

Contact Information

Centre for Advanced Materials and Industrial Chemistry (CAMIC), School of Science, RMIT University, Melbourne (VIC) 3001, Australia, Tel: 0061 3 9925 2397

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Visa status: Australian Permanent Resident

Research/Academic Experience

- **RMIT University, Melbourne, Australia** [09/2014-Onwards]
Research Fellow, CAMIC, School of Applied Sciences
- **Monash University, Clayton, Australia** [10/2015-12/2016]
Research Fellow, BioMechatronics Devices & Systems lab, Department of Mechanical and Aerospace Engineering
- **CSIRO, Clayton, VIC, Australia** [09/2013-09/2014]
CSIRO-RMIT Research Scientist, Manufacturing Flagship
- **RMIT University, Melbourne, Australia** [08/2009-08/2013]
Postdoctoral Fellow, School of Applied Sciences
Endeavour Research Fellow, School of Applied Sciences
- **National Chemical Laboratory, Pune, India, PhD Scholar** [01/2004-07/2009]
- **Central Drug Research Institute, Lucknow, India, Junior Research Fellow** [12/2002-01/2004]
- **Birla Institute of Scientific Research, Jaipur, India, Project Assistant** [08/2002-12/2002]
- **JLN Medical College, Ajmer, India, Postgraduate Researcher** [04/2001-07/2001]

Academic Qualifications

- **Ph.D., Nanobiochemistry**, NCIM, National Chemical Laboratory, Pune, India [06/2005-04/2010]
Title: Phytase from *A. niger* NCIM 563: Isolation, purification, characterization and applications.
*Best PhD Thesis Award for **exploring novel applications of Enzymes in Nanobiotechnology***
- **M.Sc., Microbiology**, M. D. S. University, Ajmer, India [2000-2002]
3rd Rank in University
- **B.Sc., Biology, Chemistry**, Rajasthan University, Jaipur, India [1997-2000]
First rank in College

Research Interests (For full technical skills see **Appendix A**)

- Microbial enzyme production (both by sub-merged and solid state fermentation), purification, biochemical characterization and application in animal feed, biomass conversion to value added products (biofuels) and pesticides (organophosphates) removal from environment.
- Biocatalytic and Bio-macromolecular (Peptide, Protein, DNA, Lipids, Nano-cellulose) self-assembly and applications in drug delivery, enzyme reusability/stability, gene transfer and biotransformation.
- Study the interactions of Biomolecules –nanoparticles/Carbon Nanotube/Graphene/Graphene Quantum Dots/Gold nanoparticles and
- Study of DNA's Interaction with volatile organic compounds (CH₃CHO, NH₃ etc.) by QCM
- High Intensity Focused Ultrasound for liver cancer management and drug delivery (**Project at Monash University**)

Research Contributions (For details and full list see **Appendix B**)

- 22 papers in peer-reviewed journals including *Langmuir*, *Biomacromolecules*, *PCCP* and *PLoS One*
- 2 patents and 1 gene in NCBI Genebank

- 5 invited talks, 8 Contributed talks, and 8 poster presentations
- Total Citations: ~222, *h*-index 9 (Source: *Google Scholar*)

Selected publications

- Self-assembled functional nanostructure of plasmid DNA with Ionic Liquid [BMIM][PF₆]:Enhanced efficiency in bacterial gene transformation, **Sarvesh K Soni**, Sampa Sarkar, Nedaossadat Mirzadeh, PR. Selvakannana, Suresh K Bhargava, *Langmuir*, 31(16), 2015, 4722. **IF= 4.457 (corresponding author)**
- Self-Assembled histidine acid phosphatase nanocapsules in ionic liquid [BMIM][BF₄] as functional templates for hollow metal nanoparticles , **Sarvesh K. Soni**, PR Selvakannan, S Bhargava, V Bansal. *Langmuir*, 28 (28), 2012, 10389. **IF= 4.457**
- A facile approach for the dispersion of regenerated cellulose in aqueous system in the form of nanoparticles , M Adsul, **Sarvesh K. Soni**, SK Bhargava, V Bansal, *Biomacromolecules*, 2012, 13, 2890. **IF= 5.75**
- Self-assembled enzyme nanocapsules in Ionic Liquid [BMIM-BF₄] as templating nanoreactors for hollow silica nanocontainers. **Sarvesh K. Soni**, Rajesh Ramanathan, Peter J. Coloe, Vipul Bansal, Suresh K. Bhargava. *Langmuir*, 2010, 26 (20), 16020–16024. **IF=4.457**

Post Graduate Supervision and Teaching:

- Registered category 1 (primary) PhD supervisor at RMIT University. [2012-till date]
- Mentor for ‘*ONPS2335 Professional Scientist course*, at SAS, RMIT University [2013-2015]
- 8 Endeavour research Fellows (each for 6 months) (for projects see *Appendix C*) [2010-2015]
- Co-supervised 3 project assistants (with Dr JM Khire, NCL, Pune) [2004-2009]

Selected Awards: (For full list see *Appendix C*)

- School of Applied Science-ECR forum pilot grant, RMIT University [12/ 2014]
- Best Presentation Award at Australia-India Joint Symposium on Smart Nano-Materials-2011, RMIT University, Australia. [11/2011]
- Endeavour research award by DEEWR, Australian Government. [08/2009]
- Best Research scholar award of National Chemical Laboratory, Pune, India. [02/2009]
- Graduate Excellence in Material Science (GEMS) award by the American Ceramics Society, Pittsburgh, USA. [10/2008]
- Best Posters Award at MS 2007, Symposium on recent developments in mass spectrometry applications, National Chemical Laboratory, Pune, India. [05/2007]
- Best Poster award on National Science Day at NCL, Pune, India. [02/2006]

Selected Successful Research Grants: (For full list see *Appendix D*)

- Co-investigator: Size-dependent Biocatalytic/Catalytic reactivity of metal/ metal oxide nanoparticles by CSIRO, Clayton, Australia and RMIT University. AU\$100 K [2013-2014]
- 13 Endeavour research grants by DEEWR, Australian Government. AU\$ 25 K each [2009-2015]

Provisional Service and other relevant Information (For full list see *Appendix E*)

- Peer Reviewer: Scientific Reports, Enzy and Microb. Tech., W J Microbiol and Biotech, Process Biochem, *PLoS One*, *Langmuir*, J Mat. Chem., Nanotech, J of Chem Tech & Bio tech.
- **Editorial Board member** for The Henry Journal of Nanoscience, Nanomedicine & Nanobiology. <http://henrypublishinggroup.com/index.php/nanomedicine/about/editorialTeam> [Since 03/2016]
- Editorial board member of Asian J of Medical Sciences (eISSN 2091-0576) (IF 2.94) [Till 08/2013]
- Joint Secretary, Aus-India Joint Symposia on Smart Nanomaterials, RMIT, VIC. [11/2011]
- President of NCL-Technology and Entrepreneurship Club, NCL, Pune, India [Till 04/2009]

Appendix for CV: Dr Sarvesh K Soni (Appendix A)

Techniques Known/expertise:

Nano-Biotechnology/Soft Matter Science

- Nanomaterials based non-viral Gene (pGFP) delivery
- Synthesis of Protein/Polymer Nanocapsules for drug delivery (LBL, SC-MS, Amphiphile Self-assembly-Ionic Liquid)
- Enzyme/amino acid (Phytase, Lipase, Protease, BSA etc.) based synthesis of various nanomaterials (Hydroxyapatite, Silica and Metal hollow spheres (Au, Ag, Ni, Pd, and Pt)
- Biocompatibility/cytotoxicity studies of biomaterial on various cell lines including Osteoblasts MG-63, HL-60, MCF-7, and HepG2.
- Material/Biomaterial characterization techniques (hands on experience) :- FTIR, NMR, Nano-SEM, Cryo-TEM, Environmental SEM, TEM (>300 hour of experience), HR-TEM, X-RD, SAXS, EDAX, TGA, DSC and DLS)
(Extensive experience in handling of transmission electron microscope (TEM) (more than 300 hours of instrument usage along with expertise in instrument alignment and maintenance)
- Spectrophotometric Analysis (UV-VIS, Fluorescence/luminescence and Raman)

Microbiology/Bioprocessing

- Isolation and screening of microorganisms for production of different industrially important hydrolytic enzymes and metabolites
- Handling of Bioreactors (3, 5, 10 litre Lab scale NBS Fermentor) and downstream processing for different proteins and metabolites
- Microbial strain improvement by UV and Chemical mutagens
- Microbial conversion of biomass to biofuel
- Handling of Compound microscope, Phase contrast and Fluorescence microscope

Cell biology/Molecular Biology

- Basic mammalian cell culture techniques and maintenance
- DNA isolation (PGFP plasmid) and transfection/transformation
- Agarose gel electrophoresis

Protein Chemistry

- Enzyme purification and biochemical characterization
- Active site characterization using chemical modification
- Electrophoresis Techniques (SDS page, Agarose, Isoelectric Focusing, 2-D electrophoresis)
- MALDI-TOF analysis of In-gel Trypsin digested proteins

Analytical chemistry

- Chromatographic Techniques (Paper, TLC, GC, HPLC, FPLC)

(Appendix B)

Peer Reviewed Journal Publications:

23. Microfluidic synthesis of nanoparticles and their bio-sensing applications, Jyoti Boken, **Sarvesh K Soni***, Dinesh Kumar, *Critical Review in Analytical Chemistry*, 2016, DOI: 10.1080/10408347.2016.1169912. IF= **1.618** (*corresponding author)
22. Self-assembled lipase nanosphere templated one-pot biogenic synthesis of silica hollow spheres in Ionic Liquid [Bmim][PF₆], Sampa Sarkar, Kashuram Mantri, Dinesh Kumar, Suresh Bhargava*, **Sarvesh K. Soni***, *RSC Advances*, 2015, 5, 105800 – 105809. IF= **3.907** (*corresponding author)
21. A mechanistic insight in to highly selective colorimetric detection of Cr⁶⁺ in aqueous systems by flower shaped silver nanoparticles, Priyanka Joshi, Sampa Sarkar, **Sarvesh K Soni***, Dinesh Kumar, *RSC Advances*, RA-ART-01-2016-001798-R1 (accepted with minor revision) IF= **3.907** (*corresponding author)
20. Charge-switchable gold nanoparticles for enhanced enzymatic thermostability, Shiv Shankar, **Sarvesh K Soni**, Hemant Daima, Selvakannan Periasamy, Vipul Bansal, Suresh K Bhargava, *Physical Chemistry Chemical Physics*, 2015, 17, 21517-21524. IF= **4.493**
19. Intrinsic therapeutic and biocatalytic roles of ionic liquid mediated self-assembled platinum-phytase nanosphere, **Sarvesh K Soni***, Sampa Sarkar, Dhiman Sarkar, Selvakannan R. Periasamy, Suresh K Bhargava, *RSC Advances*, 2015, 5, 62871-62881. IF= **3.907** (*corresponding author)
18. Ag_{core}-Au_{shell} bimetallic nanocomposites: Gold shell thickness dependent study for SERS enhancement, Parul Khurana, Sheenam Thatai, Surendra Prasad, **Sarvesh K. Soni**, Dinesh Kumar, *Microchemical Journal*, 2016, 124, 819-823. IF=**3.051**
17. Self-assembled functional nanostructure of plasmid DNA with Ionic Liquid [Bmim][PF₆]:Enhanced efficiency in bacterial gene transformation, **Sarvesh K Soni***, Sampa Sarkar, Nedaossadat Mirzadeh, PR. Selvakannana, Suresh K Bhargava, *Langmuir*, 31(16), 2015, 4722-4732. IF= **4.457** (*corresponding author)
16. Trace colorimetric detection of Pb²⁺ using plasmonic gold nanoparticles and silica-gold nanocomposites, Sheenam Thatai, Parul Khurana, Surendra Prasad, **Sarvesh K Soni**, Dinesh Kumar, *Microchemical Journal*, 2016, 124, 104-110. IF= **3.051**
15. Structural evaluation and catalytic performance of nano-Au supported on nanocrystalline Ce_{0.9}Fe_{0.1}O_{2-δ} solid solution for oxidation of carbon monoxide and benzylamine. P. Sudarsanam, , PR. Selvakannan, **Sarvesh K. Soni**, Suresh K. Bhargava, Benjaram M. Reddy, *RSC Advances*, 2014, 4, 43460-43469. IF=**3.907**
14. Phytase isozymes from *Aspergillus niger* NCIM 563 under solid state fermentation: Biochemical characterization and their correlation with submerged fermentation. Kavita Bhavsar, Priyanka CV: Dr. Sarvesh Kumar Soni

- Buddhiwant, **Sarvesh K. Soni**, Dilip Depen, Sampa Sarkar & J. M. Khire, *Process Biochemistry*, 48, 2013, 1618-1625. **IF= 2.909**
13. A facile approach for the dispersion of regenerated cellulose in aqueous system in the form of nanoparticles, Mukund Adsul, **Sarvesh K. Soni**, Suresh K. Bhargava, Vipul Bansal, *Biomacromolecules*, 2012, 13, 2890–2895. **IF= 5.75**
12. Self-Assembled histidine acid phosphatase nanocapsules in ionic liquid [BMIM][BF₄] as functional templates for hollow metal nanoparticles. **Sarvesh K. Soni**, Selvakannan Periasamy, Suresh Bhargava, Vipul Bansal, *Langmuir*, 28 (28), 2012, 10389-10397. **IF= 4.457**
11. Cationic Amino Acids Specific Biomimetic Silicification in Ionic Liquid: A Quest to Understand the Formation of 3-D Structures in Diatoms. Rajesh Ramanathan, Jos Campbell, **Sarvesh K. Soni**, Suresh K. Bhargava and Vipul Bansal. *PLoS One*, 6(3), 2011: e17707. **IF=4.244**
10. Self-assembled enzyme nanocapsules in Ionic Liquid [BMIM-BF₄] as templating nanoreactors for hollow silica nanocontainers. **Sarvesh K. Soni**, Rajesh Ramanathan, Peter J. Coloe, Vipul Bansal, Suresh K. Bhargava. *Langmuir*, 2010, 26 (20), 16020–16024. **IF=4.457**
9. Self-assembled Protein Nanocapsules in Ionic Liquids as Templating Nanoreactors for enzyme-encapsulated Hollow Nanocontainers. V. Bansal, **Sarvesh K. Soni**, S. K. Bhargava, *European Cells and Materials*, Vol. 20. Suppl. 3, 2010, pp. 11, Pages: 988099-988099, ISSN 1473-2262. **IF=5.984**
8. Purification and characterization of two distinct acidic phytases with broad pH stability from *A. Niger* NCIM 563. **Sarvesh K. Soni**, Ajit S. Magadum, J. M. Khire. *World J Microbiol Biotechnol* (2010) 26: 2009-2018. **IF=1.779**
7. Strain improvement and upscaling of phytase production by *Aspergillus niger* NCIM 563 under submerged fermentation conditions. Parin Shah, Kavita Bhavasar, **Sarvesh K. Soni**, J. M. Khire. *J. Industrial Microbiology and Biotechnology* (2009) 36 (3):373-80. **IF=2.439**
6. Influence of pretreatment of agricultural residues on phytase production by *Aspergillus niger* NCIM 563. Kavita Bhavasar, Parin Shah, **Sarvesh K. Soni**, J. M. Khire. *African J Biotechnology* (2008) 7: 1101-1108. **IF=.573**
5. Production and partial characterization of two types of phytase from *Aspergillus niger* NCIM 563 under submerged fermentation conditions. **Sarvesh K. Soni**, J.M. Khire, *World J Microbiol Biotechnol* (2007) 23:1585–1593. **IF=1.779**
4. Highly acidic phytase from *Aspergillus niger* NCIM 563 under submerged fermentation. **Sarvesh K. Soni**, J. M. Khire, *FEBS Journals*, (2006) 273: Issue Supplement s1, 301-301, DOI: 10.1111/j.1742-4658.2006.05277.x. **IF=4.001**

Gene sequence:

3. *Aspergillus Niger* NCIM 563 5S r RNA gene fragment. NCBI GenBank accession number. **Sarvesh K. Soni**, J.M. Khire. bankit1327764 GU984047.

Other publications:

2. **Sarvesh K Soni** (2010). Phytase from *Aspergillus niger* NCIM 563: Isolation, purification, characterization and its applications. PhD thesis, Pune University, Pune (India).
1. **Sarvesh K Soni** (2002). Dominant bacteria of respiratory tract infection. M.Sc. dissertation thesis, JLN Medical College, Ajmer (India).

Publications under communication/Review:

1. A QCM based ‘on-off’ mechanistic study of gas adsorption by plasmid DNA and DNA-[Bmim][PF₆] construct , **Sarvesh Kumar Soni***, K M Mohibul Kabir, Ravichandar Babarao, Victoria Elizabeth Coyle, Ylias Sabri, Suresh K Bhargava*, **Analytical Chemistry**, 2016. (***corresponding author**)
2. Synthesis and characterization of thorium (IV) complexes of 2-aminothiazole and their evaluation as effective antimicrobial and antioxidant agents, Neelima Mishra, Kavita Poonia, Nutan Sharma, **Sarvesh K Soni***, Dinesh Kumar, **Polyhedron**, 2016. (***corresponding author**)
3. Role of respiratory nitrate reductase on survival of *Mycobacterium tuberculosis* in host macrophages and pathogenesis, Sampa Sarkar*, Vishal Mistry, **Sarvesh K Soni***, **RSC Advances**, 2016 (*** corresponding author**)
4. Microwave assisted synthesis, characterization and antimicrobial activity of Schiff base Ce(III) complexes, Neelima Mishra, Kavita Poonia, **Sarvesh K. Soni***, Dinesh Kumar, **Polyhedron**, 2016. (***corresponding author**)
5. Cubical ceria nanoparticles: A mechanistic insight and adsorption characteristics for excellent fluoride removal and enzyme like activity, Ankita Dhillon, Tarun Sharma, **Sarvesh K Soni***, Dinesh Kumar*, **RSC Advances**, 2016. (***corresponding author**)
6. Solid state self-assembly directed formation of nanoscale hybrid materials of Nucleobases and Phosphomolybdic acid: Functional templates for the synthesis of metal nanoparticles, H. Chhipa, **Sarvesh K Soni**, Srinivas T., PR.Selvakannan*, S.K. Bhargava*, **Journal of Materials Chemistry B**, 2016.
7. Water recovery from food industry effluent through a hybrid process comprising of membrane bioreactor and reverse osmosis. K. Praneeth, **Sarvesh K Soni**, Suresh K Bhargava, B. Aakruthi Vaishnavi, S. Sridhar, **Journal of Environmental Engineering**, 2015

Patents:

1. A process for preparation of novel acidic phytase (pH 2.5) by *Aspergillus niger* NCIM 563 under submerged fermentation condition. **Sarvesh K. Soni**, J. M. Khire. Indian patent. Council of Scientific & Industrial Research, NF 180/2005.
2. A novel process for the simultaneous synthesis of inositol phosphate, myo-inositol phosphate and calcium phosphate from agricultural residues **Sarvesh K. Soni**, Dilip Depen, J. M. Khire, R.P. Singh. Council of Scientific & Industrial Research, 529/DEL/2008.

Selected published refereed conference Articles/abstracts:

Oral presentations

1. Self-Assembled Bio-macromolecules in Ionic Liquids and Applications, **Sarvesh Kumar Soni**, Australian Nanotechnology Network, Early Career Researchers Meeting, University of Technology Sydney, 10-11 July, 2014.
2. Self-Assembled Protein Nanocapsules in Ionic Liquids and its applications. **Sarvesh Kumar Soni**, V. Bansal, S. K. Bhargava, CHEMECA-2012, Wellington, New Zealand, 23–26 September 2012.
3. A Versatile Approach for Synthesis of Hollow Metal Nanospheres in Ionic Liquid [BMIM][BF₄] by employing Self-Assembled Histidine Acid Phosphatase Nanocapsules as Soft Templates. **Sarvesh K. Soni**, P. J. Coloe and V. Bansal, S. K. Bhargava. ICONN-2012, Perth, Australia.
4. Self-assembled Histidine Acid Phosphatase Nanocapsules as Templates for Multifunctional Hollow Platinum Nanospheres in Ionic Liquid [BMIM][BF₄] for Drug Delivery. **Sarvesh K. Soni**, Sampa Sarkar, Dhiman Sarkar, Peter J. Coloe, Vipul Bansal, Suresh K. Bhargava. Submission No. 55300328, CHEMECA 2011, 18-21 September 2011, Sydney, Australia.
5. Cationic amino acids mediated biomimetic silicification studies in ionic liquid [BMIM][BF₄]. Rajesh Ramanathan, **Sarvesh K. Soni**, Suresh K. Bhargava, and Vipul Bansal. Submission No. 49600107, CHEMECA 2010, 26–29 September 2010, Adelaide, Australia.
6. Self-assembled histidine acid phosphatase nanocapsules in ionic liquid [BMIM][BF₄] as functional template for hollow silica nanoparticles. **Sarvesh K. Soni**, Rajesh Ramanathan, Peter J Coloe, Suresh K. Bhargava, and Vipul Bansal. Submission No. 49600107, CHEMECA 2010, 26–29 September 2010, Adelaide, Australia.
7. Biomimetic synthesis of nanosized Hydroxyapatite and its polymorphs, **Sarvesh K. Soni**, J.M. Khire. Oral presentation at the 110th meeting of The American Ceramics Society, October 5-9, 2008 at the Pittsburgh Convention Centre, Pittsburgh, Pennsylvania, USA. (**GEMS Award by ACerS**)

Poster presentations

1. Self-Assembled Protein Nanocapsules In Ionic Liquids As Templating Nanoreactors for Enzyme-Encapsulated Hollow Nanocontainers and Cancer Drug Delivery. **Sarvesh K. Soni**, Sampa Sarkar, Rajesh Ramanathan, Kshudiram Mantri, Dhiman Sarkar, J M Khire, Peter J. Coloe, Vipul Bansal and Suresh K. Bhargava. PW-17, Australia-India Joint Symposium on Smart Nanomaterials in Victoria-2011. 2-4 Nov. 2011, RMIT University, Melbourne. (**Best Poster**)
2. Biomimetic silicification studies in ionic liquid [BMIM][BF₄] to mimic 3D ornate diatom structures. Rajesh Ramanathan, Jos L. Campbell, **Sarvesh K. Soni**, Suresh K. Bhargava, Vipul

- Bansal. Australia-India Joint Symposium on Smart Nanomaterials in Victoria-2011. 2-4 Nov. 2011, RMIT University, Melbourne.
3. Immobilization of phytase on tyrosine functionalized gold nanoparticle. Shiv Shankar, Sarvesh Kumar Soni, J M Khire, Vipul Bansal and Suresh Bhargava. Australia-India Joint Symposium on Smart Nanomaterials in Victoria-2011. 2-4 Nov. 2011, RMIT University, Melbourne.
 4. Self-assembled protein nanocapsules in ionic liquids as templating nanoreactors for enzyme-encapsulated hollow nanocontainers. V Bansal, Sarvesh K Soni, SK Bhargava, 24-27 August, 2010. 3rd International NanoBio Conference 2010, ETH Zurich, Switzerland.
 5. Biomimetic 'green' synthesis of silica nanoparticles in ionic liquids. Sarvesh K. Soni, Rajesh Ramanathan, Suresh K. Bhargava, and Vipul Bansal. ICONN 2010, 22- 26 February 2010, Sydney, Australia.
 6. MALDI-TOF as a tool to differentiate three phytases produced by *Aspergillus niger* NCIM: 563 under different physiological conditions. Sarvesh K. Soni, A. Korwar, Mahesh J. Kulkarni and Jayant M. Khire. May 2007, MS 2007, Symposium on Recent Developments in Mass Spectrometry Applications, National Chemical Laboratory, Pune, India. **(Best Poster)**
 7. Highly Acidic Phytase from *Aspergillus niger* NCIM:563 under submerged fermentation. Sarvesh K. Soni , J.M. khire, 31st Federation of European Biochemical Societies Congress, 24-29 June 2006, Istanbul, Turkey. <http://www.blackwell-synergy.com/toc/ejb/273/s1>, Poster presentations (pdf), PP832 (Page no.225 of 291).
 8. A Novel highly Acidic *myo*-Inositol hexakisphosphate phosphohydrolase (Phytase) from *Aspergillus niger* NCIM:563, Sarvesh K. Soni , J.M. khire Feb. 2006, National science day ceremony, National chemical laboratory, Pune, India. **(Best Poster)**

Invited Oral Presentations:

1. 'Self –Assembled Bio-macromolecules in Ionic Liquids and Applications' invited by Dr Anita Hill (Chief, CSIRO Process Science and Engineering) at Commonwealth Scientific and Industrial Research Organisation, Clayton, Melbourne, Australia. 7th Nov., 2012.
2. 'Future prospects of Nano-biotechnology' as a visiting faculty on 12th May 2010 at Centre for Conversing Technology, University of Rajasthan, Jaipur, India.
3. Kirti Sangoram award lecture by the Best research scholar 2008, On 28th Feb.2009 (National science day) at National chemical Laboratory, Pune, India.
4. Biomimetic synthesis of nanosized Hydroxyapatite and its polymorphs, at the 110th meeting of The American Ceramics Society, October 5-9, 2008 at the Pittsburgh Convention Centre, Pittsburgh, Pennsylvania, USA.
5. As the president of National Chemical Laboratory-Technology and Entrepreneurship Club (NCL-TEC) presented the activities of NCL-TEC in orientation program of newly joined PhD students at National chemical Laboratory on 1-2 Sept.2008.

(Appendix C)

Awards, Honors and recognition:

2015

1. Early Career Researcher grant of Australian Nanotechnology Network to attending and presenting research work at 'Nanotechnology Entrepreneurship workshop', Griffith University,

Gold Coast Campus, Australia. 10-11 June, 2015.

2014

2. School of Applied Science-ECR forum pilot grant, RMIT University, Dec., 2014
3. Early Career Researcher grant of Australian Nanotechnology Network to attending and presenting research work at Nanobiotechnology session, ANN-ECR workshop, UTS, Sydney, Australia. 10-11 July, 2014
4. Corporate membership of Australian Research Management Society (ARMS), Australia.
<http://researchmanagement.org.au>
5. Winner 3 minute thesis competition, School of Applied Sciences, RMIT University, (presenter PhD student Mr Long Hoang). June, 2014

2013

6. RMIT-CAMIC Achievement Award 2013 for Excellence in international collaborations: forging partnerships with India, RMIT University, Australia. 3rd Dec., 2013.

2011

7. Best Presentation Award at Australia-India Joint Symposium on Smart Nano-Materials-2011. Presented by Dr Megan Clark (Chief of CSIRO), Australia and Prof CNR Rao (Bharat Ratna and Chair, Scientific Advisory council of Prime minister of India), JNCASR, India, RMIT University, Australia. 2-4 Nov. 2011.

2009

8. Selected in final mentoring round (business plan in top 2%) of The Power of ideas initiative by The Economic times, Times of India Group (Largest publishing houses of India) India, June 2009. www.ideas.economictimes.com
9. Endeavour research award (Australian government's internationally highly competitive, merit – based scholarship program) 2009 by Department of Education, Employment and Workplace Relations, Australian Government. (Aug. 2009 to Feb. 2010).
10. Winner of Concepto-08 (a technology idea competition conducted by NCL-TEC and Venture centre, NCL.) Proof-of-Concept Grant Recommendation Award. Recommendation to Director, NCL to support a brief, in-house exercise on the proposed technology idea. Feb.2009.

2008

11. Kirti Sangoram Best research scholar award 2008 of National Chemical Laboratory, Pune, India.
12. Award of foreign travel grant from “Department of Science and technology”, Government of India to support Full travel, Visa and registration fees for oral presentation at the 110th meeting of The American Ceramics Society, October 5-9, 2008, Pittsburgh, PA, USA.
13. Graduate Excellence in Material Science (GEMS) award by Basic Science division of The American Ceramics Society at 110th meeting of The American Ceramics Society, October 5-9, 2008, Pittsburgh, PA, USA.
14. Selected for participation in the ‘Fifth Technology Led Entrepreneurship Programme’ Conducted by CSIR with Indian Institute of Management, Bangalore in June 2008.

2007

15. Best Posters Award at MS 2007, Symposium on Recent Developments in Mass Spectrometry Applications, NCL, Pune, India. May 2007.

2006

16. Fellowships of Federation of European Biochemical Societies (FEBS) and Turkish Biochemical Society (TBS) and Travel grant from Director, NCL Research foundation to attend and present the poster at 31st FEBS Congress, Molecules in health and disease. Istanbul, Turkey, 24 - 30 June 2006. Best Poster award on National Science Day at NCL, Pune, India, Feb. 2006.

2001-2002

18. Qualified Graduate Aptitude Test in Engineering (GATE), conducted by Indian Institute of Technology in Feb. 2002.
19. Best Performer award: Year 2002 at MDS University, Ajmer, India in July 2002.
20. Qualified National Eligibility Test (NET) twice for Junior Research Fellowship (JRF) (Life sciences), conducted by CSIR, India in Dec. 2001 and June 2002. (India's highly competitive examination for individual research fellowship for 5 years, success rate is less than 2%).

(Appendix D)

Contribution to Successful Research Grants:

(Total funding for CAMIC and RMIT, till date: A \$ 436.5 K)

Source	Project Title	Amount
<i>(2014-2015)</i>		
Dept. of Education (Endeavour research Award)	Modification of Cellulosic solid waste for its water absorbance performance	\$25,000
	Executive award to Dr Satya Sarkar in the field of 'Nano-materials based drug delivery'.	\$ 20,000
<i>(2013-2014)</i>		
Dept. of Education (Endeavour research Award)	Synthesis of Cadmium Telluride (CdTe) nanoparticles and their bio-labelling applications.	\$25,000
SAS ECR Pilot grant, 2014, RMIT University	Self-assembling polysaccharide-polymer hybrid hydrogel as a potential carrier for drug delivery in cancer and cardiovascular treatment.	\$ 3,000
<i>(2012-2013)</i>		
CSIRO, Clayton, VIC and RMIT University	Size-dependent Biocatalytic reactivity of metal/ metal oxide nanoparticles	\$100,000
RMIT Foundation	International Visiting Fellowship for Dr BM Reddy, CSIR-IICT, Hyderabad, India	\$4,000
DEEWR (Endeavour research Award)		
	• SERS for sensing biomarkers of infectious diseases	\$25,000
	• Production of fuel additives from bio-glycerol using nanostructured	\$25,000

heterogeneous catalysts

(2011-2012)

RMIT Foundation	Visiting Fellowship for Dr VR Choudhary, CSIR-NCL Pune, India	\$5,000
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DEEWR (Endeavour
research Award)

- | | |
|--|----------|
| • <i>Lactobacillus</i> (Milk bacteria) Protoplast as a biocompatible sub-micron/nano drug delivery vehicle for controlled drug release in cancer therapy | \$25,000 |
| • Synthesis of hybrid Nano-biocomposite of bioactive peptides and functional nanomaterials for anticancer applications | \$25,000 |
| • Utilisation of carbon dioxide (CO ₂) using nanoporous catalysts | \$25,000 |

(2010-2011)

DEEWR (Endeavour
Research Award)

- | | |
|---|----------|
| • Preparation of CNT-Biocatalyst for Biofuels Production | \$25,000 |
| • Fluoride removal by nanofibers isolated from agricultural waste materials. | \$25,000 |
| • Endeavour executive Award to Mr BK Soni (Sr Scientist, ISRO, India) | \$20,000 |
| • The use of human erythrocyte RBCs as a drug delivery system for controlled drug release for cancer therapy. | \$25,000 |

(2009-2010)

DEEWR (Endeavour research Award)	Biocatalytic synthesis of CNT / hydroxyapatite biocomposite – an artificial bone material from agricultural residues	\$25,000
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(2008-2009)

In house project by the National Chemical Laboratory Research foundation	Efficient Biocatalytic production of metal ion chelators (myo-inositol and several myo-inositol phosphoesters) from agricultural residues.	INR 500K (\$12,500)
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(very first example of in-house funding (of NCL) to a research scholar apart from his PhD research objectives, leading to commercialisation of concept, independent thinking and leadership)

(Appendix E)

Professional Memberships:

1. Corporate member of Australian Research Management Society (ARMS), Australia. <http://researchmanagement.org.au> , 2014-Onwards.
2. Member of Proteomics and Metabolomics Victoria. <http://www.pmv.org.au/> , 2009-Onwards.
3. Honorary membership of Royal Australian Chemical Institute (RACI), Australia (offered to best poster awardee of Australia-India Joint Symposium on Smart Nano-materials in Victoria-2011). 2011-2012.
4. ECR member of Australian Nanotechnology Network (ANN), 2010-Onwards. <http://www.ausnano.net/index.php?page=profiles&profile=1414>

5. Member of Nanotechnology Focus group, College of Science, Engineering & Technology, RMIT University, Melbourne, Australia. 2009-Onwards.
6. Member of Association of Microbiologists of India. 2004-Onwards
7. Member of Society of Biological Chemists of India. 2005-Onwards
8. Member of Nature network (an initiative by Nature Publishing group). 2008-Onwards
<http://network.nature.com/profile/suttan>

International Technology based Business Plan Competitions:

Mentor:

For RMIT Business Plan Competition 2014: IICT-RMIT joint PhD students:

- Mr Manu Agarwal (Fuels from the municipal solid waste)
- Mr K Praneeth (Affordable water treatment plants for rural setups)

Team leader:

1. Biotech Student Entrepreneur Team (BEST) India, workshop and competition, conducted by Association of Biotech Led Enterprise (ABLE), Bangalore, India. [07/2009]
2. As all India short list for India Innovation Pioneer Challenge (all India short list) conducted by Indo-US Science and Technology Forum, DST and Intel, at Fulbright house, New Delhi. [05/ 2008]
3. For 'Neuragreen Corporation' (A technology Enterprise) at Young Entrepreneur Scheme (YES) Biotechnology Competition, conducted by DBT, FCO, UKTI as all India short list at British council, New Delhi, India. [09/2007]

Additional Professional Qualifications:

1. Qualified the Certificate Course in Computing (CIC) from Indira Gandhi National Open University (IGNOU), New Delhi.
2. Successfully completed workshop on 'PATENT LAW', conducted by NCL-TEC, Indian patent office, Mumbai and GMGC, India.

Extra-Curricular Activities:

1. Poems (Hindi) published in book 'DESHANTAR' a collection of poems from different part of the world by Hindi Academy, New Delhi, India. [08/2012]
2. Invited for the 'International Hindi Poet's Meet' at Farrukhabad, Kayamganj, UP, India. [12/2012]
3. Actively participates at 'Sahitya Sandhya (literary evening), Melbourne as an honorary poet. [2009-till date] <http://www.sharda.org/SahityaSandhya.htm>
4. General Secretary of the 'Hall of residence I', National Chemical Laboratory, India. [2008-2009]
5. Registered Cricket player of Pune District Cricket Association, Pune, India and Sultan Cricket Club, Melbourne, Australia.
6. NCL, team member of the '39th Shanti Swarup Bhatnagar Memorial Cricket Tournament' (A national level tournament) Winners at NEIST, Jorhat, Assam, India. [12/2007]
7. Got first prize in 'Hindi' debate and extempore competition at National chemical laboratory, Pune, India. [09/2007].
8. Performed and directed plays/skits at university and Central Drug Research Institute, Lucknow, India. [2003]

Related Web Links:

<http://www.ncbi.nlm.nih.gov/nuccore/295322892>

<http://www.rmit.edu.au/research/rmit-india>

<http://www.rmit.edu.au/browse/Research/News/Events/Aus-India%20Nano%20Symposium/>

<http://www.venturecenter.co.in/ncltec/>, <http://ncltec.blogspot.com>

http://niscair.res.in/ScienceCommunication/RnDNewsLetters/csirnews2k8/csirnews_15Dec08.pdf

(Page No. 371-372) As a part of NCL-TEC, We invited Prof George M. Whitesides and he delivered lecture at NCL on 18th, June 2008, titled "Commercializing New Science".

Referees:

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