

## CURRICULUM VITAE

### **Dr. SUDESHNA CHANDRA**

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**Nationality:** Indian

**Date of Birth:** 15-04-1970

**Gender:** Female



### **Presently at:**

Dr. Sudeshna Chandra  
Research Scientist & Humboldt Fellow  
Institute of Analytical Chemistry  
University of Regensburg, Germany  
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### **Research Domains**

- Developing of UCNPs based nanofibers by electrospinning
- Prototyping nanoferrites based electrochemical supercapacitors
- Developing stimuli responsive drug delivery systems based on hybrid nanoparticles and UCNPs.
- Development of chiral catalyst based on magnetic materials
- Fabrication of electrochemical nanobiosensors for early detection of cancer using multiplexed detection moieties

Employment	Position	Department and Institute	Roles and responsibilities
	Professor (7 <sup>th</sup> September 2020- 26 <sup>th</sup> October 2021)	Department of Chemistry, Sunandan Divatia School of Science, SVKM's NMIMS (Deemed-to-be University), Mumbai, India	<ul style="list-style-type: none"><li>• Headed Department of Chemistry since December 2020.</li><li>• Taught chemistry to graduate students (M. Sc. Course), designing assessment metrics and evaluation</li><li>• Led research projects, managing project financial expenditures and guiding Ph. D. students</li></ul>
	Associate Professor (3 <sup>rd</sup> August 2014 – 6 <sup>th</sup> September 2020)		

		<ul style="list-style-type: none"> <li>• Prepared research projects to generate grants through central funding agencies</li> <li>• Kept track of latest trends and needs in higher education and recommending appropriate courses and modules to Board of Studies</li> <li>• Coordinated with industry/academic partners for summer projects and placements</li> </ul>
DST Woman Scientist (1 <sup>st</sup> August 2011 to Jul 2014)	Department of Metallurgical Engineering & Materials Science  Indian Institute of Technology Bombay, India	<ul style="list-style-type: none"> <li>• Working on project entitled 'Fabrication of dendritic magnetomers for biomedical applications'</li> <li>• Overseeing the project expenditure</li> </ul>
DST Fast Track Young Scientist (1 <sup>st</sup> February 2007 – 31 <sup>st</sup> July 2011)	Department of Metallurgical Engineering & Materials Science  Indian Institute of Technology Bombay, India	<ul style="list-style-type: none"> <li>• Working on project entitled 'Self-assembled monolayers of end-functionalized first and second generation dendrimers and macrocycles towards ion-recognition'</li> <li>• Overseeing the project expenditure</li> </ul>
Alexander von Humboldt Fellow (1 <sup>st</sup> April 2004 to 31 <sup>st</sup> August 2006)	Technische Universität Chemnitz, Germany	<ul style="list-style-type: none"> <li>• Synthesis of silane dendrimers for the fabrication of chemical sensors</li> </ul>
Post-Doctoral Fellow (1 <sup>st</sup> May 2001 to 31 <sup>st</sup> July 2003)	Department of Chemistry, Indian Institute of Technology, Roorkee, India	<ul style="list-style-type: none"> <li>• Working on project entitled "Monitoring and removal of heavy metals from waste water using chemical sensors and low cost adsorbent".</li> </ul>

Education	Degree/year	Institute	Topic/Subjects
	Ph.D. (Chemistry)/1998	University of Roorkee (now Indian Institute of Technology Roorkee, India)	Physico-Chemical studies on synthetic macrocycles and their analytical applications
	Masters Chemistry/1993	in Meerut University, Meerut, India	Organic Chemistry
	Post-graduate Diploma/1991	Indian Institute of Ecology and Environment, New Delhi, India	Ecology and Environment
	Bachelors Science/1990	in Meerut University, Meerut, India	Botany, Zoology, Chemistry
Teaching	Programs	Topics Taught	
	Masters in Chemistry	Physical Chemistry Environmental and Green Chemistry Nanoscience and Nanotechnology Research Methodology and IPR Advanced Analytical Chemistry Industrial Chemistry	
Research	Supervisions/Projects	Status	
	Ph.D Thesis	Completed: 6 Submitted in 2021: 1 Ongoing: 6	
	Masters in Chemistry (2020-2021)	Completed: 3	
	<i>In vivo</i> imaging and tracking of iron oxide nanoparticles labelled stem cells for osteocondral repair (2018-2021)	Funded by Department of Biotechnology, Government of India (On-going)	
	Development of electrochemical nanobiosensors based on dendrimer magnetic nanoparticles for early detection of liver cancer (2017-2020)	Funded by Nanomission, Department of Science and Technology, Government of India (Completed)	

Self-assembled monolayers of end-functionalized first and second generation dendrimers and macrocycles towards ion-recognition (2008-2011)	Funded by Department of Science and Technology, Government of India (Completed)
Fabrication of dendritic magnetomers for biomedical applications (2011-2014)	Funded by Department of Science and Technology, Government of India (Completed)
Development of electrochemical biosensors for liver diseases (2016-2017)	Funded by NMIMS (Deemed to be University) Completed
Development of prototype supercapacitors based on conducting polymer and metal nanoferrites (2017-2018)	Funded by NMIMS (Deemed to be University) Completed

Patents	Description	Inventors	Status/year
	Mixed Metal Ferrite Nanoparticles and Method of Synthesis thereof	Gita Singh and Sudeshna Chandra	Granted Indian Patent No. 366457/2021
	Fabrication of novel dendrimer-functionalized magnetic nanoparticles for energy storage devices	Sudeshna Chandra, Mumukshu D Patel and D. Bahadur	Granted Indian Patent No. 313934/2019
	A biosensor comprising functionalized magnetic nanoparticles	D. Bahadur, Neerav Barola, Sudeshna Chandra	Granted Indian Patent No. 315862/2019

#### Honors and Awards      Details

Best Faculty (Research) Award for the year 2018-2019 conferred by SVKM's NMIMS University, Mumbai, India.

Experienced Researcher Award by Alexander von Humboldt Foundation to work under Prof. Dr. Heinrich Lang in the Department of Chemistry, Chemnitz Technical University, Chemnitz, Germany from 20.4.2019 to 19.7.2019.

Senior Researcher Humboldt Fellowship by Alexander von Humboldt Foundation to work under Prof. Dr. Antje J. Baeumner in the Department of Analytical Chemistry, University of Regensburg, Regensburg, Germany from 1.11.2015 till 31.1.2016.

Invited to participated in the Workshop on Materials Science for Energy Storage, held at The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy from 11.06.2015 till 15.06.2015.

Grant to “Support the Initiation of International Collaboration” by Deutsche Forschungsgemeinschaft (DFG) to work with Prof. Dr. Heinrich Lang in the Department of Chemistry, Chemnitz Technical University, Chemnitz, Germany from 15.3.2014 to 14.6.2014

Peter Salamon Young Scientist award in the 3<sup>rd</sup> meeting on Frontiers in Biomagnetic Particles at Telluride, Colorado, USA on 5<sup>th</sup> July, 2013

DST Young Scientist award to work under Prof. D. Bahadur in the Department of MEMS, IIT Bombay from August 2007- August 2011

Humboldt Fellowship by Alexander von Humboldt Foundation to work under Prof. Dr. Heinrich Lang in the Department of Chemistry, Chemnitz Technical University, Chemnitz, Germany from 1.5.2004 till 31.7.2006

DST-DAAD fellowship under Indo-German Project based Personnel Exchange Program to work under Prof. Dr. Heinrich Lang in the Department of Chemistry, Chemnitz Technical University, Chemnitz, Germany (16.5.2002 to 15.7.2002).

Research Associateship by the Council of Scientific and Industrial Research, Government of India, New Delhi, INDIA, from 1.5.2001 to 30.4.2003

Senior Research Fellowship by the Council of Scientific and Industrial Research, Government, INDIA, from 1.4.1996 to 31.3.1998

#### **Conferences/Workshops Organized**

Conference Co-Chair of International Conference on Advances in Materials Science & Applied Biology (AMSAB 2019), January 8-10, 2019, NMIMS University

Convener of National Seminar on Recent Advances in Spectroscopy and Analytical Techniques, October 15-17, 2015, Sunandan Divatia School of Science, NMIMS University

Member of Organizing Committee of International Symposium on Nanotechnology and Cancer Theranostics (ISNACT 2015), February 19-21, 2015, IIT Bombay

Convener of Two-day workshop on Analytical Nanoscience for Chemists, November 21-22, 2014, NMIMS School of Science

Member of Organizing committee of International Conference on Nanoscience and Technology (ICONSAT 2010), February 17-20, 2010, IIT Bombay

**Research papers and citations**

**Details**

Publications in peer-reviewed journals: 75+ (Annexure-1)

Google Scholar citations: 2800+

h-index: 28

I10 index: 45

**Recognized Reviewer**

**Journals**

RSC Advances; Colloids and Surfaces B: Biointerfaces; Acta Biomaterialia

Journal of Industrial and Engineering Chemistry; Talanta

Journal of Drug Delivery Science and Technology;

International Journal of Hydrogen Energy; Electrochemical Science Advances

Sensors & Actuators: B. Chemical; Materials Chemistry and Physics

Journal of Advanced Research; Biosensors and Bioelectronics

Materials and Design; Electroanalysis

**Professional Membership**

**Details**

Life member of Alexander von Humboldt Stiftung/Foundation, Bonn, Germany

Member of American Chemical Society (Reg. No. 31439634)

Life member of Indian Science Congress Association, Kolkata, India

Life member of Society of Materials Chemistry, Mumbai, India

Life member of Indian Women Scientists' Association, Mumbai, India

## Annexure 1: Publications

### Book Chapters:

1. Chapter titled "*Porphyrimoids in Association with Nanomaterials for Water Purification*" in RSC Smart Materials Series- Applications of Porphyrimoids as Functional Materials (2021). <https://doi.org/10.1039/9781839164149-00328>
2. Chapter titled "*Engineered Hybrid Nanoparticles for Multimodal Medical Imaging and Diagnosis*" in Nanomaterials for Cancer Detection using Imaging Techniques and their Clinical Applications, published by Springer Nature (2022) In press.
3. Chapter titled "*Recent Status of the Current Clinical Trials going on for Superparamagnetic Materials*" in Superparamagnetic Materials for Cancer Medicine, published by Springer Nature (2022) In press.

### Research Publications:

1. Meenakshi Shukla, Pankaj E Hande and **Sudeshna Chandra**, Porous silica support for immobilizing chiral metal catalyst: Unravelling the activity of catalyst on asymmetric organic transformations, Revision submitted (2022).
2. Meenakshi Shukla and **Sudeshna Chandra**, Magnetically separable chiral phosphine -Ni(II) immobilized periodic mesoporous organosilica for asymmetric nitro-aldol reaction and synthesis of norepinephrine, Revision submitted (2022).
3. Neha Dubey and **Sudeshna Chandra**, Upconversion nanoparticles: Recent strategies and mechanism based applications, *Journal of Rare Earths* (2022). In press. <https://doi.org/10.1016/j.jre.2022.04.015>
4. Aishwarya Shetty, Sumit K Mishra, Abhijit De, **Sudeshna Chandra**, Smart releasing CuS/ZnS nanocomposite dual drug carrier and photothermal agent for use as a theranostic tool for cancer therapy, *Journal of Drug Delivery Science and Technology* (2022) 70, 103252. <https://doi.org/10.1016/j.jddst.2022.103252>
5. Pinky Shah and **Sudeshna Chandra**, Review on Emergence of Nanomaterial Coatings in Bio-engineered Cardiovascular Stents, *Journal of Drug Delivery Science and Technology* (2022) 70, 103224. <https://doi.org/10.1016/j.jddst.2022.103224>

6. Gita Singh and **Sudeshna Chandra**, Unravelling the structural-property relations of porphyrinoids with respect to photo- and electro-chemical activities, *Electrochemical Science Advances* (2021) e2100149, 1-19.
7. Jayprakash G. Rao, Amar Chandrani, Anil Powar, **Sudeshna Chandra**, Preparation of microcapsule suspension of herbicide oxyfluorfen polyurea and its effects on phytotoxicity on rice crop, *Journal of Dispersion Science and Technology* (2021) <https://www.tandfonline.com/doi/full/10.1080/01932691.2021.1951285>
8. Jayprakash G. Rao, Amar Chandrani, Anil Powar, **Sudeshna Chandra**, Release behaviour of oxyfluorfen polyurea capsules prepared using PVA and Kraft lignin as emulsifying agents and phytotoxicity study on paddy, *Green Chemistry Letters and Reviews* (2021) 14, 203–219.
9. Meenakshi Shukla, K. C. Barick, H. G. Salunke, **Sudeshna Chandra**, Chiral salen - Ni (II) based spherical porous silica as platform for asymmetric transfer hydrogenation reaction and synthesis of potent drug intermediate montekulast, *Molecular Catalysis* (2021) 502, 111367.
10. Priyal Chikhaliwala, Wayne Schlegel, Heinrich Lang and **Sudeshna Chandra**, Inkjet printed patterns of polyamidoamine dendrimer functionalized magnetic nanostructures for future biosensing device application, *Journal of Materials Science* (2021) 56, 5802–5816.
11. Aishwarya Shetty, Priyal Chikhaliwala, Jui Suryawanshi, **Sudeshna Chandra**, Understanding physico-chemical interactions of dendrimers with guest molecules for efficient drug and gene delivery, *Current Pathobiology Reports* (2021) 9, 57–70. <https://doi.org/10.1007/s40139-021-00221-5>.
12. Aishwarya Shetty and **Sudeshna Chandra**, Inorganic hybrid nanoparticles in cancer theranostics: understanding their combinations for better clinical translation, *Materials Today Chemistry* (2020) 18, 100381.
13. Jayprakash Rao, Amarnath Chandrani, Anil Powar and **Sudeshna Chandra**, Design and application of polyurea microcapsules containing herbicide (oxyfluorfen), *Designed Monomers and Polymers* (2020), 23, 155–163.
14. Ruchita Shelat, Lokesh Kumar Bhatt, Bhawan Paunipagar, Thomas Kurian, Aparna Khanna, **Sudeshna Chandra**, Regeneration of hyaline cartilage in osteochondral lesion model using L-lysine magnetic nanoparticles labeled mesenchymal stem cells and their *in vivo* imaging, *Journal of Tissue Engineering and Regenerative Medicine* (2020) 14, 1604–1617.



15. Mangesh Sakhalkar, Rudra Prosad Choudhury, Vishnupriya Bhakthavatsalam, Sharad V. Lande, Jeevan Pradhan and **Sudeshna Chandra**, Deep compositional understanding of TBA:AlCl<sub>3</sub> ionic liquid for its applications, *Journal of Molecular Structure* (2020) 1222, 128936.
16. Mangesh Sakhalkar, Sharad Lande and **Sudeshna Chandra**, Facile and selective mono benzylation of naphthalene using atom efficient chloroaluminate ionic liquid, *Polycyclic Aromatic Compounds* (2020), <https://doi.org/10.1080/10406638.2020.1802304>
17. Gita Singh and **Sudeshna Chandra**, Nano-flowered manganese doped ferrite@PANI composite as energy storage electrode material for supercapacitors, *Journal of Electroanalytical Chemistry* (2020) 874, 114491.
18. Priyal Chikhaliwala, and **Sudeshna Chandra**, Poly-amidoamine dendrimers@Fe<sub>3</sub>O<sub>4</sub> based electrochemiluminescent nanomaterials for biosensing of liver cancer biomarkers, *Electroanalysis* (2020), 32, 2402–2414.
19. Mangesh Sakhalkar, Pavankumar Aduri, Sharad Lande, and **Sudeshna Chandra**, Single step synthesis of novel chloroaluminate ionic liquid for green Friedel-Crafts alkylation reaction, *Clean Technologies and Environmental Policy* (2020) 22, 59–71.
20. Ruchita Shelat, Lokesh Kumar Bhatt, Aparna Khanna and **Sudeshna Chandra**, A comprehensive toxicity evaluation of novel amino acid modified magnetic ferrofluids for magnetic resonance imaging, *Amino Acids* (2019) 51, 929–943.
21. Priyal Chikhaliwala, Rakesh Rai and **Sudeshna Chandra**, Simultaneous voltammetric immunodetection of alpha-fetoprotein and glypican-3 using a glassy carbon electrode modified with magnetite-conjugated dendrimers, *Microchimica Acta* (2019) 186, 255 (13pp).
22. Gita Singh and **Sudeshna Chandra**, Copper doped manganese ferrites@PANI for fabrication of binder-free nanohybrid symmetrical supercapacitors, *Journal of the Electrochemical Society* (2019) 166, A1154– A1159.
23. Maneka Hoonjan, Geetanjali Sachdeva, **Sudeshna Chandra**, Prashant Suresh Kharkar, Nitesh kumar Sahu and Purvi J Bhatt, Investigation of HSA as a biocompatible coating material for arsenic trioxide nanoparticles, *RSC Nanoscale* (2018) 10, 8031–8041.
24. Ruchita Shelat, **Sudeshna Chandra** and Aparna Khanna, Detailed toxicity evaluation of  $\beta$ -cyclodextrin coated iron oxide nanoparticles for biomedical applications, *International Journal of Biological Macromolecules* (2018) 110, 357–365.

25. Gita Singh and **Sudeshna Chandra**, Electrochemical performance of  $\text{MnFe}_2\text{O}_4$  nano-ferrites synthesized using thermal decomposition method, *International Journal of Hydrogen Energy* (2018) 43, 4058–4066.
26. **Sudeshna Chandra**, Michael Mayer, Antje J. Baeumner, PAMAM dendrimers: A multifunctional nanomaterial for ECL biosensors, *Talanta* (2017) 168, 126–129.
27. Delina Joseph, Raul D. Rodriguez, Akash Verma, Elaheh Pousaneh, Dietrich R. T. Zahn, Heinrich Lang and **Sudeshna Chandra**, Electrochemistry and surface-enhanced Raman spectroscopy of CTAB modulated interactions of magnetic nanoparticles with biomolecules, *RSC Advances* (2017) 7, 3628–3634.
28. Joginder Singh Paneysar, Stephen Barton, **Sudeshna Chandra**, Premalata Ambre, Evans Coutinho, Novel thermoresponsive assemblies of co-grafted natural and synthetic polymers for water purification, *Water Science and Technology* (2017) 75, 1084–1097.
29. Priyal Chikhaliwala, **Sudeshna Chandra**, Dendrimers as tool for enhancement of electrochemiluminescence signal, *Journal of Organometallic Chemistry* (2016) 821, 78–90.
30. **Sudeshna Chandra**, Christian Gäbler, Christian Schliebe, Heinrich Lang, Dharendra Bahadur, Fabrication of a label-free electrochemical immunosensor using redox active ferrocenyl dendrimer, *New Journal of Chemistry* (2016) 40, 9046–9053.
31. Mayank Gupta and **Sudeshna Chandra**, Bio-magnetic sensors based on functionalized iron oxide nanoparticles, *Biomedical Research Journal* (2016) 3, 229–240.
32. Delina Joseph, Shilpee Sachar, Nand Kishore, **Sudeshna Chandra**, Mechanistic insights into the interactions of magnetic nanoparticles with bovine serum albumin in presence of surfactants, *Colloids and Surfaces B: Biointerfaces* (2015) 135, 596–603.
33. Vaibhav Jadhav, Shilpee Sachar, **Sudeshna Chandra**, D. Bahadur, Purvi Bhatt, Synthesis and characterization of arsenic trioxide nanoparticles and their *in vitro* cytotoxicity studies on mouse fibroblast and prostrate cancer cell lines, *Journal of Nanoscience and Nanotechnology* (2015) 15, 1–7.
34. Purva Sanganerla, **Sudeshna Chandra**, Dharendra Bahadur, Aparna Khanna, Effect of HSA coated iron oxide labeling on human umbilical cord derived mesenchymal stem cells, *Nanotechnology* (2015) 26, 125103.
35. **Sudeshna Chandra**, Mumukshu D. Patel, Heinrich Lang, Dharendra Bahadur, Fabrication of dendrimer-functionalized magnetic nanoparticles for energy storage devices, *Journal of Power Sources* (2015) 280, 217–226.

36. Purva Sangneria, Shilpee Sachar, **Sudeshna Chandra**, Dharendra Bahadur, Pritha Ray, Aparna Khanna, Cellular internalization and detailed toxicity analysis of protein-immobilized iron oxide nanoparticles, *Journal of Biomedical and Material Research Part B* (2015) 103, 125–134.
37. Saumya Nigam, **Sudeshna Chandra**, D. Bahadur, Dendrimers based electrochemical biosensors, *Biomedical Research Journal*, (2015) 2, 21–36.
38. **Sudeshna Chandra**, Glen Noronha, Sascha Dietrich, Heinrich Lang, Dharendra Bahadur, Dendrimer-magnetic nanoparticles as multiple stimuli responsive and enzymatic drug delivery vehicle, *Journal of Magnetism and Magnetic Materials* (2015) 380, 7–12.
39. **Sudeshna Chandra**, Carola Mende, Dharendra Bahadur, Alexander Hildebrandt, and Heinrich Lang, Fabrication of a porphyrin-based electrochemical biosensor for detection of nitric oxide released by cancer cells, *Journal of Solid State Electrochemistry* (2014) 19, 169–177.
40. Dipa Dutta, **Sudeshna Chandra**, Akshaya K. Swain, Dharendra Bahadur, SnO<sub>2</sub> quantum dots-reduced graphene oxide composite for enzyme-free ultrasensitive electrochemical detection of urea, *Analytical Chemistry* (2014) 86, 5914–5921.
41. Saumya Nigam, **Sudeshna Chandra**, Donald Newgreen, Dharendra Bahadur, and Qizhi Chen, Poly(ethylene glycol) modified PAMAM-Fe<sub>3</sub>O<sub>4</sub>-doxorubicin triads with potential for improved therapeutic efficacy: generation-dependent increased drug loading and retention at neutral pH and increased release at acid pH, *Langmuir* (2014) 30, 1004–1011.
42. **Sudeshna Chandra**, Saumya Nigam, D. Bahadur, Combining unique properties of dendrimers and magnetic nanoparticles towards cancer theranostics, *Journal of Biomedical Nanotechnology* (2014) 10, 32–49.
43. **Sudeshna Chandra**, H. Lang, D. Bahadur, Polyaniline-iron oxide nanohybrids film as multi-functional label-free electrochemical and biomagnetic sensor for catechol, *Analytica Chimica Acta* (2013) 795, 8–14.
44. Rahul Krishna, **Sudeshna Chandra**, Neelkanth Bardhan, Maryam Salimian, Y. Y. Yang, Elby Titus, Jose Gracio, Dharendra Bahadur, Design of an Amperometric Glucose Biosensor Based on Glucose Oxidase/Arginated-Fe<sub>3</sub>O<sub>4</sub>/Glassy Carbon Electrode, *Science of Advanced Materials* (2013) 5, 333–340.
45. Rahul Krishna, Elby Titus, **Sudeshna Chandra**, Neel Kanth Bardhan, Rohit Krishna, Dharendra Bahadur, José Gracio, Fabrication of a glucose biosensor based on citric acid assisted cobalt ferrite magnetic nanoparticles, *Journal of Nanoscience and Nanotechnology* (2012) 12, 6631–6638.

46. **Sudeshna Chandra**, D. Bahadur, Crossing barriers: From magnetisms to therapeutics at nanoscale, Technical Invited paper, *Metal News* (2012) 15, 41–44.
47. **Sudeshna Chandra**, Kunal Arora, D. Bahadur, Impedimetric biosensor based on magnetic nanoparticles for electrochemical detection of dopamine, *Material Science and Engineering B* (2012) 177, 1531–1537.
48. Anand Prakash, **Sudeshna Chandra**, D. Bahadur, Structural, magnetic and textural properties of iron oxide-reduced graphene oxide hybrids and their use for the electrochemical detection of chromium, *Carbon* (2012) 50, 4209–4219.
49. Sascha Dietrich, **Sudeshna Chandra**, Colin Georgi, Senoy Thomas, Denys Makarov, Steffen Schulze, M. Hietschold, Manfred Albrecht, D. Bahadur, Heinrich Lang, Design, characterization and magnetic properties of Fe<sub>3</sub>O<sub>4</sub>-nanoparticle arrays coated with PEGylated-dendrimers, *Material Chemistry and Physics* (2012) 132, 292–299.
50. M. Niraj Luwang, **Sudeshna Chandra**, D. Bahadur, S. K. Srivastava, Dendrimer facilitated synthesis of multifunctional lanthanide based hybrid nanomaterials for biological applications, *Journal of Material Chemistry* (2012) 22, 3395–3403.
51. **Sudeshna Chandra**, Neerav Barola and Dhirendra Bahadur, Impedimetric biosensor for early detection of cervical cancer, *Chemical Communications* (2011) 47, 11258–11260.
52. **Sudeshna Chandra**, K. C. Barick, D. Bahadur, Oxide and hybrid nanostructures for therapeutic applications, *Advanced Drug Delivery Reviews* (2011) 63, 1267–1281.
53. Vinod Kumar Gupta, Lok Pratap Singh, **Sudeshna Chandra**, Sunita Kumar, Rakesh Singh, Bhavana Sethi, Anion recognition through amide-based dendritic molecule: A poly (vinyl chloride) based sensor for nitrate ion, *Talanta* (2011) 85, 970–974.
54. **Sudeshna Chandra**, Sascha Dietrich, Heinrich Lang, D. Bahadur, Dendrimer-Doxorubicin conjugate for enhanced therapeutic effects for cancer, *Journal of Materials Chemistry* (2011) 21, 5729–5737.
55. B. Sethi, **S. Chandra**, S. Kumar, R. Singh, L.P. Singh, Crown ether-dendrimer based potentiometric Na<sup>+</sup> sensor electrode, *Journal of Electroanalytical Chemistry* (2011) 651, 185–190.
56. **Sudeshna Chandra**, N. Nithyamadi, D. Bahadur, BSA immobilization on dendrimer functionalized magnetomers, *International Journal of Nanoscience* (2011) 10, 919–923.
57. **Sudeshna Chandra**, Shailee Mehta, Saumya Nigam, D. Bahadur, Dendritic magnetite nanocarriers for drug delivery applications, *New Journal of Chemistry* (2010) 34, 648–655.

58. **Sudeshna Chandra**, K. S. Lokesh, Anya Nicolai, Heinrich Lang, Dendrimer-rhodium nanoparticle modified GCE for amperometric detection of hydrogen peroxide, *Analytica Chimica Acta*, (2009) 632, 63–68.
59. K. S. Lokesh, Y. Shivaraj, B. P. Dayananda, **Sudeshna Chandra**, Synthesis of phthalocyanine stabilized rhodium nanoparticles and their application in biosensing of cytochrome c, *Bioelectrochemistry* (2009) 75, 104–109.
60. **Sudeshna Chandra**, K. S. Lokesh, Heinrich Lang, Iodide recognition by the N,N-bis-succinamide based dendritic molecule  $[\text{CH}_2\text{C}(\text{O})\text{NHC}(\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{OtBu})_3]_2$ , *Sensors and Actuators B* (2009), 137, 350–356.
61. **Sudeshna Chandra**, Heinrich Lang, Silacrown end-grafted carbosilane dendrimers as stabilizers for Ag and Au nanoparticles: Synthesis, Langmuir-Blodgett film formations, *Materials Chemistry and Physics* (2009) 114, 926–932.
62. **Sudeshna Chandra**, Roy Buschbeck, Heinrich Lang, A 15-crown-5-functionalized carbosilane dendrimer as ionophore for ammonium selective electrodes, *Talanta* (2007) 70, 1087–1093.
63. **Sudeshna Chandra**, Roy Buschbeck, Heinrich Lang, Triethylene glycol ether end-grafted carbosilane dendrimer: a potential ionophore for potassium ion recognition, *Analytical Sciences* (2006) 22, 1327–1332.
64. **Sudeshna Chandra**, Ales Ruzicka, Petr Svec, Heinrich Lang, Organotin compounds: An ionophore system for fluoride ion recognition, *Analytica Chimica Acta* (2006) 577, 91–97.
65. **Sudeshna Chandra**, Heinrich Lang, A new sodium ion selective electrode based on a novel silacrown ether, *Sensors and Actuators B: Chemical* (2006) B114, 849–854.
66. V. K. Gupta, **Sudeshna Chandra**, S. Agarwal, H. Lang, Lithium-selective potentiometric sensor based on a second generation carbosiloxane dendrimer, *Sensors and Actuators, B: Chemical* (2005) 107, 762–767.
67. V. K. Gupta, **Sudeshna Chandra**, Heinrich Lang, A highly selective mercury electrode based on a diamine donor ligand, *Talanta* (2005) 66, 575–580.
68. V. K. Gupta, **S. Chandra**, S. Agarwal, H. Lang, A PVC based electrochemical sensor for cobalt (II) determination, *Proc. Indian Natl. Sci. Acad.*, (2004) 70, 399–406.
69. V. K. Gupta, S. Jain, **Sudeshna Chandra**, Chemical sensor for lanthanum (III) determination using aza-crown as ionophore in poly(vinyl chloride) matrix, *Analytica Chimica Acta* (2003) 486, 199–207.

70. V. K. Gupta, **Sudeshna Chandra**, S. Agarwal, Mercury selective electrochemical sensor based on double armed crown ether as ionophore, *Indian Journal of Chemistry, Section A: Inorganic, Bio-inorganic, Physical, Theoretical & Analytical Chemistry* (2003) 42A, 813–818.
71. V. K. Gupta, M. M. Antonijevic, **Sudeshna Chandra**, S. Agarwal, Polystyrene based silver selective electrodes, *Sensors* (2002) 2, 233–243.
72. V. K. Gupta, **Sudeshna Chandra**, D. K. Chauhan, R. Mangla, Membranes of 5,10,15,20-tetrakis(4-methoxyphenyl) porphyrinatocobalt (TMOPP-Co) (I) as  $\text{MoO}_4^{2-}$  selective sensors, *Sensors* (2002) 2, 164–173.
73. V. K. Gupta, **Sudeshna Chandra**, R. Mangla, Magnesium-selective electrodes, *Sensors and Actuators, B: Chemical*, (2002) 86, 235–241.
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75. V. K. Gupta, **Sudeshna Chandra**, R. Mangla, Dicyclohexano-18-crown-6 as active material in PVC matrix membrane for the fabrication of cadmium selective potentiometric sensor, *Electrochimica Acta* (2002) 47, 1579–1586.
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79. Ashok K. Singh, G. Bhattacharjee, **Sudeshna Chandra**, A new macrocyclic ligand-based sensor for nickel(II) ions, *Bulletin of the Chemical Society of Japan* (1997) 70 2995–2999.
80. Ashok K. Singh, G. Bhattacharjee, M. Singh, **Sudeshna Chandra**, A new macrocyclic polystyrene based membrane sensor for zinc, *Electroanalysis* (1997) 9, 1005–1008.
81. Ashok K. Singh, R. Singh, **Sudeshna Chandra**, Synthesis and characterization of macrocyclic complexes of nickel(II), cobalt(II) and copper(II) containing a tetradentate- $\text{N}_6$  macrocyclic ligand, *Journal of the Indian Chemical Society* (1997) 74, 5–7.

82. Randhir Singh and **Sudeshna Chandra**, Synthesis and characterization of Ni (II), Cu and Pd (II) complexes of dibenzotetraaza tetraaza tetradentate macrocyclic ligand, *Indian Journal of Chemistry* (1995) 34A, 1003–1005.

#### **Manuscripts under review/preparation**

1. Shirish K Phanse, Shriya Sawant, Harinder Singh, and **Sudeshna Chandra**, Physico-chemical and release profile of encapsulated Dhavana oil from base powder matrices and their antimicrobial efficiency, *Under review*.
2. **Sudeshna Chandra** and Antje Baeumner, UCNP-doped nanofibers enable superior miniaturized bioanalytical sensing, *Under preparation*.

#### **Conference Participation (selected)**

1. Invited speaker at Molecular Imaging North Competence Center (MOIN CC), Dept. of Radiology and Neuroradiology, Christian-Albrechts-Universität zu Kiel, Germany on March 24, 2022. The talk was entitled “Multifaceted applications of magnetic nanoparticles”.
2. Invited speaker at International Online Conference on Nano Materials (ICN 2021), held from April 9-11, 2021 at Mahatma Gandhi University, Kottayam, Kerala, India . The talk was entitled “Simultaneous voltammetric and electrochemiluminescence immunodetection of specific liver cancer biomarkers using magnetite-conjugated poly-amidoamine dendrimers”.
3. Keynote speaker at the International E-conference on Current Approaches in Life Sciences for Sustainable Development, organized by Yashavantrao Chavan Institute of Science, Satara from March 19-20, 2021. The talk was entitled “Development of nano-biosensor for early detection of liver cancer”.
4. Panellist at Education New Zealand-India Academic Conclave, held on August 20, 2019.
5. Invited Speaker at AVISHKAR RESEARCH CONVENTION WORKSHOP 2019-20, organized by Bombay College of Pharmacy and Mumbai University, held on August 3, 2019.
6. Invited Speaker at Training Program on Advances in Nano-biotechnological Tools in Fisheries held at ICAR-Central Institute of Fisheries Education on December 4-13, 2017. The talk was entitled “Nanobiosensors and their applications”.

7. Paper entitled "Fabrication of Bio-Magnetic Sensors based on Macromolecules Functionalized Iron Oxide Nanoparticles" presented at the 11th International Conference on the Scientific and Clinical Applications of Magnetic Carriers, Vancouver, Canada from May 31 - June 4, 2016 .
8. Paper entitled "Porphyrin Biosensors for Detection of Nitric Oxide Released by Cancer Cells" presented at the 6th DAE-BRNS Interdisciplinary Symposium on Materials Chemistry, at BARC, Mumbai from December 6-10, 2016.
9. Work presentation entitled "Dendrimer-Magnetic Nanoparticles as Electrode Material for Supercapacitors" in Workshop on Materials Science for Energy Storage held at The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy from June 11-15, 2015.
10. Invited talk on "Development of an electrochemical nanobiosensor and imaging technique for early detection of cervical cancer" at the International Symposium on nanotechnology and Cancer Theranostics at Indian Institute of Technology Bombay, Mumbai, India from February 19-21, 2015.
11. Keynote speaker at the TEQIP sponsored International Conference on Innovations and Research Dimensions in Nanobiopharmaceutical Technology, held at Anna University during October 7-8, 2014. The talk was entitled " Cancer Theranostics Through Multifunctional Magnetic Nanoparticles".
12. Oral presentation on "Dendrimer-Magnetic Nanoparticles as Multiple Stimuli Responsive and Enzymatic Drug Delivery Vehicle" at the 10th International Conference on the Scientific and Clinical Applications of Magnetic Carriers held at Dresden, Germany from June 10-14, 2014.
13. Paper entitled "Spectroelectrochemical, impedimetric and biomagnetic catechol sensor based on polyaniline-iron oxide magnetic nanocomposite" presented at the 3rd meeting on Frontiers in Biomagnetic Particles at Telluride, Colorado, USA from June 2-5, 2013.
14. Paper entitled "Design of a glucose amperometric biosensor by novel arginated Fe<sub>3</sub>O<sub>4</sub> nanoparticles" presented at the 8th International Conference on the Scientific and Clinical Applications of Magnetic Carrier held at Rostock, Germany from May 25-29, 2010.
15. Paper entitled "Crown ether and triethylene glycol ether end-capped carbosilane dendrimers and their use as chemical sensors" accepted for poster presentation in Leopoldina Meeting "Dendrimers: Platform for Chemical Functionality" at Heidelberg, Germany from March 18-19, 2005.
16. Paper entitled "Chemical Sensor for Lanthanum (III) Determination using Aza Crown as Ionophore in PVC Matrix" accepted for oral presentation in the 9th International Meeting on Chemical Sensors to be held at Boston, USA during July 7-10, 2002.



17. Paper entitled "A quadridentate macrocyclic PVC based membrane sensor for magnesium" presented in the Eighth International Conference on Bioinorganic Chemistry, held at Yokohama, Japan in July 27 to August 1, 1997.