



**Susheel Mittal CChem FRSC**

**Vice Chancellor**

**Sardar Beant Singh State University, Gurdaspur(Pb)**

Member, Advisory Board, *Analytical Methods (RSC)*

Member, Editorial Board: 'C' – *Journal of Carbon Research (MDPI)*, *Rasayan J Chem*

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**H-Index** : Google Scholar – 22, Web of Science – 19, Scopus - 19

**Publons** : <https://publons.com/researcher/1380561/susheel-mittal/>

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**Websites** : <https://sites.google.com/view/drsusheelmittal>, <http://scbc.thapar.edu/facultydetails/MTMMyNQ==>

**Google Scholar:** <http://scholar.google.co.in/citations?user=qKD5kdIAAAAJ>

**Research:** Voltammetric Chemical Sensing, Screen Printed Electrodes/ISFETS as Microbial Biosensors,

**Interests** Nano-composite Ion-Exchange materials Ambient Air Quality, Crop Residue Burning and Health

#### **Educational Details**

- BSc (Hons Sch in Chemistry) with CGPA 4.1/6.0 from Chemistry Deptt. GND University, Amritsar (Pb)
- MSc (Hons Sch in Chemistry, 1981) with CGPA 4.3/6.0 from Chem. Deptt. GND University, Amritsar(Pb)
- PhD (DAE, BARC 1982-1986) in Analytical Chemistry from Chem. Deptt. GND University, Amritsar(Pb)
- Post-Doc (CSIR, PSCST, 1986-87, 1988-89) at Chemistry Deptt. GND University, Amritsar (Pb)

#### **Administrative Responsibilities (Including service details)**

- **Deputy Director**, Thapar University, **Jan 2015 – Mar 2016**.
- **Dean** (Research & Sponsored Projects), **Feb 2006 – Sept 2010**.
- **Senior Prof & Head**, School of Chemistry & Biochemistry, **Apr 2002 – Aug 2011, Feb 2021-Nov 2021**
- **Professor-in-Charge**, Sophisticated Analytical Instrument Laboratories (SAI Labs) **Dec 2012 – Nov 2021**
- Member, **Board of Governors** (BOG) of Thapar University, **Jan 2014 to Dec 2015**.
- **Head** (Acting), Nava Nalanda Central Library, Thapar University, **Oct 2012 – Feb 2017**.
- **Faculty Advisor**, Campus Environment Management, Thapar University **2013 – 2021**
- **Registrar** (Acting) for stop gap period of 3 months in **2005** at Thapar University
- **President**, Senior Staff Club, Thapar University, **April 2005 – Mar 2009**.
- **Chairman** of many University level committees of TU like UMC, ARC, Radiation Safety and Storage, Central Exam of University, Admission Committee for UG programmes, Student Counseling & Dev.
- **Member** of High powered Committee of Thapar University who visited **Trinity College of Dublin** (Ireland) in **June 2014** to establish Partnership in Education followed by another visit in **October 2015**.

#### **Employment Details**

- **Senior Professor**, Thapar Instt, Patiala (on lien as VC at SBS State Univ. GSP) Teaching & Res. **2010-2021**
- **Professor**, Thapar Instt, Patiala, **2003 – 2010**, Teaching & Research
- **Associate Prof.**, Thapar Instt, Patiala, **1997-2003**, Teaching & Research
- **Asstt Professor**, Thapar Instt, Patiala, **1989-1997**, Teaching & Research
- **Lecturer (Adhoc)**, GND University, Amritsar, Chemistry Deptt., **1987-88**, Teaching & Research
- **Chemist**, Partap Steel Rolling Mills, Chheharta (Amritsar), **1981-82** (8 months), R&D Section

#### **Teaching Interests**

- PhD and PG Courses - Analytical Chem, Instrumental Methods of Analysis, Special Topics in Chem.
- Postgraduate students of Environmental Engg and MSc (Chemistry) - Environmental Chemistry
- UG (Engg Programmes) Chemistry (General course for UG students of Engg), Physical Chemistry

#### **Research Interests**

- Chemical Sensors for heavy metal ions, pesticides and pharma drugs using Potentiometry, Voltammetry, Amperometry, ISFET and Spectrophotometry using Nanoparticle embedded Neutral Carrier Ionophores
- Whole cell based Microbial Biosensors using GC and ITO glass electrodes for heavy metal ions, pesticides
- Nano-composite Inorganic ion-exchange materials: Synthesis, Characterization and Applications
- Monitoring of PM in ambient air and its impact **on respiratory health** due to **biomass burning**
- Prediction models for **ground level ozone** using particulate and gaseous concentrations in the ambient air.
- BOD - Effect of Heavy metal, Bio-Medical Waste Management, Site selection for Solar PV Power Stations

## Outreach

- **Member selection committees** for recruitment of faculty at GGSW Univ, FGH; BBSB Engg College, IKG PTU, GND Univ, Amritsar
- External Expert in Institution's Innovation Council (IIC) of **Central University of Punjab(CUP)**, Bathinda
- Member, **Board of Studies** in Chemistry and Chemical Engg at **MRS PTU, Bathinda**; Mata Gujri College, F'garh Sahib, MM Univ, Mullana(Ambala); Pbi Univ, Patiala
- **Keynote Speaker/Chief Guest** in National Conferences at MM University, Modi College, Mata Gujri College, GB College, Faridkot, SGGSWU, Fatehgarh Sahib, besides 30 invited talks in India and abroad
- **PhD theses evaluation** for GGS IP University, Delhi; Agra University; Guwahati University; HBNI, BARC, Mumbai; Avinashlingam Women University, Coimbatore; Meerut University; Punjabi University, Patiala, Manav Rachna International University, Faridabad. MM University, (Mullana)Ambala
- **PhD proposal evaluation** for SLIET, Longowal; PTU, Kapurthala, MM Univ, Mullana, LPU.
- Member of **Expert Committee** of Pb Pollution Control Board (PPCB) for monitoring Research Project of PSCST on Recovery of Silica from Rice Husk Ash, Impact on Env due to change ..... of pharma company
- **Expert Member** for Establishment of State level Labs of Pb State Board of Water Supply & Sanitation
- Member, **Tender Committee** for the Civil Works at **RGN Law University**, Patiala since 2012.

## International Collaborations in Research

- Dr Craig E Banks FRSC, Fac of Sci & Engg, MM Uni, Manchester, **UK**– Screen Printed Electrodes
- Dr Morloes Peeters – Newcastle upon Tyne, Northumberland, United Kingdom – Biosensors
- Dr. Zholt Kormosh, Deptt of Anal Chem & Chem Engg, Eastern European National Uni., Lesya Ukraïнка

## National Collaborations in Research

- Subodh Kumar (FNASc), Deptt of Chemistry, GND Univ, **Amritsar** – Ionophores for Chemical Sensing
- AshokKumar SK, School of Adv Sci, VIT University, **Vellore** – Ion transport across Liquid Membranes
- Navneet Kaur, Deptt of Chem, Panjab Uni, **Chandigarh** – Ionophore grafted polymers for chemicalsensing
- Narinder Singh, **IIT Ropar** - Ionophores for Chemical Sensing, Podands as voltammetric sensors
- Sunita Kumbhat FRSC, Emeritus Professor in Chemistry, JNV University, **Jodhpur** - Biosensors
- Gufran Beig (Bhatnagar Awardee), Indian Institute of Tropical Meteorology (IITM), **Pune** - Modelling Air Pollution and Networking (MAPAN) – A National Project of Ministry of Earth Sciences, GoI,
- Dr Shankar Aggarwal, National Physical Laboratory, **New Delhi** –Ambient Air Quality Measurements

## Professional Societies

- **Chartered Chemist** (2017) and **Fellow, Royal Society of Chemistry (UK)** - 2014 Onwards.
- Member, **Advisory Board, Analytical Methods** (Royal Society of Chemistry, UK)
- Member, **Editorial Board** of C-Journal of Carbon Research (MDPI, Germany), Rasayan J of Chem.India
- Life member of ISEAC, ISAS, CRSI, SAEST, ITAS, MSI

## Research Supervision (including joint supervision)

### Doctor of philosophy

Awarded - 25

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 Inorg Ion Exchangers: Ion Exchange behaviour and application
7. Potentiometric Investigations on Cation-Selective Electrodes based on Macrocyclic 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 pyridylionophores 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
16. Design and Development of Aryl ether based Receptors for Electroanalytical Applications
17. Receptors based on diphenylether and its aza analogues for ion recognition using potentiometry
18. Cause-effect modeling of crop residue burning on urban school children health
19. Synthesis, Characterization and applications of Some Metal-Organic Framework (MOF) Composites with Metal Oxide Nanoparticles
20. Voltammetric Sensors Based on Schiff Bases for Cation/Anion Recognition

21. Development of Some Biosensors and Their Analytical Applications
22. Impact of CRB on production of surface ozone in Punjab plains of North –West Indo –Gangetic Plains: Development of prediction model using statistical approach
23. Imine-Nanomaterial Composites as Receptors for Potentiometric and Voltammetric Sensing of Ions
24. Source apportionment studies to identify particulate matter from crop residue burning affecting human health
25. Triphenyl ether and triphenyl amine as chemical sensors for transition metal ions using electrochemical and spectroscopic techniques

#### Doctor of philosophy (Ongoing) – 4

Voltammetric Chemical Sensors and Biosensors – 2 Ambient Air Quality– 1 Indl Waste Water Treatment - 1

#### Masters level (M Tech, M Phil, MSc)

Completed - 31

#### Sponsored Research Projects: 12

- > Completed (National) :12, INR 18,600,000 from DST/UGC/NRB/AICTE/BRNS/ICMR/IITM(MoES))
- > Completed (National) : **Under MoU with** Indian Instt of Tropical Meteorology Pune, MoES, GoI
- > Completed (International) :1, GBP 100,000 **from RAEngg (UK) - Newton-Fund**

#### Milestones achieved in research

- **Indian Patents Granted**
  - Novel disposable sensor for specific detection of aluminium ions - Ind Pat No. 336447 dated May 4, 2020
  - Novel chemical compound for detection and estimation of cerium (III)–Ind Pat No.343116 dated August 2, 2020
- Achieved status of Chartered Chemist (**CChem**) and Fellow, RSC (**FRSC**) by one of the largest Chemical Societies in the World without any formal Education/ Training from abroad.
- **BOD inhibition** due to heavy metals linked to oxidation potentials of heavy metals –Wat Res,34(2000) 147
- New simpler method for **lower limit of detection** in potentiometric Chemical sensors- Sens &Act B:12 (2007)386-395
- **Loss of respiratory lung capacity due to CRB** in North Western India - Sci of Total Env.408(2010) 4440 (Commentary by ATedlar on Health effects of CRB on children - in *Env Hlth Pers.(ACS) 118(2010)a475*)
- New **conductometric** method developed for **simultaneous determination of any two lanthanides** - Anal Meth (RSC), 3(2011) 1290 (**Hot article of the issue**)
- **Online monitoring of mercury ions** in waste water stream at ultra trace level using whole cell based amperometric biosensor – Analytical Methods, 6(2014)5741-5745.
- **RSC Roadshow India 2014** (Invited Talk & Panelist) workshop at Univ. of Hyderabad and at IIT Delhi
- **Selective determ of Al(III) with** disposable screen printed electrode at trace level, SAB, 239(2017)17
- ‘Innovative research in pedagogy for **Mini-MOOCs** blended with instruction strategies to enhance quality of Higher Education’ an International Research Project (GBP 100,000) funded by Royal Academy of Engineering (UK) under Newton Fund supported jointly by Thapar University.
- **Respiratory Health linked to BMI status of human subjects:** Effect of particulate pollution due to Crop Residue Burning (MAPAN 33(2)(2018)113-122)
- **Prediction model for prediction of surface ozone in ambient air of Patiala developed.**

#### Organisation of Seminars/ Symposia/ Conferences at Thapar Institute, Patiala

- National Symposium on Green Chemistry: Applications in Science and Engineering" Feb. 5-6, 2009.
- 73rd BARC-IANCAS National Workshop on Radiochemistry & Applications of Radioisotopes, Apr 3-11,2011
- Workshop “Train the Trainer” was organised under the research project “Innovative research in pedagogy for mini-moocs blended with instruction strategies to enhance quality of higher” sponsored by Royal Academy of Engineering (UK) from 3<sup>rd</sup> – 4<sup>th</sup> March 2017

#### Career Publications in Journals till date (Total Impact Factor = 220+ upto 2020\*)

|                           |             |                  |
|---------------------------|-------------|------------------|
| Publications 1983-2011    | (1- 56)     | Total IF = 90.74 |
| Publications in 2012,2013 | (57-75)     | Total IF = 28.19 |
| Publications in 2014,2015 | (76-88)     | Total IF = 22.97 |
| Publications in 2016,2017 | (89-108)    | Total IF = 37.51 |
| Publications in 2018      | (109-116)   | Total IF = 18.42 |
| Publications in 2019      | (117-122)   | Total IF = 12.24 |
| Publications in 2020      | (123 – 132) | Total IF = 14.39 |

Place: Patiala

Signature: Susheel Mittal

## List of Publications in Journals and Conferences

### Publications in International/National Journals

#### Publications upto 2006

Total IF (1- 32) = 50.57

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., 22 (1983)718-720. (IF=0.729)
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=1.358)
3. SK Mittal, Synthesis, physicochemical properties...tin based ion exchangers" JChemSci (India), XII(1986)33-38. ---
4. PS Thind, SK Mittal, Synthesis and ion exchange properties of tin(IV) antimonophosphate and its applications in binary separations of metal ions, Synth, React. Inorg. Met.-Org. Chem., 17(1)(1987)93-113. (IF=0.533)
5. 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= 0.533)
6. PS Thind and SK Mittal, Stannic arsenate membrane in epoxy resin as Fe(III) selective electrode", Bull. Elecchem.(India), 5(1988)413-416. (IF=0.24)
7. SK Mittal, Solid membrane... La(III) in presence of other rare earth cations" Bull. Elec chem.(India),6(1989)486 (IF=0.24)
8. 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. ---
9. PS Thind, SK Mittal and VedParkash, Analysis for aminoacids from ricebran and rapeseed meal"Journal of Oil Technologists Association of India, XII (2)(1990)32-35. ---
10. SK Mittal, Solid membranes of tin(iv)... exchangers as Pb(II) sensitive electrodes, Indian J Tech, 29(1991) 283-286. ---
11. SK Mittal and PS Thind, Electrochemical ... membrane, Bull. Electrochem. (India). 8(1992) 427-429. (IF=0.24)
12. SK Mittal, Ion exchanger colorimetry .... determination of copper, Indian J Chem., 34A (1993) 1106-1107. (IF=0.729)
13. S K Mittal, A L J Rao, S Singh and R Kumar, Impact of sewage system on ground water quality of some areas of Patiala City, Indian J Environ Health, 36(1)(1994)51-53 ---
14. SK Mittal and Samarjit Goyal, Studies on suspended....air of an industrial area, Indian J Env Prot, 15(11) (1995)839-844
15. SK Mittal and PP Singh, Thorium selective electrode....Electroactive Material, Ind JChem.,34A(1995)1009-1011 (IF=0.729)
16. SK Mittal and NehaVerma, Critical analysis of ground water quality parameters, Ind J Env Prot, 17(6) (1997)426-429. ---
17. SK Mittal and PP Singh, Synthesis and ion exchange ... antimonarsenate, React & Func Poly, 40(1999)231-240. (IF=3.151)
18. SK Mittal and RK Ratra, Toxic effect of metal ions on biochemical oxygen demand, Wat Res, 34(2000)147-152 (IF=6.942)
19. SK Mittal and PP Singh, Electrochemical Studies on Zirconium...Membranes, J NewMatElect.Sys, 4(2001)221-226. (IF=0.222)
20. SK Mittal and Pritpal Singh, Exchange kinetic...Zirconium Antimonophosphate, Ind J Chem, 41A(2002)500-505 (IF=0.729)
21. SK Mittal and Siloni Goel, Role of living organisms in BOD exertion.....heavy metal ions, Ind J. of Env Prot, 23(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=3.331)
24. SK Mittal, A Kumar SK & HK Sharma, PVC Based Dicyclohexano.... La(III) ions, Talanta, 62(2004)801-805. (IF= 4.162)
25. SK Mittal & A Kumar SK, PVC Based Dibenzo-18-crown-6 .... Ca(II) ions, Sens & Actu:B, 99(2004)340-343 (IF=5.401)
26. SK Mittal, HK Sharma and SKA Kumar, Samarium (III) .... Tin(IV) Boratophosphate, Sensors, 4(2004)125-135. (IF=2.677)
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=2.101)
28. SK Mittal and Siloni Goel, BOD exertion ... heavy Metal Ions: The pH effect" Pollution Research (India), 24(2)(2005)1-5. ---
29. SK Mittal and HK Sharma, Samarium (III) Selective ... Boratophosphate, J of Anal Chem, 60(2005) 1069-1072. (IF=0.723)
30. SK Mittal and HK Sharma, Electrochemical studies on ..... Zr(IV) antimonarsenate, Ind J of Chem. 44A(2005)1610(IF=0.729).
31. SK Mittal, HK Sharma and S.K. A Kumar, Synthesis, characterization and analytical application of zirconium (IV) antimonarsenate as a potentiometric sensor, Reactive and Functional Polymers, 66(2006) 1174-1181. (IF=3.151)
32. SK Mittal and HK Sharma, Synthesis and Characterization of Tin (IV) boratophosphate: A new inorganic ion exchanger, J of Ion Exchange, 17(2006)2-6.

#### Publications from 2007- 2009 (33 to 42)

Total IF= 18.87

33. SK Mittal, S.K. Kumar, S Kaur and S Kumar, Potentiometric performance of 2-aminothiophenol based dipodalionophore as a silver sensing material" Sensors and Actuators B: Chemical, 121(2007)386-395. (IF=5.667)
34. S.K. Mittal, R.N. Sahu & JS Banait, New Method of Synthesis of Stannic Phosphotungstate ..... 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 tripodalionophore as a copper (II) selective electrode ..... electrode properties" Anal Chim Acta, 585(2007)161-170. (IF=4.950)
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. ---
38. NR Gupta, S Mittal, S Kumar and SK A Kumar, Potentiometric studies of N,N'-Bis(2-dimethylaminoethyl)-N,N'-dimethyl-9,10 anthracene .... as a chemical sensing material for Zn(II) ions, Mat Sci and Engg: C, 28(2008)1025-1030. (IF=4.164)
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=0.729)
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=3.629)
42. M. Datta, S. Mittal, D. Goyal, Potentiometric Zn<sup>2+</sup> Biosensor Based on Bacterial Cells, Asian J Biotech, 1(2)(2009)67-73. ---

#### Publications in 2010

Total IF=14.91

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=0.95)
44. SK Mittal, Raj Kumar, Pernita Dogra, HK Sharma, Potentiometric determination of Dysprosium(III) Ion using Zirconium(IV) Antimonomolybdate as an Electroactive Material, *J Analytical Chemistry*, 65(2010)1045-2051 (IF=0.971)
45. SK Mittal, N Singh and Krunesh Garg, Impact of seasonal variation on ambient air of an industrial town of Punjab (India), *J Environmental Science & Engineering (USA)*, 4(6)(2010)31-36. ---
46. 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. ---
47. 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=3.708)
48. N Singh, SK Mittal, R Agarwal, AAwasthi & PK Gupta, 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. (IF=1.372)
49. 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=4.610)
50. 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=0.971)
51. SK Mittal, P Kumar, 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=1.369)
52. SK Mittal, Ashok Kumar S.K and HK Sharma, Cerium(III)-Selective Membrane Electrode Based on Dibenzo-24-crown-8 as a Neutral Carrier, *E-Journal of Chemistry*, 7(2010)849-855. (IF=1.300)

**Publications in 2011**

**Total IF : 6.394**

53. SK Ashok Kumar, SK Mittal, S Kumar, Highly Selective Potentiometric Determination of Ag(I) using 1,2,4,5-tetrakis (8-hydroxyquinolinoxy methyl) ... Coated-wire Ion-selective Electrode, *Sensor Letters*, 9(2011)1390-1397. (IF=0.558)
54. 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 .... in rural area of Punjab, India, *J of Env Monitoring*, 13(2011)1073-1081. (IF=2.592)
55. K Matharu, SK Mittal, A Kumar, SK, Systematic Approach for the Determination of Individual Lanthanides using Inexpensive Conductometric Technique, *Analytical Methods* 3(2011)1290-1295. (IF=2.073)
56. 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=1.171)

**Publications in 2012**

**Total IF : 20.142**

57. J Singh, SK Mittal, Chlorella sp. based biosensor ..... of silver ions, *Sens and Actu B*, 165(2012)48-52. (IF=5.667)
58. J.Singh, SK Mittal Whole cell based amperometric sensor ..zinc ions, *Anal Methods*,4(2012)1326-1331. (IF=2.073)
59. 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=1.000)
60. 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=0.573)
61. P Kumar, A Kumar SK, SK Mittal, Neutral Carrier-Based ... Electrode, *Sensor Letters*, 10(2012)979-984. (IF:0.558)
62. 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(2012)223-236. (IF:0.558)
63. R Agarwal, A Awasthi, N Singh, PK Gupta and SK Mittal, Effects of exposure to rice-crop residue burning smoke on pulmonary functions ... human beings in Patiala (India), *Sci of the total Environment*, 429(2012)161-166. (IF=4.610)
64. M Kharub, A Rajor, SK Mittal, Fly ash-Sewage Sludge Mixture as a barrier of heavy metal leaching, *Res J of Chem and Env*, 16(2012)22-26. (IF: 0.636)
65. AJain, Tuyet Vu, R Mehta, S K Mittal, Optimizing the Cost and Performance of Parabolic Trough Solar Plants with Thermal Energy Storage in India, *Environmental Progress & Sustainable Energy (Wiley)*, 32(2012)824-829. (IF=1.326)
66. Komal Matharu, Susheel K Mittal and Ashok Kumar SK, Conductometric Performance of 2-pole and 5-ring conductivity cell probe for lanthanides determination ... agent, *Industrial & Engg Chem Res (ACS)*, 51(2012)11328-11334. (IF=3.141)
67. 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 Curr Research and Review*, 4(2012)12-28. ---

**Publications in 2013**

**Total IF= 8.047**

68. Sujata Vohra, N Singh, S K Mittal, M. L. Singla, Thermal stability and electrical characteristics of poly(2-ethylaniline)-Au nanocomposite, *J Mater Sci: Mater Electron*, 24(2013)2689-2694. (IF=2.324)
69. 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 *Int J of Curr Res and Review*,5(2013)13-31. ---
70. Harminder Singh, A.K. Bhardwaj, M.L. Sehgal and Susheel K Mittal\*, Calculating ESR Parameters (H<sup>∧</sup> & ΔEh F) Of 4d And 5d transition metal ion complexes: A DFT Study *Inter J of Curr Res and Review*, 5(2013)71-88. ---
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80. Susheel K Mittal, Rashmi Sharma, Manisha Sharma, Narinder Singh, Jasminder Singh, Navneet Kaur and Manmohan Chhibber, Voltammetry of nanoparticle coupled imine linkage based receptors for sensing of Al(III) and Co(II) ions, *J Applied Electrochemistry (Springer)*, 44(2014)1239-1251. (IF=2.262)
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136. Susheel K Mittal\* , Manmohan Chhibber, Shivali Gupta, Solvent and substituent effect on selectivity of triphenylether based ionophores: A voltammetric study (submitted).

**Papers in International Conferences (held outside India)**

1. Shivali Gupta, **SK Mittal** and Manmohan Chhibber Highly selective triphenylether derivative as fluorescent sensor

- for copper and arginine, Proc. Conf. Lutsk-**UKRAINE** May 12-14, 2021 (Online).
2. **SK Mittal**, Sonia Rana and Craig E Banks, Modified Electrodes as Disposable Voltammetric Sensors for Cation/Anion Recognition, Matrafured 2019, Visegrad, **Budapest, Hungary**, June 16-21, 2019.
  3. **SK Mittal**, Mini-MOOC Workshop, First International Conference on Virtual Education: Challenges & Opportunities at Industrial University of Santander, **Bucaramanga, Colombia**, Oct. 8-9, 2018.
  4. **SK Mittal**, Mini-MOOC, A concept of precise learning during first International Conference on Virtual Education: Challenges & Opportunities at Industrial University of Santander, **Bucaramanga, Colombia**, Oct. 10-12, 2018.
  5. **SK Mittal**, Voltammetric sensors based on schiff bases for cation/anion recognition, Talk in Dep of Sci & Engg, MMUni, Chester St, **Manchester, UK**, September 2017.
  6. **SK Mittal**, Mini-MOOCs blended learning and its effects, Visiting Professors' Conference, Aston University, **Birmingham (UK)**, organised by Royal Academy of Engg (UK), Sept. 27-30, 2017
  7. **SK Mittal**, Ultra trace level detection of heavy metal and pesticides using whole cell biosensors, Biosensors 2016 conference at Svenska Massan, **Gothenburg, Sweden** May 25-27, 2016.
  8. **SK Mittal**, 'Schiff Based Ionophores as Voltammetric Chemical Sensors' Deptt of Chem, Trinity College **Dublin Ireland**, Jun 2014.
  9. **SK Mittal**, Biosensor for online monitoring of ultra-trace level Mercury in continuous stream, 3<sup>rd</sup> International Conference: Chemistry for Sustainable Development: Indian Perspective, by Indian Council of Chemists held at **Dubai**, June 11-13, 2014.
  10. **SK Mittal**, S Kumar, Kumar SK, HK Sharma and Sukhdeep Kaur; 8-Hydroxy Quinoline Based Neutral Tripodal Ionophore for Cu(II) Selective Electrode, 10<sup>th</sup> Intern'l Meeting on Chemical Sensors, **Tsukuba, Japan** July 11-14, 2004.
  11. **SK Mittal**, Harish Kumar Sharma and SK Ashok Kumar; Samarium (III) Selective Membrane Sensor Based on Tin (IV) Boratophosphate, 10<sup>th</sup> International Meeting on Chemical Sensors, **Tsukuba Japan** July 11-14, 2004.
  12. **SK Mittal** and P Singh; Electrical and Thermodynamic Studies on Zirconium phosphotungstate based heterogeneous membrane, Euro-membrane '99, European Membrane Society, at Leuven, **Belgium** Sept 19-22, 1999.
  13. **SK Mittal** and RK Ratra; Toxic Effect of metal ions on BOD exertion, 1995 Intern'l Chemical Congress of Pacific Basin Societies at Honolulu, **Hawaii, USA** Dec 17-22, 1995.

#### Papers in Indian Conferences – 29

##### Invited Talks – From 2009 onwards

1. **S Mittal** Measurement of metal ion .... potentiometric chemical sensors 7<sup>th</sup> Intn'l Conf on Advances in Metrology, at NPL, New Delhi Feb 2009.
2. **Susheel Mittal**, Biomass burning practices and its impact on ambient air aerosol levels in Patiala 1<sup>st</sup> National Conference on Recent Advances in Chemical Environmental Sciences held at MM Modi College, Patiala Feb 2009
3. **SK Mittal**, Pawan Kumar and Ashok Kumar SK, PVC Based N,N,N',N'- Tetrakis(2-pyridylmethyl) ethylenediamine as ISE for Zn(II) ions, National Symposium on Green Chemistry, Applications in Science & Engineering, Thapar University, Patiala Feb 2009
4. N Singh, **SK Mittal**, R Agarwal, A Awasthi, PK Gupta, Air quality standards and the levels of SPM....Air of Patiala National Symposium on Green Chemistry, Applications in Science & Engg, Thapar University, Patiala Feb 2009
5. **SK Mittal**, N Singh, R Agarwal, Awasthi, PK. Gupta; Air Pollutant emissions associated with open agricultural residue burning in Patiala (NW- India), Workshop on Proceedings on Health Effect of Particulate Air Pollution Held at Thapar University, Patiala Nov 2009
6. **S Mittal**, Effect of crop residue practices on the respiratory parameters of human subjects, National Conference on Green Chemistry, Recent Trends and Applications, held at DAV College, Amritsar Sept 2010
7. K Kaur, PK Upadhyay, J Singh and **SK Mittal**, Metal ionophore.....using quantum CAChe, 12<sup>th</sup> CRSI National Symp in Chemistry Feb 2010
8. **S Mittal**, Residual effects of crop residue burning practices on the respiratory parameters of human subjects, 3<sup>rd</sup> National Conference on Recent Advances in Chemical Environmental Sciences held at MM Modi College, Patiala Feb 2011
9. Ashok Kumar, S.K., **SK Mittal** and Komal Matharu, A Cost-Effective Conductometric Method for Low Level Determination of Individual Lanthanides, National Symposium on Electrochemical Science and Technology, Indian Institute of Science, Bengaluru, (19-20 Aug, 2011).
10. **Susheel Mittal**, "Ion Selective Electrodes" Refresher Course in Chemistry for the college and University teachers organized by Department of Chemistry, Punjabi University, Patiala from 27.11.2012 to, 17.12.2012.
11. **S K Mittal** and Jasminder Singh Chlorella sp. based biosensor for selective determination of mercury in presence of silver ions" XXXI Annual Conference of the Indian Council of Chemists held at Department of Chemistry, Saurashtra University, Rajkot (Guj) on 26<sup>th</sup>-28<sup>th</sup> Dec, 2012
12. K Kaur, **S K Mittal**, Ashok Kumar SK, A Kumar, S Kumar, Jonathan P. Metters and Craig E Banks, Voltammetric Sensors for Some Anions and Cations, Fifth ISEAC Triennial Internl Conf on Advances and Recent Trends in Electrochemistry (ELAC-2013) held at Hyderabad Jan 16-20, 2013
13. **S K Mittal**, Subodh Kumar, Karamjit Kaur, Ashwani Kumar, Voltammetric sensing of Hg<sup>2+</sup> and Cu<sup>2+</sup> ions by anthrone derivatives, 5<sup>th</sup> National Symposium on New Frontiers in Chemistry, organized by Department of Chemistry, Punjabi University Patiala from February 15-16, 2013



14. Komal Matharu, Ashok Kumar SK and **Susheel K Mittal**, Ram Chand Paul National symposium on new developments in chemical sciences held at Panjab University, Chandigarh from 23-24 February 2013.
15. **Susheel K Mittal**, Ravinder Agarwal and Nirankar Singh, "Effect of rice and wheat crop residue burnings on pulmonary function of human subjects in Patiala: A case study" Canada-India Workshop on "Water for Health" Baba Farid University of Health Sciences, Faridkot, Nov 7-8, 2013
16. 6th National Seminar New Paradigm in Chemical Sciences-2014 (NPICS-2014), Deptt of Chem, Punjabi University, Patiala on Feb. 13, 2014
17. **Susheel Mittal**, "PAHs as criteria pollutants generated during crop residue burning episodes in ambient air of Patiala" 3rd National Conference on Advances in Metrology (AdMet – 2014), Sensors for Metrological, Environment, Health and Safety Applications, February 19-21, 2014
18. Nirankar Singh, **Susheel K Mittal**, Ravinder Agarwal, Prabhat K Gupta, and Amit Awasthi, Monitoring of suspended particulate matter and trace gases using high volume sampling technique at different locations in Patiala (NW-India), 3<sup>rd</sup> National Conference on Advances in Metrology (AdMet – 2014), Sensors for Metrological, Environment, Health and Safety Applications, February 19-21, 2014.
19. Karamjeet Kaur, **Susheel K Mittal**, Ashok Kumar SK, Ashwani Kumar, Subodh Kumar, Jonathan P. Metters and Craig E Banks, Screen Printed Electrodes modified with Anthrone derivatives as a disposable Voltametric Sensor for Mercury ions, 4<sup>th</sup> National Symposium on Advances in Chemical Sciences, organized by Dept. of Chemistry, Center of Advanced Studies, Guru Nanak Dev University, Amritsar, February 27-28, 2014
20. **Susheel K. Mittal**, Rashmi Sharma, M Sharma, N Singh, J Singh, N Kaur and Manmohan Chhibber, Nanoparticle-coupled imine linkage-based receptors for voltammetric sensing of Al(III) and Co(II) ions, RSC India Roadshow workshop 2014 at Univ of Hyderabad, Nov, 2014.
21. **Susheel Mittal**, Health hazards of crop residual burning in Punjab, National Conference on Recent Advances in Chemical Environmental Sciences held at MM Modi College, Patiala Jan 30-31 2015.
22. **Susheel Mittal**, Effects of crop residue burning events in Punjab on human health of children, XXXIV Annual conference: Indian council of chemists held at UKA Tarsadia University, Bardoli, Surat, December 26-28 2015.
23. **S Mittal**, Agriculture CRB, National Seminar on chemistry-our life-our recognition in society at Govt B College, Faridkot Jan 19-20, 2016
24. **Susheel K. Mittal**, Ultra-Trace level detection of mercury in presence of silver ions using microbial biosensor, International conference on recent advances in analytical sciences held at Indian Institute of Technology (BHU), Varanasi, April 7-9 2016.
25. **Susheel K Mittal**, Deepak Garg, Parteek Bhatia and Shivani Garg, Innovative Research in Pedagogy for mini-MOOCs blended with Instruction Strategies to enhance Quality of Higher Education, Visiting Professors Conference held at Aston University, Birmingham (UK) from September 26-28, 2017 organised by Royal Academy of Engineering, UK
26. **S K Mittal**, Voltammetric sensors based on schiff bases for cation/anion recognition, Talk in Dep of Sci & Engg, MMUni, Chester St, Manchester, UK, Sept 2017.
27. **Susheel Mittal**, 'Particulate Pollution and Human Health: An Effect of Crop Residue Burning', an expert talk organised during One-week Online Faculty Development Programme on 'Green Technologies and Environmental Sustainability' (GTES-2020) from September 7-12, 2020 by Department of Civil Engineering Department of Environmental Sciences, J C Bose University of Science and Technology, YMCA, Faridabad (Hy).
28. Panelist in 'National Conference - Gender Bias in Technology', held by Auro University, Surat on March 9, 2021.
29. Chairing a session during 'Research Scholars Meet' a national conference organised by Sri Guru Granth Sahib World University, Fatehgarh Sahib on March 16, 2021.
30. **Susheel Mittal**, Delivered an expert Talk on "Surface Ozone: Pollutant of the Troposphere" during a State Level Celebrations of World Ozone Day by Punjab Pollution Control Board, held at PAU, Ludhiana on September 16, 2021.