

Appendices

List of Publications

Journal papers from doctoral research work

1. Pareek, V., Gupta, R. and Panwar, J. 2018. Do physico-chemical properties of silver nanoparticles decide their interaction with biological media and bactericidal action? A review. *Materials Science and Engineering C*, 90: 739-749.
2. Fageria, L.*, Pareek, V*., Dilip, R.V., Bhargava, A., Pasha, S.S., Laskar, I.R., Saini, H., Dash, S., Chowdhury, R. and Panwar, J. 2017. Biosynthesized protein-capped silver nanoparticles induce ROS-dependent pro-apoptotic signals and pro-survival autophagy in cancer cells. *ACS Omega*, 2: 1489-1504. (* denotes equal contribution)
3. Pareek, V., Bhargava, A., Gupta, R., Jain, N. and Panwar, J. 2017. Synthesis and applications of noble metal nanoparticles: A Review. *Advanced Science, Engineering and Medicine*, 9: 1–19.

Papers under communication

1. Pareek, V., Devineau, S., Sivasankaran, S. K., Srikumar, S., Fanning, S., Panwar, J. 2019. Unveiling the action of lysozyme coated silver nanoparticles on *Klebsiella pneumoniae* MGH78578 by RNA sequencing analysis. In “*Current Biology*”.
2. Pareek, V., Devineau, S., Sivasankaran, S. K., Srikumar, S., Bhargava, A., Gupta, R., Khan, M. A., Fanning, S., Panwar, J. 2019. Divulging the antibacterial potential of silver nanoparticles in compare to ions on *Escherichia coli* K12 by transcriptomic analysis. “*The EMBO Report*”.
3. Pareek, V., Bhargava, A., Bhanot, V., Panwar, J. 2019. Biomimetic approach for multifarious synthesis of nanoparticles using metal tolerant fungi: A mechanistic perspective. In “*Material Science and Engineering: B*”

Papers from additional work during Ph.D. tenure

1. Bhargava, A., Pareek, V., Roy Choudhury, S., Panwar, J. and Karmakar, S. 2018. Superior bactericidal efficacy of fucose functionalized silver nanoparticles against *Pseudomonas aeruginosa* PAO1 and prevention of its colonization on urinary catheters. *ACS Applied Materials & Interfaces*, 10: 29325-29337.
2. Pareek, V., Bhargava, A., Vishalakshi, Gupta, R., Jain, N. and Panwar, J. 2018. Formation and characterization of protein corona around nanoparticles: A Review. *Journal of Nanoscience and Nanotechnology*, 18: 6653-6670.

3. Pradhan, S.K., **Pareek, V., Panwar, J.** and Gupta, S. 2019. Synthesis and characterization of eco-friendly silver nanoparticles combined with yttrium oxide (Ag-Y₂O₃) nanocomposite with assorted adsorption capacity for Cu (II) and Cr (VI) removal: A mechanism perspective. *Journal of Water Process Engineering*, 32: 100917.
4. Jain, N., Bhargava, A., **Pareek, V.**, Akhtar, M. S., and Panwar, J. 2017. Does seed size and surface anatomy play role in combating phytotoxicity of nanoparticles? *Ecotoxicology*, 26: 238-249.
5. Bhargava, A., Jain, N., Khan, M.A., **Pareek, V.**, Dilip, R.V. and Panwar, J. 2016. Utilizing metal tolerance potential of soil fungus for efficient synthesis of gold nanoparticles with superior catalytic activity for degradation of rhodamine B. *Journal of Environmental Management*, 183: 22-32.

Conference Abstract

1. **Pareek, V.**, Shabrinath, S., Bhanot, V., Devineau, S., Panwar, J., and Fanning, S. 2019. Effect of Lysozyme coated silver nanoparticles on the transcriptomic response of *Klebsiella pneumonia* MGH78578. In: *29th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID 2019)*, April 13-16, 2019, Amsterdam, The Netherlands. **(Oral presentation)**
2. **Pareek, V.**, Gupta R, Bhargava, A., Bhanot, V., and Panwar, J. 2018. Gene expression profiling of *Escherichia coli* K12 to unveil the silver resistance machinery. In: *6th Central European Symposium on Antimicrobials and Antimicrobial Resistance (CESAR-2018)*, Croatian Microbiology Society, September 19-22, 2018. **(Best Poster Presentation Award)**.
3. **Pareek, V.**, Gupta R, Khan, M.A., Bhargava, A., Vishalakshi, and Panwar, J. 2018. Evaluation of mechanism behind the antibacterial action of silver ions. In: *International Conference on Microbial, Plant and Animal Genome*, March 29-31, 2018, Modi University of Science and Technology, Laxmangarh. **(Oral presentation)**
4. **Pareek, V.**, Bhargava, A., Vishalakshi and Panwar, J. 2017. Mechanistic side of myco-protein mediated synthesis of silver nanoparticles. In: *58th Annual Conference of Association of Microbiologists of India (AMI-2017)*. November 16-19, 2017, Babasaheb Bhimrao Ambedkar University, Lucknow. **(Poster presentation)**

5. **Pareek, V.,** Dilip, R.V., Bhargava, A., and Panwar, J. 2016. Synthesis of multifarious metal nanoparticles from metal tolerant fungus *Penicillium janthinellum* DJP06. In: *2nd International Conference on Recent Advances in Nanosciences and Nanotechnology (ICRANN-2016)*, December 19-20, 2016, Jawaharlal Nehru University, New Delhi. **(Poster presentation)**
6. **Pareek, V.,** Bhargava, A., Khan, M.A., Dilip, R.V., and Panwar, J. Enhanced catalytic degradation of rhodamine B using mycogenic gold nanoparticles. In: *4th International Conference on Advanced Nanomaterials and Nanotechnology*, December 8-11, 2015, Indian Institute of Technology, Guwahati. **(Poster presentation).**

BIOGRAPHY

Prof. Jitendra Panwar

Prof. Jitendra Panwar has completed his Doctoral degree in the area of Mycorrhizal Biotechnology in 2000 from Jai Narayan Vyas University, Jodhpur. After Ph.D., he moved to Division of Soil-Water-Plant Relationship, Central Arid Zone Research Institute (ICAR), Jodhpur for Post-Doctoral studies where he worked in the area of Soil Fertility, Microbiology and Plant Physiology. Subsequently, he has been awarded Young Scientist Project by Department of Science & Technology, New Delhi, India. He joined Department of Biological Sciences, BITS Pilani, Pilani Campus as Assistant Professor in October 2005 and became Associate Professor in February 2013. He served as Head of the Department during September 2012 to August 2014. In 2018, He became the full Professor and selected as the Associate Dean, AGSRD, BITS, Pilani, Pilani Campus. He has handled several research projects in the field of Microbial Biotechnology and Nanobiotechnology, funded by DST, ICAR, UGC and Aditya Birla Group. Prof. Panwar has 22 years of teaching and research experience as in 2020.

Prof. Panwar is also a recipient of “Visiting Professor Fellowship” to visit South Korea for a period of three months under INSA-NRF International Bilateral Exchange/ Collaboration Programme 2011-12. Recently, he has been nominated to visit Czech Republic for one month under INSA-CAS Exchange Programme 2016. He has successfully completed four research projects funded by Department of Science & Technology (DST), New Delhi; Aditya Birla Group, Mumbai; Indian Council of Agricultural Research (ICAR), New Delhi; and University Grant Commission (UGC), New Delhi. Currently, he is working on a research project funded by Aditya Birla Science and Technology Company Private Limited, Mumbai. As a result of his research accomplishments, he has published more than 50 research papers in peer reviewed journals. In addition, Prof. Panwar has presented papers and delivered lectures in several National & International conferences and organizations. His current research interest lies in the area of bio-nanotechnology, nano-fertilizers and protein-nanoparticle interactions.

BIOGRAPHY

Vikram Pareek

Mr. Vikram Pareek did his Graduation in Bachelor of Science (B.Sc.) with specialization in Biotechnology from University of Rajasthan, Jaipur, and Master of Science (M.Sc.) in Biotechnology from SASTRA University, Thanjavur. To pursue his doctoral research, he joined the research group of Prof. Jitendra Panwar at Department of Biological Sciences, Birla Institute of Technology and Science, Pilani, Pilani Campus, India in August 2015. He possesses an active research interest in the area of bio-nanotechnology with major emphasis on the interaction of nanoparticles with bacteria.

Later, he has been awarded with CSIR-SRF fellowship to pursue his Ph.D. research. He has qualified ARS-NET in the year 2018 and also awarded with the prestigious EMBO Short-Term Fellowship for a period of 89 days. Under this fellowship, he has visited UCD-Center for Food Safety, University College, Dublin, Ireland, headed by Prof. Séamus Fanning. During this tenure, he has worked on the RNA sequencing of multidrug resistance bacteria.

He has presented his research work at several national and international conferences and have won the 1st best poster presentation award at “6th Central European Symposium on Antimicrobials and Antimicrobial Resistance (CESAR-2018)”, Croatia. He has received three prestigious fellowships to attend the same conference: DBT-Travel Award and CSIR-Travel grant and ICGEB fee waiver award (selected by the conference organizer's). He has also received the ASM student and postdoctoral travel award to attend the ASM-microbe 2019 held at San-Francisco, USA. He has been selected for the oral presentation at the world class ECCMID-2019 conference held at Amsterdam. In addition, he has received ECC Funded Observership award by The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) to visit Hospital Beatriz Ângelo/ Grupo Luz Saúde, Loures, Portugal in 2020. He has published 9 research articles in journals of international repute till now. He has also been consistently involved in the teaching programme at Department of Biological Sciences, BITS Pilani, Pilani Campus.