

CURRICULUM VITAE

Dr. Mahendra Kumar

Assistant Professor

Department of Physics

D.B.S. (P.G.) College, Kanpur

India

Email: mahendrakumar.physics@gmail.com

Contact: +91-9936414448

Objective

To work with new ideas on challenges to create new technology or advancement of current technology.

Research Interest

Ultrasonic Characterization of fluids and Emerging materials.

Professional Details

1. Current employment:

Assistant Professor, Department of Physics, D.B.S.(P.G.) College, Kanpur since July 2009.

2. Past teaching experience:

Assistant Professor at Saraswati Mahila Mahavidyalaya, Vijay Nagar Kanpur for Academic Year 2008-2009.

Academic background:

Ph. D. (2022) on the topic "Study of Molecular Properties of Liquids and Their Binary Mixtures Using Ultrasonic Technique" under Supervision of Prof. Dharmendra Kumar Pandey, Department of Physics, P.P.N. Degree College, Kanpur (Affiliated to C.S.J.M. University, Kanpur, U.P., India).

M. Phil. (2008) in Physics (Dissertation Topic - Liquid Crystals: General Features, Properties and Future Aspects) under Supervision of Prof. Ram Manohar Yadav, Department of Physics, V.S.S.D Degree College, Kanpur from C.S.J.M. University, Kanpur, India with First division.

M. Sc. (2005) in Physics from Bramhanand (P.G.) College, Kanpur (Affiliated to C.S.J.M. University, Kanpur) India with Second division.

B. Sc. (2003) in Science from V.S.S.D. (P.G.) College, Kanpur (Affiliated to C.S.J.M. University, Kanpur) India with Second division.

Intermediate (1999) in Science from D.A.V. Inter college, ITI Mankapur, Gonda (Affiliated to U.P. Board) India with First division.

High school (1997) in Science from D.A.V. Inter college, ITI Mankapur, Gonda (Affiliated to U.P. Board) India with First division.

Orientation and Refresher

1. *Guru Dakshta (Orientation/faculty induction programme) from UGC HRDC, University of Lucknow during 01 February to 28 February 2022 with A grade.*
2. *Refresher Course on topic "Research Methodology" from UGC HRDC, University of Lucknow during 16 August to 30 August 2022 with A grade.*

Memberships:

1. *Indian Association of Physics Teacher, Life member (9790, L6120) from 2012.*
2. *Indian Science Congress Association Life member (L35514) from 2015.*
3. *Vigyan Bharti Life Member (L-UP/KNP/188) from 2017.*

Publications:

Research Papers in Refereed National/International Journals: (07)

1. Title: "Pressure and size dependent investigation of ultrasonic and thermal properties of ScRu Intermetallic" Mohd Aftab Khan, **Mahendra Kumar**, Chandreshvar Prasad Yadav and Dharmendra Kumar Pandey, Zeitschrift für Naturforschung A (**Walter De Gruyter**), 76(7), 615-623, (2021),
<https://doi.org/10.1515/zna-2021-0010>.
2. Title: "Ultrasonic characterization of binary mixture of 2,3-dichloroaniline and polyethylene glycols" **Mahendra Kumar**, Mohd Aftab Khan, Chandreshvar Prasad Yadav, Dharmendra Kumar Pandey, Dhananjay Singh, J. Chem. Thermodynamics (**Elsevier**) 161, 106557, (2021),
<https://doi.org/10.1016/j.jct.2021.106557>
3. Title: "Physico-Chemical Properties of Binary Mixture of 2,3-Dichloroaniline and Carbon Tetrachloride at 27°C", **Mahendra Kumar**, Chandreshvar Prasad Yadav, Dharmendra Kumar Pandey, Dhananjay Singh, Asian Journal of Chemistry (**AJC-20511**), Vol. 33, No. 10, 2386-2392, (2021),
<https://doi.org/10.14233/ajchem.2021.23341>
4. Title: "Ultrasonic Characterisation of Binary Mixture of 2,3-Dichloroaniline with Methanol and Ethanol" **Mahendra Kumar**, Mohd Aftab Khan, Chandreshvar Prasad Yadav, Dharmendra Kumar Pandey & Dhananjay Singh, Indian Chemical Engineer, (**Taylor & Francis**) 64(4), 368-378, (2022),
<https://doi.org/10.1080/00194506.2021.1988872>

5. Title: "Mechanical, Thermal and Ultrasonic Properties of AgRE Intermetallics at Different Temperatures" Mohd Aftab Khan, **Mahendra Kumar**, Chandreshvar Prasad Yadav & Dharmendra Kumar Pandey, Phase Transitions (**Taylor & Francis**), **95(20),131-142 (2022)**,
<https://doi.org/10.1080/01411594.2021.2009830>
6. Title: "An ultrasonic exploration of physico-chemical properties for mixtures of dichloroacetyl chloride with polar, non-polar and polymers at 300 K" **Mahendra Kumar**, Chandreshvar Prasad Yadav, Dharmendra Kumar Pandey, Dhananjay Singh and Renuka Arora, J. Pure Appl. Ultrason. **Vol.44, 15-25 (2022)**.
7. Title: "Temperature dependent ultrasonic characterization of AuRE intermetallics" Mohd Aftab Khan, Chandreshvar Prasad Yadav, **Mahendra Kumar**, Dharmendra Kumar Pandey, Devendra Nath Mishra and Renuka Arora, J. Pure Appl. Ultrason. **Vol.44, 45-51 (2022)**

Book Chapters: (2)

1. A book chapter titled "An Ultrasonic Investigation for binary mixture of 2,3-Dichloroaniline with Polar, Non- Polar and Polymer Liquids" published in International conference proceeding on "Advancement in Functional Materials" Publisher: Shree Publishers & Distributors in February 2024.
2. A book chapter titled "Ultrasonic Investigation of Nano-Sized Wurtzite InX (X: P, As, Sb) Material at 300K" published in International conference proceeding on "Advancement in Functional Materials" Publisher: Shree Publishers & Distributors in February 2024.

Participation as Resource Person (1)

1. Participating as resource person on focal theme "Post COVID-19 Challenges and Opportunities in India (NSPCCOI-2022)" Sponsored by Directorate of Higher Education, Govt. of Uttar Pradesh and organized by Dr. Bhim Rao Ambedkar govt. girls P.G. College, Fatehpur during 29-30 March 2022.

As Judge/Guest/Jury Member: (6)

1. Contribution as Judge/Evaluator in Regional Level 25th National Children's Science Congress on the Focal theme Science, Technology & Innovation for Clean, Green and Healthy Nation held at Kendriya Vidyalaya I.I.T, Kanpur on 24 October 2018.
2. Contribution as Evaluator in 26th National Children's Science Congress, Regional Level, NVS State held at Jawahar Navodaya Vidyalaya, Sarsaul, Kanpur on 26 November 2018.

3. *As Guest in National Seminar on topic "Possibilities and Challenges of Indian Knowledge System in the Changing Academic Scenario" sponsored by C.S.J.M. University, Kanpur and organized by Brahmavart P.G. College, Mandhana, Kanpur on 08 February 2025.*
4. *As Jury Member in National Seminar on topic "Developments and Scope in Renewable Energy" sponsored by C.S.J.M. University, Kanpur and Organized by Department of Physics, Brahmanand P.G. College The Mall, Kanpur on 10-11 February 2025.*
5. *As Guest in National Seminar on topic "Developed India 2047 Rise as a Superpower" sponsored by C.S.J.M. University, Kanpur and organized by Brahmavart P.G. College, Mandhana, Kanpur on 21 February 2025.*
6. *As Jury Member in National Seminar on topic "Recent Advances in Material Science and Nano-Technology (RAMSAN- 2025)" sponsored by C.S.J.M. University, Kanpur and Organized by Department of Physics, K.K.P.G. College, Etawah on 27-28 February 2025.*

Presented Paper in Seminar, Conference, and Symposium: (12)

1. *Presented a paper titled "Ultrasonic Investigation of Dichloroacetyl Chloride in Binary Mixture" in National Seminar on topic "Science and Technology for National Development" sponsored by I.S.C.A. Kanpur chapter organized by I.S.C.A. Kanpur Chapter and Department of Zoology D.B.S. College Kanpur during 29th-30th September 2016.*
2. *Presented a paper titled "Nano-Science and Nano Technology" in National Seminar on topic "Art, Science & Teachers Education" organized by S.J. Mahavidyalaya Ramaipur, Kanpur Nagar on 05 October 2016.*
3. *Presented a paper titled "Ultrasonic Investigation of Molecular Properties of Dichloroacetyl Chloride" in National Symposium on topic "Excellence in Research" held at Department of Physics, Shree M.M. Patel Institute of Sciences and Research, Kadi Sarva Vishwavidyalaya, Gandhinagar, Gujarat during 20-22 October 2016.*
4. *Presented a paper titled "Ultrasonic Investigation on Nanofluids Coolant for Automobiles" in National Seminar on topic "Nano Science and Nano Biotechnology" sponsored by Department of Higher Education Government of Uttar Pradesh, Lucknow and organized by Department of Physics, D.A-V College, Kanpur during 25-26, February 2017.*
5. *Presented a paper titled "Molecular Properties of Dichloroacetyl Chloride in Binary Mixture" in National Symposium on topic "Recent Trends in Physics at*

Different Scales” held at Department of Physics, Gurukul Kangri Vishwavidyalaya Haridwar, Uttarakhand during 29-31 October 2017.

6. *Presented a paper titled “Ultrasonic Investigation of Dichloroaniline in Binary Mixture” in National Seminar on topic “Need of Research and Innovation on Education” organized by Shri Shakti Degree College, Sankhahari, Ghatampur, Kanpur Nagar during 17-18 February 2018.*
7. *Presented a paper titled “Importance of Visualization for Effective Physics Teaching” in National Seminar on topic “Need for Research and Innovation in Teaching Methodology” sponsored by National Assessment and Accreditation Council (NAAC) and organized by Shri Shakti Degree College, Sankhahari, Ghatampur, Kanpur Nagar during 27-28 January 2019.*
8. *Presented a paper titled “Ultrasonic Study of Binary Mixture of Dichloroacetyl chloride with Carbon Tetrachloride” in National Seminar on topic “Developments and Opportunities in Material Science” held at Department of Physics, D.B.S. (P.G.) College, Kanpur on 02 February 2019.*
9. *Poster presentation titled on “ICT an Effective tool for Teaching Quantum Mechanics” in XXXIV Annual IAPT Convention 2019 on topic “Recent Advances & Innovation in Physics Teaching & Research (RAIPTR- 2019)’ sponsored by IAPT & IIT Allahabad and organized by Department of Applied Sciences, Indian Institute of Information Technology Allahabad, India during 13-15 October 2019.*
10. *Presented a paper titled “Ecological Challenges due to COVID 19 Pandemic” in National Seminar on topic “Post COVID-19 Challenges and Opportunities in India (NSPCCOI-2022)” Sponsored by Directorate of Higher Education, Govt. of Uttar Pradesh and organized by Dr. Bhim Rao Ambedkar govt. girls P.G. College, Fatehpur during 29-30 March 2022.*
11. *Poster presentation titled “An ultrasonic Investigation for binary mixture of 2,3 Dichloroaniline with polar, Non- polar and polymer liquids” in International conference on topic “Advancement in Functional Materials” organized by Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Science for Study and Research, V.B.S Purvanchal University, Jaunpur, U.P, India collaboration with Asian Polymer Association, New Delhi (ICFAM 2024) during 08-10 February 2024.*
12. *Presented a paper titled “A Comparative Investigation of binary mixture of 2,3-Dichloroaniline and Methanol/Ethanol, at $T = 298\text{K} - 318\text{K}$ and $P = 101.32\text{ kPa}$ through ultrasonic technique” in National Seminar on topic “Recent Advances in Material Science and Nano- Technology (RAMSAN- 2025)” held at Department of Physics, K.K. (P.G.) College, Etawah on 27-28 February 2025.*

Attended Seminar and workshops (25)

- 1. Attended workshop on topic "Surface and Interface Modifications by Energetic Ions (WSIMEI-2009)" sponsored and organized by Department of Physics, Allahabad University & Inter-University Accelerator Centre, New Delhi on 18 March 2009.***
- 2. Attended IAPT XXIV Annual Convention sponsored and organized by IAPT & CSJM University, Kanpur during 10-12 October 2009.***
- 3. Attended National Seminar on topic "Recent Advances in Physics" sponsored and organized by Department of Physics, D.A-V, College Kanpur on 12th December 2009.***
- 4. Attended National Seminar on topic "Contribution of Material Science to the World Today" sponsored by UGC, New Delhi and organized by Department of Physics, D.B.S, College Kanpur during 18 -19 January 2011.***
- 5. Attended National Conference on topic "Advancement of Nano-Materials and its Applications" sponsored and organized by Department of Physics, D.A-V, College Kanpur during 15-16 February 2011.***
- 6. Attended 3 Day workshop on topic "Microprocessor" sponsored and organized by Department of Physics, D.B.S College, Kanpur and IAPT UP Region (RC-4) during 29th Sep.- 01st Oct. 2011.***
- 7. Attended One day International Workshop on topic "Nuclear Safety" sponsored and organized by PSIT, Kanpur on 09th February 2012.***
- 8. Attended workshop on topic "Hands-on Experiments in LASER Physics" sponsored by IAPT and EGO SUMLUX MUNDI and organized by Department of Physics, Christ Church, College Kanpur on 19 December 2013.***
- 9. Attended National Seminar on topic "Science and Technology for Human Development" sponsored and organized by I.S.C.A. Kanpur chapter & Department of Zoology, DGPG College, & D.A-V college during 08th-10th December 2014.***
- 10. Attended National Seminar on topic "The Role of Light & Light Based Technologies for Rural Development and Providing Better Life to Rural Communities" sponsored and organized by Shri Shakti Degree College Sankhahari Ghatampur, Kanpur Nagar during 13-14 June 2015.***
- 11. Attended Northern Regional Workshop on topic "Wetlands biodiversity: Restoration and Survival Participation" sponsored by Wetland International and Forest and Wild Life Department, Uttar Pradesh and organized by Department of Botany, D.B.S. College, Kanpur on 17 November 2016.***
- 12. Attended Workshop on topic "Revitalization of Science Education in Uttar Pradesh" sponsored and organized by IAPT (RC-4) U.P. at Montfort Inter College, Lucknow on 30th July 2017.***

13. Attended 2 Day workshop on topic "Recent Challenges in Biophysics and Bioinformatics" sponsored and organized by Ewing Christian College, Allahabad during 19-20 January 2018.
14. Attended National Seminar on topic "Future India: Science & Technology" sponsored by I.S.C.A. Kanpur Chapter and organized by Department of Zoology, DPGG College, D.A-V College & CSJM University Kanpur during 23rd -25th November 2018.
15. Attended National Seminar on topic "Application of Element of Periodic Table in Natural Science" sponsored by Christ Church College Kanpur, UNESCO & International Year of Periodic Table of Chemical Elements (IYPT) and organized by Department of Chemistry and Department of Physics, Christ Church College Kanpur during 14-15 November 2019.
16. Attended National Conference on topic "Science & Technology: Rural Development" sponsored and organized by I.S.C.A, C.S.J.M. University, D.A-V College, D.G. College Kanpur during 3-4 December, 2019.
17. Attended International Conference on topic "Role of Multidisciplinary Studies in Environment Protection" sponsored by Narain College, Shikohabad Uttar Pradesh & BRF (In Association with GLOBAL Research Foundation) and organized by Narain College, Shikohabad Uttar Pradesh on 23rd February 2020.
18. Attended short term course on topic "MATLAB and Mathematica for Scientific Research" sponsored by DST-FIST and organized by Arul Anandar College (Autonomous) Karumathur, Madurai during 27-29 July 2020.
19. Attended 3 Day workshop sponsored and organized by Intellectual property Right cell V.B.S.P.U, Jaunpur during 08-10 October 2021.
20. Attended workshop sponsored by Govt. of India, Department of Commerce and Industry (NIPAM) and organized by Dayanand Brijendra Swarup College, Kanpur on 27 April 2022.
21. Participated in Online Quiz organized by the Department of Zoology, D.A.V College, Kanpur and associated with ISCA and Vision Kanpur @ 2047 on National Science Day Celebration-2023.
22. Attended National Conference on topic "Climate Change and Water security : Environment and Health Concerns" sponsored by C.S.J.M. University, Kanpur and organized by Brahmanand P.G. College, The Mall, Kanpur on 03-04 November 2023.
23. Attended National Seminar on topic "Possibilities and Challenges of Indian Knowledge System in the Changing Academic Scenario" sponsored by C.S.J.M. University, Kanpur and organized by Brahmavart P.G.College, Mandhana, Kanpur on 08 February 2025.

24. Attended National Conference on topic "Developments and Scope in Renewable Energy" sponsored by C.S.J.M. University, Kanpur and organized by Brahmanand P.G. College, The Mall, Kanpur on 10-11 February 2025.
25. Attended National Seminar on topic "Developed India 2047 Rise as a Superpower" sponsored by C.S.J.M. University, Kanpur and organized by Brahmavart P.G. College, Mandhana, Kanpur on 21 February 2025.

Webinar Attended (9)

1. Attended National webinar on focal theme "Challenges in Development of Innovative Product in India" organized by ATAL Incubation Hub, H.B.T.U. Kanpur on 04 July 2020.
2. Attended National webinar on focal theme "Magnetism and Matter" organized by IAPT and Delhi state science Teachers on 1 August 2020.
3. Attended National webinar on focal theme "New Education Policy 2020: Steps towards Holistic and Multidisciplinary Education" organized by IQAC, Bramhanand College, Kanpur on 04 September 2020.
4. Attended National webinar on focal theme "Practical Physics: State of experimental Physics in the shadow of lockdown" organized by IEEE, PSIT and Department of Physics, Christ Church College Kanpur (IQAC) on 12 November 2020.
5. Attended National webinar on focal theme "Modern application of nanotechnology and its future challenges" organized by Department of Physics, D.S.N. (P.G.) College, Unnao on 07 Feb 2021.
6. Attended National webinar on focal theme "Observance of National Science Day" organized by I.A.P.T. & Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore during 28 February to 1 March 2021.
7. Attended Online lecture series on focal theme "Advancements in Physics : Plasmonic Properties of Metal Nanostructures and their Applications" organized by Department of Physics, Christ Church College Kanpur (IQAC) on 05 March 2021.
8. Attended National webinar on focal theme "Synthesis, Characterization and Applications of Nano-Materials" organized by Departments of Physics, School of Basic and Applied Sciences H.B.T.U. Kanpur on 28 October 2021.
9. Attended Intellectual Property Awareness program organized by NIPAM and Intellectual Property office India on 27 April 2022.

Participation in College Committees

1. Member of Proctorial Board from 2013.
2. Member of Red Cross Committee from 2017.
3. Member of NSS Committee from 2019.

Participation in extra-curricular/social activities/communities services

- 1. As Flying squad member in CSJM University, Kanpur in 2019.*
- 2. As Observer in examination of CSJM University, Kanpur in 2021.*
- 3. As Observer in B.Ed. Entrance examination conducted by University of Lucknow in 2021.*
- 4. As a Member of Inspection panel of Examination of CSJM University, Kanpur in 2022.*
- 5. As Observer in B.Ed. Entrance examination conducted by Mahatma Jyotiba Phule Rohilkhand University, Bareilly in 2022.*
- 6. External Examiner in various Universities of Uttar Pradesh.*
- 7. Executive member in Kanpur University Teachers Association (KUTA) from 2022.*
- 8. As a Member of Inspection panel of Examination of CSJM University, Kanpur in 2023.*
- 9. As Observer in B.Ed. Entrance examination conducted by Bundelkhand University, Jhanshi in 2023.*

Other information

- 1. **Prabhakar (B.Ed.)** in Classical Vocal Music from Prayag Sangeet Samiti, Prayagraj, India.*
- 2. Participated in many stages with specialization in Ghazal singing.*
- 3. Member, organizing committee in National Seminar 2019 conducted by Department of Physics, D.B.S. College, Kanpur.*
- 4. Member, Academic Tour Committee in 2018-19.*
- 5. Assistant Coordinator in COVID -19 Vaccination camp.*
- 6. Member of “**Muskuraye Kanpur foundation**” as Art, Culture & Environment Coordinator.*

Dr. Mahendra Kumar