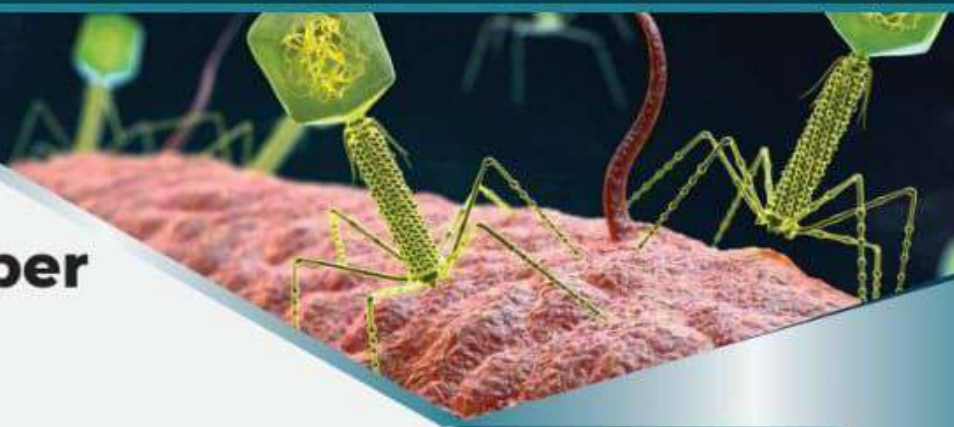


5TH INTERNATIONAL CONFERENCE ON BACTERIOPHAGE RESEARCH & ANTIMICROBIAL RESISTANCE

8th 9th November 2024



ORGANIZED BY: BHAVAN'S RESEARCH CENTER & BHAVAN'S COLLEGE
IN ASSOCIATION WITH
SOCIETY FOR BACTERIOPHAGE RESEARCH AND THERAPY

REGISTRATION DETAILS

Category	Early Bird (upto 7 th Sept 2024)	Late/Spot Registration (After 7 th Sept 2024)
Student	₹ 2500	₹ 4000
Faculty/ Scientist	₹ 5000	₹ 8000
Industry	₹ 8000	₹ 11000
International Participants	US \$200	US \$400
Pre-conference Workshop	₹ 4000	—

GST @ 18% applicable to all registration Fees

• Potential Areas & Topics to be covered:

-  One Health Approach
-  Human Health
-  Animal Health
-  Environment
-  Food & Dairy
-  Phage Engineering

Pre-conference workshop:- 7th Nov 2024

Contact

enquiry@icbrar24.com

Website

www.icbrar24.com

Organized by



BHAVAN'S
RESEARCH CENTER
MICROBIOLOGY



Venue: SPJIMR Auditorium, Bhavan's College Campus, Munshi Nagar |
Dadabhai Road, Andheri West | Mumbai - 400 058, India

Report: 5th International Conference on Bacteriophage Research and Antimicrobial Resistance (ICBRAR 2024)

The 5th International Conference on Bacteriophage Research and Antimicrobial Resistance (ICBRAR 2024) was held from November 7th to 9th, 2024, at the Bhavan's College Campus, Mumbai, India. The objective of ICBRAR 2024 was to serve as a global platform for scientists, researchers, academicians, and industry professionals to explore the latest advancements in bacteriophage research, and highlight the application of bacteriophages as sustainable and targeted solutions to mitigate AMR in human, animal, and environmental health.

The organizers of ICBRAR 2024 represented a collaborative effort between distinguished institutions and experts committed to advancing research in bacteriophage science. Key contributors included the **Bhartiya Vidya Bhavan's, Bhavan's Research Center, Bhavan's College, Mumbai, and Society for Bacteriophage Research and Therapy (SBRT)**, showcasing their combined strengths in academia, research, and practical applications.

SBRT leads in fostering innovation in bacteriophage therapy and antimicrobial resistance, emphasizing global challenges such as AMR through research initiatives and knowledge dissemination. Meanwhile, Bhavan's College, affiliated with the University of Mumbai, boasts a legacy of academic excellence since 1946, contributing significantly to interdisciplinary scientific research. Bhavan's Research Centre amplifies this impact by spearheading critical projects in wastewater epidemiology, environmental applications, and phage-based biocontrol strategies.

The team brought together experts and visionaries who prioritized a multidisciplinary approach. Their efforts ensured the conference remained a hub for networking, knowledge sharing, and collaboration. ICBRAR 2024 included interactive sessions, technical workshops, and discussions tailored to explore cutting-edge innovations in phage applications across human and animal health, agriculture, aquaculture, food safety, and environmental sustainability.

This convergence of expertise and commitment to global challenges highlighted the organizers' dedication to shaping the future of bacteriophage research for a healthier and more sustainable world.

The Event included the following components:

1. Pre-conference workshop on 7th November 2024
2. Conference Day 1, 8th November 2024; covered AMR status and update on phage therapy, as well as oral & poster presentations.
3. Conference Day 2, 9th November 2024; covered bacteriophage applications in variety of areas, viz animal & one-health, environment, food, aquaculture and phage engineering.

PRE-CONFERENCE WORKSHOP (7th November 2024)

The event commenced with a warm welcome for the dignitaries, followed by the inaugural address delivered by **Dr. Zarine Bhatena**, Principal, Bhavan's College, setting the tone for the day.

Topics Covered and Key Speakers:

- **Introduction to Bacteriophage:** Delivered by **Dr. Vinod Kumar C.S**, offering foundational knowledge about bacteriophages.
- **Bacteriophage Isolation:**
Led by **Dr. Ramesh N**, along with faculty, Department of Microbiology, Bhavan's College, with hands-on demonstrations providing practical experience in isolating bacteriophages from environmental samples.
- **Engineering Bacteriophages for Peptide and Protein Display & Tools for Phage Genomics:**
Dr. Amita Gupta shared the molecular techniques for phage engineering to display peptides and proteins and the genomic tools for understanding bacteriophage diversity.
- **Experimental Design for Environmental and Animal Studies:**
Dr. Sandhya Shrivastava and **Dr. Vinod Kumar C.S** discussed the design and execution of bacteriophage studies in environmental and animal model settings, respectively.
- **Phage Protein Identification and Purification:**
Dr. Malabika Biswas introduced methods for isolating and utilizing phage proteins in research and applications.
- **Key Understandings for Applications of Bacteriophages:**
Dr. Vinod Kumar C.S explored clinical trials, global perspectives, regulatory challenges, and therapeutic uses of bacteriophages.

The day concluded with an open forum for discussion between the faculty and the participants. Few international faculty, viz Dr. Tobi Nagel, Dr. Heather Hendrickson & Dr. Khatuna Makalatia also contributed to the discussion

Key Takeaways

- Participants gained hands-on experience in bacteriophage isolation and experimental design.
- Insights into phage engineering, protein purification, and genomic tools provided participants with advanced knowledge of bacteriophage research.
- The workshop emphasized the application of bacteriophages in environmental and therapeutic contexts, addressing global challenges and regulatory frameworks.

Overall, the participants were quite satisfied with the workshop and enjoyed the close interaction and discussion with the faculty, which could resolve a number of experimental queries. However, they also offered their feedback to extend such workshops duration over a period of 3-5 days for more microbiology/molecular biology experimentations and bioinformatics hands-on experience.



Lighting of the lamp



Inaugural address by Prof. (Dr.) Zarine P. Bhatena



Interactive sessions



Hands on session in Lab



Panel discussion



**Token of appreciation for
The Host, Dr. Sandhya Shrivastava**

CONFERENCE (8th & 9th November 2024)

The conference was held at the SPJIMR auditorium in the Bhavan's College campus.

The two-day conference featured Keynote address, Plenary session, and technical sessions, a short-film on global phage therapy application, show-casing practical applications of phages in therapeutic (human & animals), environmental, and agricultural domains.

With respect to the registrations, around 135 delegates registered for the conference, including 85 students, 30 faculty, 20 industry participants. Delegates, from all over India, to name a few, IIT Bombay, IIT Roorkee, NCL Pune, TIFR, SRM Institute of Science and Technology, Amity University, Amrita School of Biotechnology, Anna University, Bennett University, Central University of Tamil Nadu, Cochin University of Science and Technology, NIMS University, Gujarat Technological University, VIT, CIFE, CIFT attended the conference. Hospitals, such as H.N. Hospital Mumbai, AIIMS & Safdarjung Hospital, New Delhi, Sri Venkateshwaraa Medical College Hospital & JSS Medical College & Hospital from southern India were part of the conference. Industry delegates came from Hindustan Unilever, ITC, Ion Exchange India, Proteon Pharmaceuticals, Excel Industries, Chroma Chemie, Claviate & Zytex Biotech Pvt. Ltd.

Dr. Zarine Bhatena, Principal, Bhavan's College welcomed the faculty and the delegates providing an overview on the background of the institution and its value system. She also highlighted the Department of Microbiology's illustrious contributions to research. Dr. Sandhya Shrivastava, Convenor, ICBRAR 2024 outlined the key objectives of the conference, such as showcasing wide areas of bacteriophages as biocontrol agent for AMR bacteria, providing opportunity to young researchers to present their work to esteemed scientists, and offer a platform for active interaction between academia, researchers and related industry.

The conference was inaugurated by Dr. Kamini Walia, Senior Scientist at ICMR, who leads ICMR's antimicrobial resistance initiative. In her keynote address, she emphasized the escalating global burden of AMR and the pivotal role of bacteriophages as alternatives to antibiotics. Her address provided an in-depth overview of AMR trends, their socioeconomic impact, and the need for integrated approaches to combat the crisis.

The technical sessions featured speakers from diverse and esteemed institutions across the globe.

Session on phage therapy was led by Dr. Tobi Nagel, Founder and President is affiliated with Phages for Global Health in the USA, followed by Dr. Gopal Nath, Professor at Banaras Hindu University, Dr. Alok Chakrabarty, Scientist, ICMR-NIRBI, Kolkata, Dr. Khatuna Makalatia Dean, Faculty of Medicine, Associate Professor of Microbiology from University of Geomedi, Georgia, and Dr. Ramesh N Assistant Professor of VIT University, Vellore.

Dr. Frenk Smrekar, CEO of JAFRAL Ltd at Slovenia, and Dr. Ramesh Kumar, Managing Director Salem Microbes Pvt. Ltd, Chennai, and Dr. Aradhana Vipra, Head of Microbiology Department from Gangagen Biotechnologies, Bangalore, shared their experiences in using bacteriophage as successful commercial ventures.

Dr. Taruna Anand, ICAR-National Fellow In Charge Bacteriophage Laboratory, ICAR-NRC, Haryana, covered the veterinary application of bacteriophages.

Dr. Sudhakar Bhandare Associate Professor, University of Nottingham, UK, Dr. Jeroen Wagemans, Research Manager of Department of Biosystem from KU Leuven, Belgium, and Dr. Heather Hendrickson, Associate Professor of Microbiology University of Canterbury, New Zealand, together

covered the food and agricultural applications highlighting ways to control pathogens while reducing the use of antibiotics and chemical biocides

Dr. Zarine Bhathena, Professor, Bhavan's College, Mumbai, and Dr. Hiren Joshi, Scientist, BARC, Kalpakkam, Tamil Nadu, elaborated on using the bacteriophage as biocontrol agent for reducing pathogens in effluent waters, and managing biofilms and biofouling at industrial level, respectively.

The technical sessions ended with futuristic approach on bacteriophage application using molecular tools by engineering the bacteriophages, by Dr. Vinod Kumar, Professor, SS Institute of Medical Sciences & Research Centre, Davangare, Karnataka, and Dr. Vikas Jain, Professor, IISER Bhopal.

The second half of Day 1 featured 19 oral and 39 poster presentations by researchers, including faculty, PhD scholars, postgraduate students, junior research fellows, and medical professionals from prestigious institutions such as Vellore Institute of Technology, BARC, ICAR-CIFE, Amrita Vishwa Vidyapeetham, MAHE, Manipal, and Banaras Hindu University. Prominent researchers and global phage specialists assessed oral and poster presentations based on the calibre of the work produced, presenting abilities, expertise, and potential future applicability of the work to actual issues.

Day 2 ended with an interactive panel discussion, led by Dr. Vinod Kumar, who posed questions to the esteemed panelist on different subjects like regulations, ethical concerns of bacteriophage application, which completed the conference theme holistically.

Thus, the objective of the conference to cover various areas of bacteriophage application was covered over the 2-days technical sessions.

All sessions were conducted as per the schedule, which gave adequate time for active interaction of the esteemed faculty with the delegates, being an important highlight of this conference, as a number of queries of the participants were resolved through these discussions.

The Valedictory Ceremony of ICBRAR 2024 concluded the conference on a celebratory note at the SPJIMR Auditorium, Bhavan's College Campus, Mumbai. The session featured a keynote address by the Chief Guest, Dr. Ravishankar C.N., Director and Vice Chancellor of ICAR-CIFE, who highlighted the conference's achievements and outlined future directions. It also included the announcement of competition winners followed by concluding remarks and a vote of thanks to acknowledge the contributions of participants, speakers, sponsors and organizers. This ceremony celebrated the success of the conference while inspiring continued innovation and collaboration in bacteriophage research and antimicrobial resistance.

Conference Highlights and Outcomes

- **Global Collaborations:** The event emphasized the need for international partnerships to tackle AMR through bacteriophage research.
- **Regulatory Insights:** Discussions on frameworks for phage therapy implementation provided clarity on pathways for commercialization.
- **One Health Approach:** Sessions underscored the interconnected health of humans, animals, and the environment, promoting integrated solutions.
- **Networking Opportunities:** Delegates engaged with peers and experts, fostering collaborations for future research.



Registration



Our speakers



Lighting of Lamp



Proceeding unveiling



**ICBRAR 2024 Convener's address:
Dr. Sandhya Shrivastava, (Director,
Bhavan's Research Center)**



**Dr. Zarine Bhatena (Principal, Bhavan's
College, Organizing Secretary ICBRAR 2024)
welcoming the Chief Guest Dr. Kamini Walia
(Senior Scientist, ICMR)**



Technical sessions



Delegates



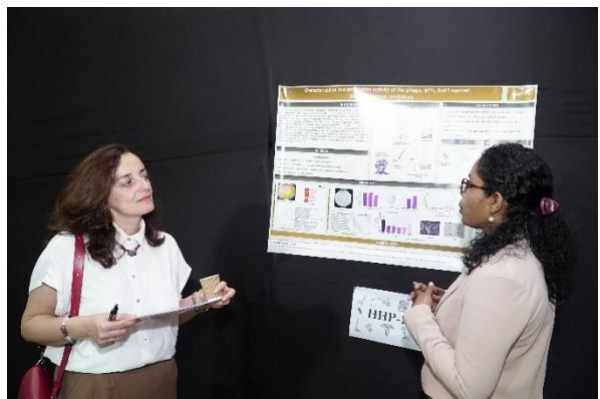
Oral presentations



Oral presentations



Networking



Poster presentation



Poster presentation



Technical sessions



Technical sessions



Felicitation of speakers



Panel Discussion

Dr. Vinod Kumar CS Welcoming our chief guest Dr. Ravi Shankar C.N, Director & Vice Chancellor, ICAR, CIFE for Valedictory function



ICBRAR 2024 Team

The conference was financially supported by:

- Fundings from DBT & SERB
- Sponsors: Jafral (Gold), Eppendorf (Bronze), Thermofisher, Salem Microbes, GangaGen Biotechnology Pvt. Ltd, Hi-media, AlfaUV, Ion Exchange

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