of Chemistry and Environment*, 16(2012)22-26. **IF:0.379**
64. N R Gupta, S K Mittal and S K Sonkar, Trace Level Detection of Nickel Ions in Chocolate Samples Using Noval N4 Macrocycle Based Potentiometric Sensor, *Advanced Science, Engineering and Medicine* 5(2013)1-6. **IF: --**
65. AJain, Tuyet Vu, R Mehta, S K Mittal, Optimising the Cost and Performance of Parabolic Trough Solar Plants with Thermal Energy Storage in India, *Environmental Progress & Sustainable Energy* (Wiley) (DOI: 10.1002/ep.11660) **IF:1.649**
66. RAgarwal, A Awasthi, N Singh, PK Gupta, S K Mittal, 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 **IF:0.864**
67. Komal Matharu, Susheel K Mittal and Ashok Kumar SK, Conductometric Performance of 2-pole and 5-ring conductivity cell probe for lanthanides determination using EDTA and DCTA as potential sequestering agent, *Industrial & Engineering Chemistry Research (ACS)*, 51(2012)11328-11334. **IF.2.127**
68. Sujata Vohra, Manish Kumar, Susheel K. Mittal, M. L. Singla, Thermal and electrical behavior of silver chloride/polyaniline nanocomposite synthesized in aqueous medium using hydrogen peroxide, *J Mater Sci: Mater Electron* DOI 10.1007/s10854-012-0933-0 **IF: 1.076**
69. Amit Jain, P.N.B.V. Chalapathi Rao, Poulami Choudhury, Rajeev Mehta, Susheel K. Mittal, Optimization studies for hybrid and storage designs for parabolic solar trough systems with the system advisor model, *Environmental Progress and Sustainable Energy*, DOI: 10.1002/ep.11719 **IF: 1.649**
70. Komal Matharu Ashok Kumar SK and Susheel K Mittal, Improved response in 1,4 Dioxane as co-solvent during selective determination of lanthanides in binary mixtures by conductometry, *Current Analytical Chemistry* (In Press) **IF: 1.0**
71. C. Singh, SK Mittal, N. Kaur, Heterogeneously catalyzed selective esterification of benzoic acid using zirconium based ion exchangers, *Science Journal of Pure and Applied Chemistry* (In Press) **IF:**
72. Harminder Singh, A.K. Bhardwaj, M.L.Sehgal and Susheel K Mittal Electron spin resonance, nuclear quadrupole resonance, reflectance and magnetic parameters of cobalt (ii) and nickel (ii) complexes using density functional theory, *International Journal of Current Research and Review*, 4(22)(2012)12-28. **IF:--**

Publications in 2013 Total IF = 9.835

73. Sujata Vohra, Narinder Singh, Susheel K. Mittal, M. L. Singla, Thermal stability and electrical characteristics of poly(2-ethyleaniline)-Au nanocomposite, *J Mater Sci: Mater Electron*, DOI 10.1007/s10854-013-1156-8 **IF:1.966**
74. Harminder Singh, A.K. Bhardwaj, M.L.Sehgal and Susheel K Mittal*, 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,IV) & Chromium (III) complexes *International Journal of Current Research and Review*, 5(1)(2013)13-31. **IF:1.136**
75. Harminder Singh, A.K. Bhardwaj, M.L.Sehgal and Susheel K Mittal*, Calculating ESR Parameters (H^{\wedge} & ΔE_h) Of 4d And 5d transition metal ion complexes: A DFT Study *International Journal of Current Research and Review*, 5(5)(2013)71-88. **IF: 1.136**
76. KaramjeetKaur, Susheel K Mittal, Ashok Kumar SK, Ashwani Kumar, Subodh Kumar, Jonathan P. Metters and Craig E Banks, Disposable Screen Printed Electrode for Mercury Ions, *Int. J. Electrochem. Sci.*, 8(2013) **IF: 1.956**
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Important instrument purchased from funded projects

- Ion-analysers 2 (EA 920, 710+, Thermo Orion with electrodes for Ni(II), Cu(II), Cd(II), Divalent Cations) **(5.0 Lac)**
- Electronic Balance (Sartorius BP 110) **(0.8 Lac)**
- High Volume Samplers (APM-410, Envirotech) -2 **(1.0 Lac)**
- Water Bath TW20 (Julabo) Ambient to 100° C **(1.5 Lac)**
- Potentiostats-2 (Eco-Chemie, Autolab 12, Netherlands), (Gamry, Interface 1000) **(7.5 Lac)**
- 856 Conductivitymeter (Metro-ohm) with 5-ring conductivity cell **(5.0 Lac)**
- Continuous Ambient Air Quality Monitoring Station (under MoU with IITM, Pune) with sensors for PM10, PM2.5, Ozone, CO, NOx, NMHC, HC, BC, Weather monitoring station with sensors for Wind Speed, Wind Direction, Solar Radiations, Rain Fall, Humidity, Temperature **(100 Lac)**
- Precision Source Measurement Unit 2901A (Agilent, USA) **(4.5 Lac)**
- UV-Vis Spectrometer (ECIL) **(3.0 Lac)**
- Potentiostat (Gamry, Interface 1000) **(5.0 Lac)**
- Aerosol Spectrometer (1.108, GRIMM) **(11.0 Lac)**