

Dr. Vinita Hooda

Professor

Department of Botany

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Education

Ph.D.	M.D. University, Rohtak
Master of Science (Bio-informatics)	Sikkim Manipal University
Master of Science (Plant Science)	Banasthali Vidyapith , Rajasthan

Postdoctoral training

University of Massachusetts, U.S.A.

Career Profile

Designation	Mode	Institution served	Duration
Professor	Regular	M. D. University, Rohtak	2018-Continue
Associate Professor	Regular	M. D. University, Rohtak	2015-2018
Assistant Professor	Regular	M. D. University, Rohtak	2008- 2015
Lecturer	Regular	Govt. College for Women, Rohtak	2003-2008
Lecturer	Contractual	M.D.University, Rohtak	2000-2003

Awards and Distinctions

Awarded Raman fellowship by UGC for Post Doctoral work in USA

Women Achiever Award by “Amar Ujala” Newspaper

Recipient of Gold Medal during M.Sc.

Qualified NET (Life Sciences) conducted by CSIR-UGC

Research interests

Major areas of research in my lab relate to the field of enzymology (purification and stabilization) and nanobiotechnology. So far, we have explored the use of metal and metal oxide nanoparticles to enhance activity and stability of enzymes such as nitrate reductase, peroxidase, catalase, polyamine oxidase, diamine oxidase, chitinase and oxalate oxidase. Novel nanoparticles/enzymes matrices were also developed for colorimetric/amperometric sensing of nitrates, polyamines and chitin. Additionally, We are also studying the impact of nanoparticles on the crop plants such as *Cicer arietinum*, *Sorghum vulgare* and *Zea mays*.

Projects Undertaken

Title of the Project	Duration	Funding Agency	Amount Mobilized	Status
Effect of changing the nanoscale environment on the activity and stability of nitrate reductase	2011-14	UGC, New Delhi	7,22,000/-	Completed
“Effect of nanoparticles on germination and growth of <i>Vigna radiata</i> ”	2012-13	Dr. Radha Krishnan Fund, M.D. University	10,000/-	Completed
Fabrication of photometric sensing strip for polyamine determination	2013-16	SERB-DST, New Delhi	22,50,000/-	Completed
Development of biosensors for pathogen detection	2012-17	DBT Life Science Builder Grant	5,00,000/-	Completed
Fabrication of silver nanoparticles loaded epoxy membrane and its use for defluoridation of contaminated water	2015-18	HSCST, Panchkula	6,90,000/-	Completed

Mentoring Experience

Masters’ thesis research

Number of students supervised: 25

Ph.D thesis research

No. of registered students: 03

No. of thesis submitted: 03 (**First thesis given the Silver Medal under the “Best Thesis Award” by Maharshi Dayanand University, Rohtak**)

Reviewer for

- i) Applied Biochemistry and Biotechnology, Springer.
- ii) Environmental Pollution, Elsevier
- iii) International Journal of Biological Macromolecules, Elsevier
- iv) Analytical Biochemistry, Elsevier
- v) Applied Surface Science, Elsevier
- vi) International Journal of Nanomedicine, Dove press
- vii) Science of Advanced Materials, American Scientific Publishers
- viii) Advanced Materials Reviews, VBRI Press
- ix) Canadian Journal of Microbiology, NRC Research Press
- x) Fibers and Polymers, Springer

Recent Publications

S.No.	Title of the paper	Name of the author	Title of the Journal	Impact Factor
1.	Improved protein determination assays obtained after substitution of copper sulfate by copper oxide nanoparticles.	Preety, Nidhi Chauhan, Swati Sharma, Vinita Hooda	Analytical Biochemistry, Volume 13, Feb 2018, Pages 19-25	2.334
2.	Identification of coding sequence and its use for functional and structural characterization of catalase from <i>Phyllanthus emblica</i>	Swati Sharma, Vinita Hooda	Bioinformation 14(1): 008-014 (2018)	-
3.	Purification and analytical application of <i>Vigna mungo</i> chitinase for determination of total fungal load of stored cereals	Preety, Swati Sharma, Vinita Hooda	Applied Biochemistry and Biotechnology (Accepted article)	1.751
4.	Enzymes loaded chitosan/coconut fibre/zinc oxide nanoparticles strip for polyamine determination	Vinita Hooda, Archita	Food Chemistry, Volume 239, 15 January 2018, Pages 1100-1109	4.529
5.	A novel polyurethane/nano ZnO matrix for immobilization of chitinolytic enzymes and optical sensing of chitin	Preety, Vinita Hooda	International Journal of Biological Macromolecules, Volume 106, Jan 2018, Pages 1173-1183	3.671
6.	Increasing the efficiency of immobilization and chitin determination using copper oxide nanoparticles	Preety, Vinita Hooda	Talanta, Volume 168, 1 June 2017, Pages 246-256	4.162
7.	Zeolites-AuNPs assembled interface towards amperometric biosensing of spermidine	Nidhi Chauhan, Utkarsh Jain, Rishabh Gandotra, Vinita Hooda	Electrochimica Acta, Volume 230, 10 March 2017, Pages 106-115	4.798
8.	Effect of changing the nanoscale environment on activity and stability of nitrate reductase	Veena Sachdeva, Vinita Hooda	Enzyme and Microbial Technology Volume 89, July 2016, Pages 52-62	2.502
9.	Electrochemical biosensor with graphene oxide nanoparticles and polypyrrole interface for the detection of bilirubin.	Nidhi Chauhan, Rachna Rawal, Vinita Hooda and Utkarsh Jain	<i>RSC Advances</i> , 2016, Volume 6, pp. 63624-33	3.108
10.	Nitrate Quantification: Recent insights into enzyme based methods	Vinita Hooda, Veena Sachdeva, Nidhi Chauhan	Reviews in Analytical Chemistry, Sept. 2016, Vol. 35, Issue 3	1.917
11.	Effect of changing the nanoscale environment on activity and	Veena Sachdeva, Vinita Hooda	Enzyme and Microbial Technology, Volume	2.502

	stability of nitrate reductase		89, July 2016, Pages 52-62
12.	A novel eco-friendly approach for synthesis of silver nanoparticles using glucose oxidase in immobilized form.	Vinita Hooda, Nidhi Chauhan and Preety	<i>Nanoscience & Nanotechnology-Asia</i> , 2016, Vol. 6, No. 2
13.	Immobilization of nitrate reductase onto epoxy affixed silver nanoparticles for determination of soil nitrates	Veena Sachdeva, Vinita Hooda	International Journal of Biological Macromolecules Vol 79 (August 2015) pp. 240-247 3.671
14.	Immobilization and Kinetics of Catalase on Calcium Carbonate Nanoparticles Attached Epoxy Support	Preety & Vinita Hooda	Applied Biochemistry and Biotechnology January 2014, Volume 172, Issue 1, pp 115-130. 1.751
15.	A new immobilization and sensing platform for nitrate quantification	Veena Sachdeva & Vinita Hooda	Talanta, Vol. 124, February 2014, Pp 52–59. 4.162
16.	Allelopathic effects of some weeds on germination and growth of <i>Vigna mungo</i> (L). Hepper	G.Prasada Babu, Vinita Hooda, K.Audiseshamma & Ch. Paramageetham	International Journal of Current Microbiology and Applied Sciences Volume 3 Number 4 (2014) pp. 122-128 -
17.	Influence of Transgenic <i>Bt</i> Crop Root Exudates on Rhizospheric Soil Microflora	K.Audiseshamma, Ch.Paramageetham, P.Charan Theja, Vinita Hooda and G. Prasada Babu	International Journal of Current Microbiology and Applied Sciences Volume 3 Number 5 (2014) pp. 289-294 -

Participation in conferences/ seminars/ training programmes

- i) Oral presentation on the topic “Defluoridation of water using epoxy/silver nanoparticles conjugates” at the Swarna Jayanti National Conference on Biodiversity & Sustainable Utilization of Plant Resources organized by Department of Botany, Kurukshetra University from February 17-18, 2017
- ii) Oral presentation on the topic “Polyamine sensing using amine oxidases/chitosan/zinc oxide nanoparticles conjugated strip” at National Conference on TRENDS IN NANOBIO TECHNOLOGY held at CCS Haryana Agricultural University, Hisar from 29-30th November, 2016
- iii) Poster presentation on the topic “Diverse enzyme based methods for nitrate quantification” at National Conference on “Genetic Diversity and Therapeutic Potential of Natural Products” organized by the Dept. of Genetics, M.D.University, Rohtak on September 17, 2016

- iv) Attended one week training program on “E-content development for Higher Education” organized by UGC, Academic Staff College, B.P.S. Mahila Vishwavidyalaya, Khanpur Kalan (Sonapat) from July 21- 26 July, 2014
- v) Co-chaired a session on ‘Sustainable development’ in the ‘National Seminar on Law and Social Justice in India’ held on March 8-9, 2014 organized by Department of Law, M.D.University
- vi) Presented two posters on the topics “In vitro effects of metal oxide nanoparticles on barley oxalate oxidase” and “Immobilization and kinetics of catalase on calcium carbonate nanoparticles attached epoxy support” at the TechConnect World 2013 conference held at Washington DC, U.S.A. from May 12-16, 2013.
- vii) Attended fifth UGC-Networking Resource Centre Workshop in Biological Sciences from 1st-25th May, 2012 at Indian Institute of Science, Bangalore.
- viii) Presented Paper in International Seminar on “Emerging Threats and Challenges to Biodiversity: Policy Framework for Sustainable Management” at S. V. University, Tirupati from 2nd- 4th March, 2012.
- ix) Attended National Seminar on “Challenges in Combating Diseases: Cause to Cure” organized by Department of Zoology, M.D.University on 23rd March, 2012.
- x) Attended one day National Seminar on “Recent Advances in Application of Genetics” organized by Department of Genetics, M.D.University on 20th March, 2012.
- xi) Presented Paper in “International Conference on Nanomaterials and Nanotechnology” organized at University of Delhi from 18th December – 21st December, 2011.
- xii) Successfully completed the Summer School on “Comparative Genomics and Proteomics in Drug Discovery” from 30th May – 13th June, 2011 at UGC-Networking Resource Centre in Biological Sciences, School of Biological Sciences, Madurai Kamraj University, Madurai – 625021.
- xiii) Presented Poster at a workshop on Nanoscience and Nanotechnology, “Aligarh Nano 1” organized by the Dept. of Applied Physics, from 26th-27th March, 2011 at A.M.U., Aligarh .
- xiv) Attended the refresher course in Life sciences from 15th Feb- 9th March, 2011 organized by CPDHE at Delhi University.
- xv) Attended one-day India-Japan Seminar on “Nanomaterials for Diagnostics and Therapeutics” organized by the Dept. of Biochemistry on Oct 30, 2010 at M.D.University, Rohtak.
- xvi) Successfully completed the three days National Workshop on **Bioinformatics** organized by the Dept. of Biotechnology from 14-16 Sept, 2010 at M.D.University, Rohtak

Other Contributions

Invited Lectures/ talks on

- i) Invited talk on the topic “Plants and Human Welfare” at DST Inspire Science Camp held at Ch. Bansi Lal University Bhiwani from 25th to 29th October, 2016
- ii) Extension lecture delivered at Ch. Bansi Lal University Bhiwani on the topic “Protein Structure Prediction” on 22nd October, 2016.
- iii) Lecture delivered on the topic “Factors affecting personality” at the Lecture Series on “Carrier Opportunities and Competencies for Global Job market” organized by the Institute of Management Studies and Research, M.D.University, Rohtak on 11th November, 2016
- iv) Extension lecture on “Disaster Management” at NSS camp organized by NSS unit, M.D.University in November, 2016
- v) Delivered a lecture on “Protection of Environment” at Kanya Mahavidyalaya Kharkhoda on 24.10.2013
- vi) “ Food Security in the Twenty First Century” at Government College, Julana on 20.08.2011
- vii) “ Origin of Life on Earth” at Government College, Julana on 20.08.2011
- viii) “Climate Change: Environmental and Health Effects” at Government College Julana on 01.12.2010
- ix) “Role of Youth in Environment Preservation” at Government College Julana on 01.12.201
- x) Delivered Radio talk on Özone Parat: Dharti ka suraksha kawach:, recorded on 07.09.2016 and broadcasted on 13.09.2016 at 7: 30 A.M.
- xi) “Ikkiswi sadi mei Khad Suraksha (Food Security in the 21st Century) at All India Radio, Rohtak.
- xii) “Antariksh mein Bharat” at All India Radio, Rohtak.
- xiii) “Pradushan ka Prayay – Global Warming” at All India Radio, Rohtak.
- xiv) “Stem Cell Therapy” at All India Radio, Rohtak.
- xv) “Jal, Vayu tatha Saur Urja” at All India Radio, Rohtak.
- xvi) “Vilupt Hote Vanya Jeevon Se Prabhavit Hota Jan-Jeevan” at All India Radio, Rohtak.

