

CURRICULUM VITAE

Dr. VISHNU AGARWAL

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Assistant Professor

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Educational Qualifications:

- Postdoctoral positions:
 1. 21st Jan 2008 to 30th Oct 2008 under the project “**Apoptosis in male infertility and male contraception: molecular dissection of pathways of induction and execution of cell death in germ cells**” in National Institute of Immunology, New Delhi.
 2. 12th Jan 2009 to 27th Feb 2009 under the project **Role of HSP70 Leishmania infections and stage differentiation** as a DBT-Postdoctoral fellow.
- **Ph.D.** on project entitled “**Molecular Characterization of biofilm forming Candida species on biomaterials**” on May 2008.
- Master of Science (M.Sc.) in Biotechnology in year 2004 from Himachal Pradesh University with first division.
- Bachelor of Science (B.Sc.) in year 2001 from Allahabad University with first division.
- Intermediate (12th) in year 1997 from Uttar Pradesh board with first division.
- High-School (10th) in year 1995 from Uttar Pradesh board with first division

Motilal Nehru National Institute of Technology

Position: Working as Assistant Professor in the Department of Applied Mechanics (Biotechnology) from 3rd March 2009.

Administrative Position:

- Deputy Coordinator, Cultural, to student affairs council (SAC), MNNIT Allahabad.
- Has been involved in various departmental committees including Lab OC, and convener DMPC.
- Technical Committee Member for APJ-CLEED, MNNIT Allahabad.

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- As a member prepared and compiled final report for TEQIP-II (2014-15), MNNIT Allahabad.

Academic Achievements:

- **International travel award** from DBT-Govt of India, to give an oral presentation in Young Chem 2006 during 25-29th Oct, 2006 in Pultusk, Poland.
- **Infectious Disease (ID) Fellow Grant-2007** by American Society for microbiology (ASM) to present the research work at 47th ICAAC to be held at Chicago, USA during 17-20 Sept, 2007.
- DBT-Postdoctoral Research Associateship 2009
- Invited American Chemical Society Lecture ‘**ACS Lecture 2016**’ on 5th May 2016 at SHIATS Allahabad.
- Young Scientist Research Grant from DST, Govt of India.
- Rapid Grant Award from DBT, Govt. of India.
- EMR research Grant from SERB Govt. of India.

Abstract Publication & Papers Presented at Symposia:

1. **Agarwal V.**, Baisya S., Pruthi P., and Pruthi V. Biosurfactant Production by *Pseudomonas Sp. Vsp27* Isolated from oil refinery wastes. 45th annual conference of Association of Microbiologist of India, 23-25 Nov, 2004, Karnal.
2. **Agarwal V.**, Lal P., and Pruthi V. Prevention of *Pseudomonas aeruginosa* biofilm using castor oil. Second Ramanbhai International symposium on Current Trends in Pharmaceutical Sciences: Role of Genomics and Proteomics, 23-25 Jan 2005, Ahmedabad.
3. Lal P., **Agarwal V.**, Ujjawal D., and Pruthi V. Simple, Reliable and Cost-Effective Cromogenic Selection Technique for identifying biofilm forming *Candida* species. Seventh National Symposium on Biochemical Engineering and Biotechnology, 11-12 Mar 2005, I.I.T. Delhi.
4. **Agarwal V.**, Lal P., and Pruthi V. Effect of plant oils on *Candida* Biofilm Structure. International Conference on Plants Genomics and Biotechnology: Challenges and Opportunities, 26-28 Oct 2005, Raipur.
5. Lal P., **Agarwal V.**, and Pruthi V. Effect of mutagenesis on EPS composition in biofilm forming *Candida* species. 46th annual conference of Association of Microbiologist of India, 8-10 Dec, 2005, Hyderabad.

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6. Mahilkar S. and **Agarwal V.** L-Asparaginase: A Potent Enzyme against Leukemia. International Symposium on Frontiers in Genetics and Biotechnology- Reterospect and Prospect, 8-10 Jan 2006, Hyderabad.
7. Lal P., **Agarwal V.**, and Pruthi V. Eucalyptus Oil affects EPS composition and Biofilm formation in *Candida albicans*. XXIV Annual Symposium of Reproductive Biology and Comparative Endocrinology, 14-16 feb 2006, I.I.T. Roorkee.
8. **Agarwal V.**, Lal P., and Pruthi V. Differential drug sensitivity and Biofilm Formation by *Candida* mutant cdr4214. XXIV Annual Symposium of Reproductive Biology and Comparative Endocrinology, 14-16 feb 2006, I.I.T. Roorkee.
9. **Agarwal V.**, Pruthi V. Prevention of *Candida* biofilm on biomaterials by furanones coating. International Congress of young chemists öYoungChem2006ö, 25-29 Oct 2006, Pultusk, Poland.
10. **Agarwal V.**, and Pruthi V. Control of *Candida* biofilm by biosurfactants. EMBO workshop, 16-20 December, 2006, I.I.T. Kanpur.
11. **Agarwal V.**, Pruthi V. CLSM studies of *Candida albicans* biofilm on biomaterials. Biofilm 2007, 25-29 March, 2007, Quebec, Canada.
12. **Agarwal V.**, Pruthi P., Pierera BMJ, and Pruthi V. Effect of enzymes on *Candida albicans* biofilm: Role of CDR1 genes. 47th ICAAC, 17-20 Sept, 2007, Chicago USA.
13. **Lal P.**, Agarwal V., Pruthi P., and Pruthi V. Reduction in *candida albicans* exopolysaccharide production by Bismuth Dimercaprol. 9th ASM conference on *Candida* and Candidiasis, 24-28 march 2008, New York, USA.
14. Naser S A, Tewari RP, and **Agarwal V.** Silver coating: a promising approach against *candida albicans* biofilms on biomaterial surfaces. National conference on Bioprospecting: Access for sustainable development, 19-20 February 2010, MNNIT, Allahabad
15. **Agarwal V.**, Lal P., and Pruthi V. Effect of Biomaterial surface properties on *Candida albicans* biofilm formation and growth patterns. Biofilm IV, 1-3 September 2010, Winchester, UK.
16. Pandey VK, Singh S, and **Agarwal V.** Drug delivery systems and therapeutic strategies against biofilm associated infections. International conference INDIAS, 19-21 September 2010, University of Allahabad, India.
17. Singh S, Pandey VK, Verma P. and **Agarwal V.** Infectious biofilms on biomaterial surfaces. International conference INDIAS, 19-21 September 2010, University of Allahabad, India.
18. Verma P, Tewari RP, and **Agarwal V.** Biofilms on biomaterial surfaces: A complex interplay. International conference INDIAS, 19-21 September 2010, University of Allahabad, India.

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19. Singh S, Pandey VK, Tewari RP and **Agarwal V.** Nanoparticle based drug delivery system: Advantages and application. International conference on Global environment and its sustainability: implications and strategies, 7th November 2010, Vivekananda College, Chennai, India.
20. **Agarwal V.**, Verma P, Mathur AK, Singh A, Kumar D, and Yadav VK. Design and fabrication of Microbial fuel cells for generation of electricity. International conference on Global environment and its sustainability: implications and strategies, 7th November 2010, Vivekananda College, Chennai, India.
21. Pandey V., Singh S., Verma P., Upadhyaya L., Tewari RP., and Agarwal V. *E coli* colonization and biofilms formation on different externally implantable devices. FEMS 2011, 26-30 June 2011, Geneva Switzerland
22. Verma P., Agarwal V., Lal R., and Singh Poonam. Antimicrobial effect of different plant oils on contact lenses and dental plaque. Second international conference on antimicrobial resistance: a cause for global concern. 6-8 Feb 2012. SHIATS, Allahabad.
23. **Khandelwal A.**, Sirohi P. and Agarwal V. Inhibitory Effect of Herbal Oils On *E.Coli* Biofilms. International conference on Microbial Plants and animal research. 29-31 March 2012. Modi Institute of Technology and Science.
24. **Verma P., Sirohi P., Pandey H., Agarwal V.** *Eucalyptus globules* oil containing Eudragit RL-100 nanoparticles against urinary catheter associated *Staphylococcus aureus* biofilms 18-19 October 2012. International Conference on Nanotechnology -NANOCON 012øheld at Bharti Vidya Peeth Pune during.
25. Verma P., Agarwal. V. Differential *drug response of E coli biofilm against gentamycin, ciprofloxacin and Ofloxacin on externally Implantable Devices.* International Conference on Biological Engineering & Natural Science (BBENS'2013). 25-27 Jan 2013, Bangkok, Thailand.
26. Singh P.K., Yadav V.K., kalia M. Verma P. Dohare S. and Agarwal V. Phagocytosis of *S. epidermidis* biofilms by neutrophil: A comparative study of Planktonic and Biofilm Killing. International Conference on Medical and Health Sciences. 13th Sept 2015, Hong Kong.

Publication

1. Agarwal V., Pruthi V. *Candida* biofilm on Biomaterial surfaces. Journal of Biomechanics, 2006, vol 39, suppl 1, pp S589-90.

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2. Agarwal V., Lal P. Pruthi V. Prevention of *Candida albicans* biofilm by plant oils. Mycopathologia 2008, vol 165 (1), pp 13-19. IF=1.528
3. Lal P., Agarwal V., Pruthi P., Pereira BMJ, Kural M R and Pruthi P., Biofilm formation by *Candida albicans* isolated from Intrauterine devices. Indian Journal of Microbiology (2008), vol 48, 438-444. IF=0.988
4. Lal, P., Agarwal V., Pruthi, P., Cameotra S., and Pruthi, V. Biofilm formation by Microorganisms Isolated from Paper Mill Effluent and its Public Health Implications. CLEAN 2008. vol 36 (12), pp 963-968. IF=1.716
5. Lal P., Agarwal V., Pruthi V. Characterization of exopolysaccharide produced by biofilm forming *Candida albicans*. Journal of Biotechnology 2008. Vol 136S, p S759.
6. Agarwal V., Lal P., Pruthi P., Pruthi V. Studies of *Candida albicans* biofilm formed on biomaterial surfaces. Journal of Biotechnology 2008. vol 136S, p. S451.
7. Agarwal V., Lal P., Pruthi P., Effect of Plant Oils on *Candida albicans*. Journal of Microbiology, Immunology and Infection 2010. vol 43 (5), pp 447-451. (IF=2.955)
8. Singh S, Pandey VK, Tewari RP and Agarwal V. Nanoparticle based drug delivery system: Advantages and application. Indian Journal of Science and Technology 2011. vol 4 (3), pp 167-169.
9. Agarwal V., Verma P, Mathur AK, Singh A, Kumar D, and Yadav VK. Design and fabrication of Microbial fuel cells for generation of electricity. Indian Journal of Science and Technology 2011. vol 4 (3), pp 177-180.
10. Singh N, Agarwal V, Pammaraju SC, Pawar R and Vikas Pruthi. Impact of Infectious *Candida albicans* biofilms on biomaterials. Indian Journal of Biotechnology 2011. Vol 10, pp 417-422. (IF=0.287)
11. Laxmi Upadhyaya, Jay Singh, Vishnu Agarwal, and Ravi Prakash Tewari. Biomedical Applications of Carboxymethyl Chitosans. Carbohydrate Polymers 2013. Vol 91(1), pp 452-466 IF= 4.219
12. Laxmi Upadhyaya, Jay Singh, Vishnu Agarwal, and Ravi Prakash Tewari. Recent Progress in Antimicrobial Applications of Nanostructured Materials. Journal of Nanopharmaceutics and Drug Delivery. 2013. Vol 1, pp 4-17.

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13. Laxmi Upadhyaya Jay Singh, Kavyanjali Shukla, Vishnu Agarwal & Ravi Prakash Tewari. Advances in Strategies for Preventive and Diagnostic Health Care (2013) *International Journal of Nanoscience & Technology* Vol 2, pp 11-18.
14. Shweta Ranghar, Parul Sirohi, Pritam Verma and Vishnu Agarwal Nanoparticle-based Drug Delivery Systems: Promising Approaches Against Infections. *Brazilian archives of biology and technology*. 2014. Vol 57 (2) 209-222. IF=0.546
15. Laxmi Upadhyaya, Jay Singh, Vishnu Agarwal, and Ravi Prakash Tewari. The implications of recent advances in carboxymethyl chitosan based targeted drug delivery and tissue engineering applications. *Journal of controlled release*. 2014. Vol 186: 54-87. IF=7.705
16. Akhilesh Kumar Mishra, Himanshu Pandey, Vishnu Agarwal, Pramod W. Ramteke, Avinash C. Pandey. Nanoengineered mesoporous silica nanoparticles for smart delivery of doxorubicin. *Journal of nanoparticle research*. 2014. 16:2515. IF=2.278
17. Laxmi Upadhyaya , Jay Singh, Vishnu Agarwal, A.C. Pandey, Shiv P. Verma, Parimal Das, and R. P. Tewari. In situ grafted nanostructured ZnO/carboxymethyl cellulose nanocomposites for efficient delivery of curcumin to cancer. *Journal of Polymer Research*. 2014. 21:550 (1-9). IF=1.97
18. Dohare S, Dubey SD, Kalia M, Verma P, Pandey H, Singh NK and Agarwal V: Anti-Biofilm Activity of *Eucalyptus Globulus* Oil Encapsulated Silica Nanoparticles against *E. Coli* Biofilm. *International Journal of Pharmaceutical Science and Research* 2014; 5(11): 5011-16.
19. Laxmi Upadhyaya, Jay Singh, Vishnu Agarwal, A.C. Pandey, Shiv P. Verma, Parimal Das, R.P. Tewari. Efficient water soluble nanostructured ZnO grafted O-carboxymethyl chitosan/curcumin-nanocomposite for cancer therapy. *Process Biochemistry*. 2015. 50 (4): 678-688. IF=2.529
20. Manmohit Kalia, Vivek Kumar Yadav, Pradep Kumar Singh, Deepmala Sharma, Himanshu Pandey, Sahid Suhail Narvi and Vishnu Agarwal. (2015) Effect of Cinnamon Oil on Quorum Sensing-Controlled Virulence Factors and Biofilm Formation in *Pseudomonas aeruginosa*. *PLoS ONE* 10(8): e0135495. IF=3.057
21. Himanshu Pandey, Radha Rani and Vishnu Agarwal. (2016). Liposome and Their Applications in Cancer Therapy. *Brazilian archives of biology and technology*. 2016. Vol. 59: e16150477. IF=0.546

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Short term courses organized as coordinator/main teacher

Sl. No.	In the Capacity of	Title	Duration	Organised at	Sponsors	Amount [` in lakhs]	Co-Coordinator[s], if any
1.	Coordinator and main Teacher	Frontiers in Biotechnology	28 May-1 st June 2013	MNNIT Allahabad	Self sponsored		NA
2.	Coordinator and main Teacher	Human Health and environmental sustainability	4 th -8 th June 103	MNNIT Allahabad	Self sponsored		NA
3.	Convener and coordinator	Microbial technology and biofilms: Avenues and Applications	10 th -14 th Jan 2015	MNNIT Allahabad	Self sponsored		NA
3.	Coordinator	Flow Cytometry: Applications in Research, Diagnostics and Health Care Innovation	15-21, December 2015	MNNIT Allahabad	Self sponsored		NA

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Book and book Chapter

- Book Chapter on “**Polymeric Nanoparticles: A Novel Carrier For Drug Delivery**”, Vishnu Agarwal, Himanshu Pandey. 2013 PP: 33-46. Book Title: Advances in Biotechnology: A Practical Approach Eds. HK dhingra, PN Jha, P. Bajpai. Nova Publishers
- Book Chapter on “Herbal product based remedies against microbial infections and resistance”, Vishnu Agarwal, Manisha sachan, Parul sirohi. 2014 PP: 343-370. Book Title: Recent Progress in medicinal plants (volume: 38) Eds. JN govil and Sanjib Bhaattacharya.
- Book Chapter on “Protein, Methylated DNA and Micro RNA: Potential Candidates Towards Sustainable Ovarian Cancer Diagnostics”, **Puja Sinha, Meenal Rastogi, Vishnu Agarwal and Manisha Sachan***. June 2016. Recent Advances In Ovarian Cancer.
- Book Chapter on “**Environmental fate and Eco-toxicity of engineered nanoparticles: current trends and future perspectives**”, **Anamika Kushwaha, Radha Rani, Vishnu Agarwal***. August 2016. In Advanced Nanomaterials for Wastewater Remediation. Pages 387–404. Print ISBN: 978-1-4987-5333-3

Thesis Supervision:

Number of Post Graduates Thesis: 18

Ph.D. Thesis:

Completed: 03

Ongoing: 06

Sponsored Projects Undertaken

Externally Funded Research projects:

- Development of Eucalyptus globules oil containing bioadhesive polymeric nanoparticles and estimation of its cytotoxicity potential and assay against biofilms (**SERB; Govt of India**).
- Study of antibody and human morphonuclear neutrophils (PMN) mediated phagocytosis of PNAG positive Staphylococcus epidermidis biofilms and

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estimation of Caspase-3-like Protease (CLP) production. (**DBT Govt of India**)

- Study of role of lactone signaling and alginate production on neutrophil interaction, apoptosis, and subsequent macrophage mediated phagocytosis against *Pseudomonas aeruginosa* biofilm associated infections (**SERB; Govt of India**)

Internally Funded Research Projects:

- Analysis of catheter associated *Candida albicans* biofilms: Correlations between microbial adhesion and surface properties. (**MNNIT; Allahabad**)
- *Candida albicans* and *P. aeruginosa* biofilm formation and Interactions with medically implantable devices and development of inhibition strategies using nanoparticles. (**TEQIP-II**)

Personal Profile

Name:	Dr. Vishnu Agarwal
Father's name:	Shri Shanti Prakash Agarwal
Date of Birth:	11 th March 1980
Sex:	Male
Marital status:	married
Nationality:	Indian

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