
# Dr. Sandeep Kaur

Assistant Professor
Department of Food Science

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## Areas of Interest

- Microbiology
- Phage Therapy
- Waste Management and Myco-remediation
- Mushroom Cultivation
- Anti-Biofilm interventions

## Educational details

| Degree | Year | University | Percentage | Medals/ Positions |
|---|---|---|---|---|
| Ph.D | 2016 | Panjab University, Chandigarh | Awarded Degree | - |
| M.Sc (Hons.) | 2004 | Panjab University, Chandigarh | 74.45% | Gold Medallist |
| B.Sc. (Hons.) | 2002 | Panjab University, Chandigarh | 65.62% | - |
| Matric | 1999 | CBSE | 81% | Merit |

## Professional Details

| Designation | From | To | Organization |
|---|---|---|---|
| Research Associate | 2005 | 2011 | Panacea Biotec Limited. |
| CSIR Senior Research Fellow(SRF) | 2011 | 2014 | Panjab University, Chandigarh |
| Assistant Professor | 2016 | Till date | Mehr Chand Mahajan DAV College for Women, Chandigarh |

## Awards & Recognitions

| Award | Institute | Year |
|---|---|---|
| Awarded with “Bharat Gaurav Puraskar” and “Certificate of Excellence” for contributions, research and achievements in the field of Microbiology conferred | KTK Outstanding Achievers and Education Foundation, registered under Ministry of Corporate Affairs, Govt of India | 2023 |
| Mentor for American Society of Microbiology (**ASM**) Future Leaders **Mentoring Fellowship** (FLMF) program 2023-24 | American Society of Microbiology | 2023 |
| Awarded with Certificate of Recognition for outstanding contributions in conducting student centric activities focused towards | Microbiology Society, India | 2023 |

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| promoting Microbiology among students and society and setting up student Microbiology Unit at college by President (Tricity), Microbiology Society, India | | |
| Awarded with **National level recognition** from Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India for the work done in the areas of Sanitation, Hygiene, Waste Management, Water Management, Energy Management and Greenery Management | Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India | 2022 |
| Awarded with **National level recognition** from Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India for conduction Phase 1 Gandhi Chhadi Drive- a Waste Segregation Initiative | Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India | 2022 |
| Awarded with **National level Recognition** from Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India for successfully conducting and coordinating the Swachhta Action Plan Activities (SAP) 2021-22 and Step up! Conserve Water on Campus | Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India | 2022 |
| Awarded with SAS Eminent Fellow Membership w.e.f 10 Feb 2021 conferred by Scholars Academic and Scientific Society SAS/SEFM/007/2021 in recognition for the contributions in Education and Research | Scholars Academic and Scientific Society | 2021 |
| Awarded with **National level Recognition** from Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India for valuable services to COVID-19 patients under EACH ONE REACH ONE; BEAT COVID CAMPAIGN-2021 | Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India | 2020 |
| Certificate of Appreciation and **Teacher Innovation Award** 2019 conferred by Sri Aurobindo Society and HDFC Bank under zero investment innovative ideas in education initiatives (ZIIEI) | Sri Aurobindo Society and HDFC Bank | 2019 |
| **Young Achiever Award** conferred by Institute of Scholars "ISO: 9001:2015 certified Institute by International Accurate certification; Accredited by UASL | Institute of Scholars | 2019 |
| **Awarded with Senior Research Fellowship (SRF)** by Council of Scientific & Industrial Research [CSIR] New Delhi, Govt of India | CSIR New Delhi, Govt of India | 2004 |

| Research Publications | | | | |
|---|---|---|---|---|
| **Title** | **Journal** | **Refereed** | **Date and Year of Publication** | **Online Link (DOI)** |
| Synthesis, SAR and Biological Evaluation of Novel Phosphorous Containing Oxazolidinone Derivatives as Antibacterial Agents [Pg. No 02-08; Jan 2023] | Current Research Information on Pharmaceutical Sciences (CRIPS) | Peer-Reviewed | Jan 2023 | https://www.niper.gov.in/sites/default/files/inline-files/Vol17No1_Page2_8_0.pdf |
| A mouse air pouch model for evaluating the anti-bacterial efficacy of phage MR-5 in resolving skin and soft tissue infection induced by methicillin resistant Staphylococcus aureus [Pg. No 959-972, Dec 2021] | Folia Microbiologica | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Dec 2021 | https://doi.org/10.1007/s12223-021-00895-9 |
| Nanotechnology Based Approaches in Phage Therapy: Overcoming the Pharmacological Barriers [Pg.No 699054, Oct 2021] | Frontiers in Pharmacology | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Oct 2021 | https://doi.org/10.3389/fphar.2021.699054 |
| Cultivation of Oyster Mushroom (*Pleurotus ostreatus*) from Agro-waste and Dry Leaf Litter in used Plastic Bottles: Community Waste Management Model Targeting Stubble and Dry Leaf Burning [Pg. No : 639-649, June 2021] | Journal of Pure and Applied Microbiology | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | June 2021 | https://doi.org/10.22207/JPAM.15.2.07 |
| Effect of Pre-treatment on the Solid-State Anaerobic Digestion of Willow Dust [Pg.No: 234-246, March, 2020] | Studies in Indian Place Names | Peer-Reviewed Scopus Indexed | March 2020 | - |
| Effect of Probiotic Intervention in Ameliorating the Altered Central Nervous System Functions in Neurological Disorders [Pg. No 18-29, Feb 2020] | The Open Microbiology Journal | Peer-Reviewed and Scopus Indexed | Feb 2020 | http://dx.doi.org/10.2174/1874285802014010018 |

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| Effect of lactation age and storage on the antibacterial potency of human breast milk against neonatal pathogens [Pg. No : 1307-1314, Sep 2018] | Journal of Pure and Applied Microbiology | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Sep 2018 | https://doi.org/10.22207/JPAM.12.3.33 |
| Liposome entrapment of bacteriophages improves wound healing in a diabetic mouse MRSA infection [Pg.No : 561, 2018] | FRONTIERS IN MICROBIOLOGY | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | July 2018 | https://doi.org/10.3389/fmicb.2018.00561 |
| Anti-biofilm potential of aqueous eucalyptus leaf extract against nosocomial pathogens: Staphylococcus, Pseudomonas aeruginosa [Pg.No 425-432, 2018] | The Pharma innovation journal | Peer-Reviewed | Aug 2018 | https://www.thepharmajournal.com/archives/2018/vol7issue11/PartH/7-10-89-693.pdf |
| Transfersomal Phage Cocktail Is an Effective Treatment against Methicillin-Resistant Staphylococcus aureus-Mediated Skin and Soft Tissue Infections [Pg. No e02146-16, July 2017] | Antimicrobial Agents and Chemotherapy | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | July 2017 | https://doi.org/10.1128/aac.02146-16 |
| *In Vivo* assessment of Phage and Linezolid based implant coatings for treatment of methicillin resistant S. aureus (MRSA) mediated Orthopaedic device related infections. PLoS ONE 11(6): e0157626. | PLos One | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Jun 2016 | https://doi.org/10.1371/journal.pone.0157626 |
| Bacteriophage as effective decolonizing agent for elimination of MRSA from anterior nares of BALB/c mice. | BMC Microbiology | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Aug 2014 | https://doi.org/10.1186/s12866-014-0212-8 |
| Bacteriophage Mediated Killing of Staphylococcus aureus In Vitro on Orthopaedic K Wires in Presence of Linezolid Prevents Implant Colonization. PLoS ONE 9(3): e90411. | PLoS ONE | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Mar 2014 | https://doi.org/10.1371/journal.pone.0090411 |
| Bacteriophage-aided intracellular killing of engulfed methicillin-resistant *Staphylococcus aureus* (MRSA) by murine macrophages. Applied | Applied Microbiology and Biotechnology | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | May 2014 | https://doi.org/10.1007/s00253-014-5643-5 |

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| Microbiology and Biotechnology 98(10):4653-4661. | | | | |
| Local delivery of linezolid from poly-D,L-lactide (PDLLA)–linezolid–coated orthopaedic implants to prevent MRSA mediated post- arthroplasty infections. Diagnostic Microbiology and Infectious Disease.79: 387-392. | Diagnostic Microbiology and Infectious Disease | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Jul 2014 | https://doi.org/10.1016/j.diagmicrobio.2014.01.026 |
| Co-therapy using lytic bacteriophage and linezolid: effective treatment in eliminating methicillin resistant Staphylococcus aureus (MRSA) from diabetic foot infections. PLoS ONE 8(2): e56022. 13. | PLoS ONE | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Feb 2013 | https://doi.org/10.1371/journal.pone.0056022 |
| Essential role of calcium in the infection process of broad-spectrum methicillin-resistant Staphylococcus aureus bacteriophage. Journal of Basic Microbiology 54(8):775-780. | Journal of Basic Microbiology | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Aug 2014 | https://doi.org/10.1002/jobm.201300051 |
| Methicillin-resistant *Staphylococcus aureus* phage plaque size enhancement using sub-lethal concentrations of antibiotics. Applied and Environmental Microbiology 78: 8227–8233. | Applied and Environmental Microbiology | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Dec 2012 | https://doi.org/10.1128/aem.02371-12 |
| Therapeutic potential of bacteriophage in treating *Klebsiella pneumoniae* B5055-mediated lobar pneumonia in mice. Journal of Medical Microbiology 57: 1508–1513. | Journal of Medical Microbiology | Peer-Reviewed and Web of Science Indexed; Scopus Indexed | Dec 2008 | https://doi.org/10.1099/jmm.0.2008/002873-0 |

**Books Published**

| Title | Publisher | ISBN | Year of Publication |
|---|---|---|---|

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|---|---|---|---|
| Consumer acceptance to Commercial application of packaging edibles | Springer , Singapore,**Feb 2021** | ISBN:978-981-16-2383-7 | 2021 |
| Book Chapter titled "'Prophylactic and Therapeutic Role of Human Breast Milk Proteins and Bioactive Peptides against Neonatal Bacterial Infections" published in Book 'Breastfeeding and Formula Feeding Infants' | Intech Open | 978-1-83962-721-7 | 2022 |
| Book Chapter titled "Consumer Acceptance to commercial applications of packaging edibles" published in book 'Edible Food Packaging' | Springer, Singapore | ISBN:978-981- 16-238 | 2021 |
| Book chapter titled, "Microbiology as Gen Next Career: Exploring Employability & Scientific Entrepreneurship" published in "Entrepreneurship and Employability: Technical Perspectives" | National Press Associates | 978-93-85835-62-9 | 2018 |

**Research Projects**

| Title | Funding Organization | Year | Status |
|---|---|---|---|
| Awarded Research Project "Pilot Study to Restore and protect Nagar van habitat using Mycoremediation and Microfiltration Practices" | DST **(**Department of Science and Technology and Renewable Energy, Chandigarh Administration), [(No S&T&RE/RP/ 147/e-2873(19-20)/Sanc/03/2020/5324-5331] | 2020 | Completed |
| Awarded Research Project titled, "Biosensor Based Kit for Rapid Detection of *Enterobacteriaceae* in Drinking Water"). | Department of Science and Technology and Renewable Energy, Chandigarh Administration (S&T&RE/RP/147(18-19 | 2018-2019 | Completed |

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|---|---|---|---|
| Awarded Senior Resaerch Fellowship for the project "Polyvalent Phage therapy to treat MRSA mediated systemic or localized infections in experimental mice" | Council of Scientific and Industrial Research. Govt of India | 1st May 2011 to 31st May 2014 | Completed |

**Miscellaneous**

- Associate Editorial Board Member of "The Open Microbiology Journal"-Bentham Open from 2019 onwards.
- Academic Editor and Editorial Board member of BMC-Musculoskeletal Disorders, since Oct 2020.
- Topic Guest Editor of journal "Frontiers in Cellular and Infection Microbiology" for Research Topic titled "Current and Future Interventions in Management of Orthopaedic Device Related Infections (https://research-topic-management-app.frontiersin.org/manage/17024). –Oct 2020.
- Associate Editorial Board Member of "Canadian Journal of Infectious Diseases and Medical Microbiology" from Aug 2021 onwards.
- Associate Editor and Editorial Board member of Frontiers in Microbiology [Section-Infectious Agents and Disease] , since July 2022 onwards.

**LIFE MEMBERSHIP OF :**

- Life member of following Societies:
- American Society of Microbiology (ASM)
- Microbiologists Society, India [LM301];
- Society for Bacteriophage Research and Therapy (SBRT)- SBRTLM00036;
- Institute of Scholars Society, India [InSc2019875]