

Curriculum Vitae

Name

Dr. Hari Mohan Kushwaha
Postdoc-IIT Bombay,
PhD-IIT Indore,
M Tech-IIT Roorkee,
BE-Govt Engg. College Kota, University of Rajasthan



Email and Contact Number(s)

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Google Scholar Link

<https://scholar.google.co.in/citations?user=ipmE6bQAAAAJ&hl=en>

Research Gate Link

https://www.researchgate.net/profile/Hari_Kushwaha

ORCID ID

<https://orcid.org/0000-0003-0339-0553>

Web of Science Researcher ID

AAA-6548-2022

Scopus ID

55964142700

Research Interests

Micro-scale fluid flow and heat transfer, rarefied gas flows, thermal management of electronic devices, design and optimization of thermal systems.

Academic Qualification

| Degree | Branch/Specialization | Institute/University/Board | CGPA | Year |
|----------|---------------------------------------|--|-------|------|
| Ph.D. | Thermal Engineering | Indian Institute of Technology Indore, Indore, Madhya Pradesh, India | 8.89 | 2016 |
| M. Tech. | Thermal Engineering | Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India | 7.14 | 2010 |
| B.E. | Production and Industrial Engineering | Govt. Engg College Kota, University of Rajasthan, Jaipur, India | 63.13 | 2003 |
| XII | - | Maa Bharti Vidhya Bhawan Talwandi, Kota, Rajasthan Board | 62.46 | 1997 |
| X | - | Govt. Sr. Sec. School, Sangod, Rajasthan Board | 74.18 | 1994 |

Title of Ph.D. Thesis

Heat Transfer Characteristics of Gaseous Flow through Microchannels

Supervisor

Dr. Santosh Kumar Sahu,
Professor,

Institute/University

Head of the Department of Mechanical Engineering,
Indian Institute of Technology Indore, MP, India

Year of Award/defense

November 12, 2016 / January 18, 2016

Title of Master of Technology Thesis

Energy Management in a Sugar Industry: Uttam Sugar Mills Ltd. Roorkee, Uttarakhand

Supervisor

Dr. Akhilesh Gupta,
Professor,

Co-supervisor

Dr. Ravi Kumar
Professor,

Institute/University

Mechanical and Industrial Engineering Department,
Indian Institute of Technology Roorkee, Uttarakhand, India

Year of Award

November 13, 2010

Work Experience

| Name of the Institute | Positions held | From | To |
|--|-------------------------------|------------------|-------------------|
| Amrita School of Engineering, Bengaluru, Karnataka, India | Assistant Professor (Sr. Gr.) | January 28, 2019 | January 31, 2021 |
| Indian Institute of Technology Bombay, Bombay, Maharashtra, India | Research Associate | January 4, 2016 | November 14, 2018 |
| Quantum School of Technology Uttarakhand, India | Assistant Professor | July 19, 2010 | July 30, 2011 |
| Tagore Public School (Main) Shastri Nagar Jaipur, Rajasthan, India | Lecturer (PGT) | July 5, 2004 | August 20, 2008 |

Practical/Vocational Training

| Name of the Organization | Duration | From | To |
|--|----------|--------------|---------------|
| Railway Wagon Repair Workshop, Kota, Rajasthan, India | 50 | May 17, 2002 | July 5, 2002 |
| National Thermal Power Corporation Limited Anta, Baran, Rajasthan, India | 45 | May 15, 2001 | June 30, 2001 |

Professional Recognition/Award/Prize/Workshop Attended/Fellowship received

| Name of Award | Awarding Agency | Year |
|--|---|------|
| Workshop on thermal management of power dense electronics: current status and challenges | Indian Institute of Technology Indore Indore, Madhya Pradesh, India | 2020 |
| Webinar on revising CFD: an introduction to ANSYS workbench, MATLAB and OpenFoam | Pandit Deendayal Energy University, Gujarat, India | 2020 |
| International workshop on materials for energy conversion and storage | Indian Institute of Technology Tirupati Andhra Pradesh, India | 2019 |
| Volunteer in 7 th international conference FMFP-2018 | Indian Institute of Technology Powai, Bombay Powai, Maharashtra, India | 2018 |
| Volunteer in the symposium: NatFOE11 | Indian Institute of Technology Powai, Bombay Powai, Maharashtra, India | 2017 |
| International travel grant (From government of India) | Science and Engineering Research Board (SERB), Department of Science and Technology (DST), New Delhi, India | 2015 |
| Coordinator of a short-term course on measurement techniques in thermal engineering: recent advances | Indian Institute of Technology Indore Indore, Madhya Pradesh, India | 2013 |
| Developed fluid mechanics and machinery lab, and thermodynamics and IC engine lab | Indian Institute of Technology Indore Indore, Madhya Pradesh, India | 2012 |

Book(s)

| Title | Author's Name | Publisher | Year |
|--|--|--|------|
| Microscale Flow and Heat Transfer: Mathematical Modelling and Flow Physics | Amit Agrawal, <u>Hari Mohan Kushwaha,</u> Ravi Sudam Jadhav | Springer Nature DOI: 10.1007/978-3-030-10662-1 ISBN: 978-3-030-10662-1 | 2020 |

Book Chapter(s)

| Author's Name | Title | Proceedings | ISBN | Year |
|---|---|---|------------------------------|------|
| Prathuk Balachandra Hegde, <u>Hari Mohan Kushwaha</u> | Effect of shear work on heat transfer characteristics of gaseous flow between two micro-parallel plates | Advances in Mechanical and Materials Technology-EMSME-2020 | 978-981-16-2794-1 | 2022 |
| <u>Hari Mohan Kushwaha,</u> S.K. Sahu | Analysis of heat transfer in the slip flow region between parallel plates | Fluid Mechanics and Fluid Power–FMFP-2017 | 9788132227434, 8132227433 | 2017 |
| <u>Hari Mohan Kushwaha,</u> S.K. Sahu | Analysis of heat transfer in the slip flow region between parallel plates | Lecture Notes in Mechanical Engineering–Contemporary Research: Proceedings of the 5 th International and 41 st National Conference on FMFP-2014 | 978-8132227410 | 2014 |

List of Publications

International Journals (SCI/Scopus Indexed)

| Author(s) | Title | Name of Journal | Year, Vol, Page no. | Latest impact factor of the journal | Latest H-index/H-5 index and/or core impact factor of the journal |
|--|--|---|-------------------------------|-------------------------------------|---|
| <u>Hari Mohan Kushwaha</u> , P. B. Raj, S.K. Sahu | Effect of shear work on the heat transfer characteristics of gaseous flows in microchannels | Chemical Engineering and Technology DOI: 10.1002/ceat.201500267 | 2017 40(1) 103–115 | 1.728 | H-index 81 |
| <u>Hari Mohan Kushwaha</u> , S.K. Sahu | Analysis of slip flow heat transfer between two unsymmetrically heated parallel plates with viscous dissipation | Indian Academy of Sciences, Sadhana DOI: 10.1007/s12046-016-0497-4 | 2016, 41(6), 653–666 | 1.188 | H-index 49 |
| <u>Hari Mohan Kushwaha</u> , S.K. Sahu | Comprehensive analysis of convective heat transfer in parallel plate microchannel with viscous dissipation and constant heat flux boundary conditions, | Journal of Institution of Engineers India: Series C DOI: 10.1007/s40032-016-0266-5 | 2016, 1-14 | 1.42 | H-index 15 |
| <u>Hari Mohan Kushwaha</u> , S. K. Sahu | Effect of viscous dissipation and rarefaction on parallel plates with constant heat flux boundary conditions | Chemical Engineering and Technology DOI: 10.1002/ceat.201400264 | 2015, 38(2), 235-245 | 1.728 | H-index 81 |
| <u>Hari Mohan Kushwaha</u> , S. K. Sahu | Analysis of gaseous flow in a micropipe with second order velocity slip and temperature jump boundary conditions | Heat and Mass Transfer DOI: 10.1007/s00231-014-1368-3 | 2014, 50(12), 1649-1659 | 2.464 | H-index 68 |
| <u>Hari Mohan Kushwaha</u> , S. K. Sahu | Analysis of gaseous flow between parallel plates by second order velocity slip and temperature jump boundary conditions | Heat Transfer–Asian Research DOI: 10.1002/htj.21116 | 2014, 43(8), 734-748 | 2.421 | H-index 30 |

International/National Conference(s)

| Author(s) | Title | Name of Conference | Venue | Year |
|---|---|--|---|------|
| Prathuk Balachandra Hegde, <u>Hari Mohan Kushwaha</u> | Influence of shear work on heat transfer characteristics of gaseous flow in a microtube | 48 th National Conference on Fluid Mechanics and Fluid Power FMFP December 27-29, 2021 | BITS Pilani, Pilani Campus, Pilani, India | 2021 |
| Prathuk Balachandra Hegde, <u>Hari Mohan Kushwaha</u> | Effect of shear work on heat transfer characteristics of gaseous flow between two micro-parallel plates | 1 st International Conference on Energy, Materials Sciences & Mechanical Engineering- 2020 National Institute of Technology Delhi New Delhi, India, October 30-November 1, 2020 | EMSME-2020, NIT Delhi, New Delhi, India | 2020 |
| <u>Hari Mohan Kushwaha</u> , Amit Agrawal | Analysis of gas flow through micro-annulus using second order velocity slip and temperature jump | 45 th National and 7 th International Conference on Fluid Mechanics and Fluid Power FMFP December 10-12, 2018 | FMFP 2018, IIT Bombay, India | 2018 |
| <u>Hari Mohan Kushwaha</u> , Amit Agrawal | Heat transfer of gaseous flow through micro-annulus in slip regime | ThermaComp, July 9-11, 2018 | IISC Bangalore, India | 2018 |

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|---|--|--|---|------|
| <u>Hari Mohan Kushwaha</u> , P. B. Raj, S. K. Sahu | Heat transfer analysis of small-scale gaseous flows in slip flow region | Proceedings of 6 th International and 43 rd National Conference on Fluid Mechanics and Fluid Power | MNNIT, Allahabad, (U.P.), India | 2017 |
| <u>Hari Mohan Kushwaha</u> , S. K. Sahu | Analysis of slip flow heat transfer between asymmetrically heated parallel plates | ICFDT 2015: XIII International Conference on Fluid Dynamics and Thermodynamics, January 19-20, 2015 | Wembley, London, UK | 2016 |
| <u>Hari Mohan Kushwaha</u> , S. K. Sahu | Analysis of heat transfer in the slip flow region between parallel plates | Proceedings of 5 th International and 41 st National Conference on Fluid Mechanics and Fluid Power December 12-14, 2014 | IIT Kanpur, U.P., India | 2014 |
| <u>Hari Mohan Kushwaha</u> , S. K. Sahu | Analysis of second order slip flow heat transfer in a microtube | 11 th International ISHMT-ASME and 21 st National Heat and Mass Transfer International Conference, December 28-31, 2013 | IIT Kharagpur, India | 2013 |
| <u>Hari Mohan Kushwaha</u> , S. K. Sahu, A. K. Verma | Analysis of slip flow heat transfer between parallel plates with constant heat flux boundary conditions | 11 th ISHMT-ASME and 21 st National Heat and Mass Transfer International Conference, December 28-31, 2013 | IIT Kharagpur, India | 2013 |
| <u>Hari Mohan Kushwaha</u> , S. K. Sahu | Analysis of microscale forced convection heat transfer in a microtube | The Recent Advances in Mechanical Engineering, October 5-6, 2013 | Quantum School of Technology, Uttarakhand, India | 2013 |

Positions of Responsibility

| Designation | Institute Name/Role |
|--------------------------------------|--|
| Reviewer of Journals/ Conferences | ASME, Elsevier, Springer Nature, Wiley / IHMTC, FMFP |
| Assistant Professor (Sr. Gr.) | Amrita School of Engineering, Bengaluru campus, India, January 28, 2019-Jan 31, 2021 |
| Subjects Taught | Heat Transfer (15MEC312), Engineering Thermodynamics (15MEC201), Thermal Engineering and Fluid Mechanics (15MEE212), Design and Optimization of Thermal Systems (19TE623), Computational Fluid Dynamics (19TE624), Labs: Heat Transfer and Thermal Analysis Lab (15MEC385), AutoCAD (15MEC100), Workshop Technology (15MEC180). |
| Research Associate | IIT Bombay, Maharashtra, India, Jan 4, 2016-Nov 14, 2019 |
| Teaching Assistant | IIT Indore, Indore, Madhya Pradesh, India, 2011-2014. Engineering Drawing (ME-151), Basic Manufacturing Techniques (ME-154), Fluid Mechanics and Machinery Lab (ME-201); Experimental Engineering (ICE-211), Applied Thermodynamics and IC Engine Lab (ME-352) |
| Teaching Assistant | IIT Roorkee, Roorkee, Uttarakhand, India, July 2008-July 2010 Heat and Mass Transfer (MIN-305), Thermodynamics (MI-001) |
| Assistant Professor | Quantum School of Technology Roorkee, Uttarakhand, India, July 19, 2010-July 30, 2011 |
| Subjects Taught | Heat Transfer (TME-505), Refrigeration and Air Conditioning (TME-605), Engineering Drawing (PED-101) Labs: Heat Transfer (PME-505), Refrigeration and Air Conditioning (PME-605), Tagore Public School (Main), Shastri Nagar, Jaipur, Rajasthan, India, July 5, 2004-August 20, 2008 |
| Lecturer (PGT) | |
| Subjects Taught | Engineering Graphics (046), Machine Drawing (046) and Mathematics (041) |
| Software Skills | |

Programming languages
Modeling/Analysis

Fortran, C, C++, MATLAB, Python, Latex
ANSYS

Personal Information

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|-------------------|--|
| Name | Hari Mohan |
| Father's Name | Sh. Chhotu Lal |
| Mother's Name | Smt. Kamala Bai |
| Date of Birth | 12.10.78 |
| Gender (M/F/T) | Male |
| Marital Status | Single |
| Category | OBC |
| Permanent Address | Nav Ghat Sangod-325601, District-Kota, Rajasthan |

Dr. Santosh K. Sahu

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Personal mail ID: santosh.sahu04@gmail.com
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Dr. Amit Agrawal

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Professor,
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Dr. Ravi Kumar

Professor, Dean (Administration), IIT Roorkee,
Mechanical and Industrial Engineering Department,
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