Curriculum Vitae

Dr. Chidanand K. Mangrulkar
Assistant Professor
Department of Mechanical Engineering
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Field of Specialization: Fluid Dynamics, Heat Exchangers, Convective heat Transfer, Computational Fluid Dynamics (CFD).

Academic Qualifications

Degree	Institution/University	Grade /CGPA	Year
Ph. D† (Thermal Engg.)	Visvesvaraya National Institute of Technology (V.N.I.T.), Nagpur.	9.00	2019
M. Tech* (Heat Power Engg.)	R. T. M. Nagpur University.	9.35	2013
B.E. (Mechanical)	R. T. M. Nagpur University.	65.50%	2008
H.S.S.C.	Maharashtra State Board of Secondary and Higher Secondary Education, Pune.	73.83%	2004
S.S.C.	Maharashtra State Board of Secondary and Higher Secondary Education, Pune.	72.53%	2002

†**Ph. D dissertation title:** Experimental and CFD investigations of flow and heat transfer characteristics of cross flow tube bank.
Supervisor: Dr. Ashwinkumar S. Dhoble

***M. Tech dissertation title:** Experimental investigations of convective heat transfer enhancement using nanofluids in circular tube.

Research, Teaching and Industrial Experience

Institution	Time period (from-to)	Designation
Quality Assurance Department, Jyoti Structures Ltd, Nasik	June 2008 to June 2009	Trainee Engineer
Department of Mechanical Engineering, J. D. Polytechnic, Nagpur	June 2010 to April 2011	Lecturer
Department of Mechanical Engineering, G. H. Raisoni College of Engineering, Nagpur	June 2013 – Dec. 2013	Assistant Professor
Department of Mechanical Engineering, Bajaj Institute of Technology, Wardha.	Jul 2018 – Nov 2020	Assistant Professor
Department of Mechanical Engineering, B. M. S. College of Engineering, Bengaluru.	Dec 2020 – Till date	Assistant Professor

Subjects Taught

- Elements of Mechanical Engineering (EED)
- Computer Aided Engineering Drawing (CAED)
- Fluid Mechanics
- Heat Transfer
- Applied Thermodynamics
- Engineering Thermodynamics
- I. C. Engines

Computer Proficiency:

- Operating Systems: Windows and Linux
- Languages: C Basics
- Open Source Codes: OpenFOAM (Basic level)
- CFD Software: Fluent 16.0, 14.5.
- Meshing Software: ICEM-CFD (Hexa and Tetra)
- Visualization: Tecplot, CFD Post.

Workshop / short-term courses attended:

- Workshop on Thermodynamics conducted by IIT Bombay
- Workshop on Heat Transfer conducted by IIT Bombay
- Workshop on Computational Fluid Dynamics conducted by IITBombay
- Summer School in C.F.D by Dr. Trushar Gohil in 2016 at VNIT, Nagpur.

- Workshop on C.F.D with OpenFOAM by Dr. Trushar Gohil in 2016 at VNIT, Nagpur.

Research Publications

Journal Publications – 10

2020	1. **C. K. Mangrulkar**, A. S. Dhoble, J. Abraham, S. Chamoli, 'Experimental and numerical Investigations for effect of longitudinal splitter plate configuration for Thermal-Hydraulic Performance of staggered tube bank', **International Journal of Heat and Mass Transfer, Elsevier** 161, 120280 (SCI Indexing) https://doi.org/10.1016/j.ijheatmasstransfer.2020.120280
2020	2. J. D. Abraham, A. S. Dhoble, **C. K. Mangrulkar**, Numerical analysis for thermo-hydraulic performance of staggered cross flow tube bank with longitudinal tapered fins, **International Communications in Heat and Mass Transfer, Elsevier** 118, 104905. (SCIE Indexing) https://www.sciencedirect.com/science/article/abs/pii/S0735193320304334
2019	**3.** A. Kunwar, M. Kumar, A. Gupta, **C.K Mangrulkar**, S. Chamoli, 'Experimental investigation of a packed-bed thermal energy storage system fitted with perforated cylindrical elements', **Heat and Mass Transfer (Springer)** 55 (2019) pp. 2723–2737. (SCIE Indexing) https://doi.org/10.1007/s00231-019-02609-x
2019	**4.** **C. K. Mangrulkar**, A. S. Dhoble, S. Chamoli, V. B. Gawande, 'Recent advancement in heat transfer and fluid flow characteristics in cross flow heat exchangers', **Renewable & Sustainable Energy Reviews, Elsevier** 113 (2019) 109220. (SCI Indexing) https://doi.org/10.1016/j.rser.2019.06.027
2019	5. **C. K. Mangrulkar**, A. S. Dhoble, S. Chamoli, 'Thermal performance escalation of cross flow heat exchanger using in-line elliptical tubes', **Experimental Heat Transfer, Taylor and Francis**. Ref. No.: UEHT-2018-015. (SCIE Indexing) https://doi.org/10.1080/08916152.2019.1704946
2018	6. A. Bartwal, A. Gautam, M. Kumar, **C. K. Mangrulkar**, S. Chamoli, 'Thermal performance intensification of a circular heat exchanger tube integrated with compound circular ring–metal wire net inserts',

	Chemical Engineering & Processing: Process Intensification, Elsevier 124 (2018) 50-70. (SCIE Indexing) https://doi.org/10.1016/j.cep.2017.12.002
2018	7. V. B. Gawande, A. S. Dhoble, D. B. Zodpe, **C. K. Mangrulkar**, 'A comparative analysis of thermo- hydraulic performance of a roughened solar air heater using various rib shapes', **Australian Journal of Mechanical Engineering,** (2018) (Scopus Indexing) https://doi.org/10.1080/14484846.2018.1525171
2017	8. **C. K. Mangrulkar**, A. S. Dhoble, S. G. Chakrabarty, U. S. Wankhede, 'Experimental and CFD prediction of heat transfer and friction factor characteristics in cross flow tube bank with integral splitter plate', **International Journal of Heat and Mass Transfer, Elsevier** 104 (2017) 964–978. (SCIE Indexing) https://doi.org/10.1016/j.ijheatmasstransfer.2016.09.013
2017	9. **C. K. Mangrulkar**, A. S. Dhoble, A. R. Deshmukh, S. A. Mandavgane, 'Numerical investigation of heat transfer and friction factor characteristics from in-line cam shaped tube bank in crossflow', **Applied Thermal Engineering** 110 (2017) 521–538. (SCIE Indexing) https://doi.org/10.1016/j.applthermaleng.2016.08.174
2016	10. **C. K. Mangrulkar**, V. M. Kriplani, A. S. Dhoble, 'Experimental Investigation of Convective Heat Transfer enhancement using alumina/water and copper oxide/water nanofluids', **Thermal Science**, vol. 20, No. 5, 2016, pp. 1681-1692. (SCIE Indexing) https://doi.org/10.2298/TSCI141225077M

International Conferences – 08

2019	1. **C. K. Mangrulkar**, J. D. Abraham, A.S. Dhoble, 'Numerical studies on the near wall y+ effect on heat and flow characteristics of the cross flow tube bank', **2nd International conference on New Frontiers in Engineering Science and Technology (NFEST-2019)**, 18-22 February 2019, NIT-Kurukshetra, India. (SCOPUS) https://doi.org/10.1088/1742-6596/1240/1/012110

2018	2. **C. K. Mangrulkar**, A.S. Dhoble, T. M. Sathe, Sunil Chamoli, Arunkumar H S, 'Thermal Performance Intensification of Cam shaped tubes in staggered layout', **Fifth International Conference on Computational Methods for Thermal Problems THERMACOMP2018**, July 9-11, 2018, Indian Institute of Science, Bangalore, INDIA. (SCOPUS) http://www.thermacomp.com/uploads/Proceedings_ThermaComp2018.pdf
2018	3. T. M. Sathe, A. S. Dhoble, **C. K. Mangrulkar**, S. S. Joshi, 'Thermal management of photovoltaic system using porous media', **Fifth International Conference on Computational Methods for Thermal Problems THERMACOMP2018**, July 9-11, 2018, Indian Institute of Science, Bangalore, INDIA. (SCOPUS) http://www.thermacomp.com/uploads/Proceedings_ThermaComp2018.pdf
2018	4. **C. K. Mangrulkar**, A.S. Dhoble, T. M. Sathe, S.S.Joshi, 'Thermal performance enhancement in cross flow by vortex generators: A Review', **2nd International conference on Advances in Mechanical Engineering (ICAME-2018)**, 22-24 March 2018, SRM University, Chennai. (SCOPUS) https://iopscience.iop.org/article/10.1088/1757-899X/402/1/012161/meta
2017	5. **C. K. Mangrulkar**, A.S. Dhoble, T. M. Sathe, 'Numerical simulation on effect of air attack angle on wake and vortex formation for tandem elliptical cylinders', **International Conference on Advances in Thermal System, Materials and Design Engineering (ATSMDE – 2017)** 21 – 22 Dec' 2017 at V.J.T.I., Mumbai, India.
2017	6. T. M. Sathe, A. S. Dhoble, S. S. Joshi, **C. K. Mangrulkar**, 'Performance Analysis of Photovoltaic Thermal System Using Silicone Oil Spectrum Filter', **6th International conference on Advances in Energy Research (ICAER- 2017)**, 12-14 Dec 2017, at IITB. https://doi.org/10.1007/978-981-15-2666-4_14
2017	7. Arunkumar H S, **C. K. Mangrulkar**, Trushar Gohil, 'Vortex dynamics and elliptical structure wake interaction in the proximity of wall using 2-D RANS simulation', **International Conference on Research in**

	Mechanical Engineering Sciences (RIMES 2017), December 21, 2017, MIT Manipal, Karnataka, India. (SCOPUS) https://doi.org/10.1051/matecconf/201814404018
2016	8. Arunkumar H S, **C. K. Mangrulkar**, Rahul Ikhar, Trushar Gohil, 'Two-dimensional study of Cylinder wake interaction with the flat plate boundary layer with RANS modelling', **6th International and 43rd National conference on Fluid Mechanics and Fluid Power (FMFP)**, December 15-17, 2016, MNNITA, Allahabad, U.P., India.

Book Chapter:

1. T. Sathe, A. S. Dhoble, S. Joshi, C. K. Mangrulkar, V. Choudhari, 'Numerical investigations of Photovoltaic phase change materials system with different inclination angles', Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering, Springer Nature Singapore Pte Ltd. 2021. https://doi.org/10.1007/978-981-15-3639-7_2

Awards/Fellowships

1. MHRD scholarship for M.Tech in Heat Power Engineering from 2011-13
2. MHRD scholarship for Ph.D from Jan-2014 to June-2018.
3. Received financial support from V.N.I.T. through TEQIP-II grant for fabrication of the experimental test facility (Low speed wind tunnel).

Membership of Professional Bodies and peer reviewing

1. International Association of Engineers (IAENG) (Membership No. 259575)
2. Reviewer - Journal of Heat Transfer, ASME.
   - International Journal of Heat and Mass Transfer, Elsevier.
   - Case study in Thermal Engineering, Elsevier.
   - Thermal Science, Vinca Institute of Nuclear Science

I, hereby declare that the above filled information is true and updated to the best of my knowledge.

Dr. Chidanand Mangrulkar