BIO-DATA

1. **Name** Dr. Bharatbhushan S. Kale
2. **Designation** Assistant Professor
3. **Residential Address** Airoli, Navi Mumbai, Maharashtra
4. **Date of birth** 14th April
5. **Total Experience** 16 years
   i. **Teaching** 16 years
   ii. **Industrial** Nil

6. **Qualifications**

Exam Passed	Year	Institution/ University	Branch/Specialization	Percentage/CGPA
Ph.D.	2021	University of Mumbai	Mechanical Engineering	---
M.Tech	2009	Government College of Engineering, Amravati, affiliated to S.G.B. Amaravati University	Thermal Engineering	68.56 %
B.E.	2005	Prof. Ram Meghe Institute of Technology and Research Badnera, Amravati, affiliated to S.G.B. Amaravati University	Mechanical Engineering	70.28 %

Additional Qualification:

7. **Employment Record**

Institution	Year (From To)	Designation
Fr. C. Rodrigues Institute of Technology, Vashi Navi Mumbai, Affiliated to the University of Mumbai	Nov 2022 till date	Assistant Professor
Datta Meghe College of Engineering, Airoli, Navi Mumbai. Affiliated to the University of Mumbai	July 2007 to Nov 2022	Assistant Professor

8. Undergraduate / Postgraduate Teaching Experience and Subjects Taught

Subjects Taught at UG level

Sr.No.	Name of Subject	Semester
1.	Thermodynamics	III
2.	Heat Transfer	V
3.	Thermal Engineering,	V
4.	Power Engineering,	VIII
5.	Thermal Fluid Power Engineering,	VI
6.	Micro Electro Mechanical System	VIII
7.	Theory of Machine I	IV
8.	Engineering Drawing	II

Subjects Taught at PG level

Sr.No.	Name of Subject	Semester
1	Control Engineering	I
2	Product Design	I

9. Research Experience: Nil

10. Research Funding / Consultancy Services:

Research Grants:

Sr. No.	**Name of Funding Organization**	**Type of Grant**	**Amount (Rs.)**	**Year**	**Name of Research Project**
01	University of Mumbai	University Minor Research, (Reference No. PD/237/601 of 2019)	30,000	2018-19	Development of Experimental setup for Study and Analysis of Microfractals under vacuum and higher pressure using Non-Newtonian Fluid.

11. Professional Societies Fellowship / Membership

- Life Member of ISTE, Membership No.:- LM – 58156
- International Association of Engineers (IAENG), Membership No.:- 200278

12. Achievements / Awards / Position

1) Received a Best Paper Award at "International Design Engineering Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE2022, August 14-17, 2022, St. Louis, Missouri, USA. (ASME 2022).

13. Projects guided in UG/PG level.

PG Level:

Sr. No.	Title of Dissertation / Project	Year	Name of student(s)
1	Analysis of Crash Box for Enhancement of Crash Performance of Vehicle Using Hybrid Approach	2022	Ms. Snehal Wagh
2	Numerical simulation of microfractals formation in lifting plate Hele-Shaw cell	2022	Mr. Suraj Satyawan Raul
3	Performance Evaluation of Quarter Car Model Semi-Active Suspension System with Fuzzy Logic Controller	2017	Mr. Nikhil Deepak Desai
4	Fabrication and Simulation of Conductive Tapered Microcantilever using Lift off Technique	2016	Ms. Neha K. Mishra
5	Development of micro-lens Array using Micro-EDM and micromoulding Process	2016	Mr. Harshvardhan B. Mokashi
6	Stress Analysis of Doors and Windows of Boeing 787 Aircraft subjected to Biaxial loading	2014	Mr. Swapnil J. Soni

14. Short Term Training Programmes

Organised

- Successfully Organised Three days workshop on "Recent Trend in Mechanical Engineering 2.0" June 2021 as a Convener, dated 20th -22nd Oct 2021.
- Successfully Organised Three days STTP on "Recent Trend in Mechanical Engineering 2021." 28th -30th June 2021 as a Co-ordinator, dated 28th -30th June 2021
- Successfully Organised Two days workshop on "Hand Gesture Control Devices" on 9th and 10thy October 2015

Attended

- Successfully completed one-week Elementary FDP on " Advanced 3D printing and design" organised AICTE Training And Learning (ATAL) Academy Online FDP, 20th December 2021 to 24th December 2021, at Sardar Patel College of Engineering Mumbai.
- Successfully completed one-week Elementary FDP on " Developing Interpersonal Skills and Effective Communication Intelligence" organised AICTE Training And Learning (ATAL) Academy Online FDP, 6th December 2021 to 10th December 2021, at Sardar Patel College of Engineering Mumbai.
- Successfully completed one-week Elementary FDP on " Drug Engineering" organised AICTE Training And Learning (ATAL) Academy Online FDP, 04th October 2021 to 08th October 2021, at Sardar Patel College of Engineering Mumbai.

- Successfully completed one-week Elementary FDP on "3D Printing and Design" organised AICTE Training And Learning (ATAL) Academy Online FDP, 20th September 2021 to 24th September 2021, at Sardar Patel College of Engineering Mumbai.
- Successfully completed one-week Elementary FDP on " Micro-electromechanical Systems" organised AICTE Training And Learning (ATAL) Academy Online FDP, 23rd November 2020 to 27th November 2020, at Sardar Patel College of Engineering Mumbai.
- Successfully completed two-week STTP on "Outcome based Education conducted by Datta Meghe College of Engineering, Airoli Navi Mumbai" 25-06-2020 to 04-07-2020
- Successfully completed one FDP on "1st International FDP on Research and Development in Material Behaviour, Processing and Characterisation Techniques" organised by Dept. Mechanical Engineering, GLA University, Mathura in association with Indian Institute of Metals (IIM), Mathura Chapter and Panjab University, Chandigarh, 09-06-2020 to 14-06-2020
- Successfully completed one-week STTP "Application of Industrial Engineering in Manufacturing & Infrastructure organised by Department of Mechanical Engineering, Datta Meghe College of Engineering, Airoli Navi Mumbai, In association with Indian Institution of Industrial Engineering (IIIE), 18-05-2020 to 22-05-2020
- Successfully completed one-week training cum workshop organised under TEQIP Phase-II on "Advanced Pressure Vessel Design And Analysis" in collaboration with L&T, by Mechanical Engineering Department of SPCE, Andheri (west) Bhavan's Campus, Mumbai-58, from 26th May to 30th May 2014**.**
- Successfully completed one day workshop on "Computational Fluid Dynamics using Open FOAM" organised by FOSSEE, at IIT Bombay held on 22nd March 2014.
- Successfully completed two-day workshop organised on "Industrial Fluid Power and its Application" by Sinhgad Institute of Technology Lonavala, from 14/02/2012 to 15/02/2012.
- Successfully completed a two-week ISTE workshop on "Thermodynamics in Mechanical Engineering" conducted by IIT Bombay from 14th to 24th June 2011.
- Successfully completed three days workshop on "Environmental Studies (EVS)" conducted by Jeevan Vidya Centre, Somaiya Vidyavihar on behalf of the University of Mumbai, 6th -8th August 2009
- Successfully completed two-week STTP on "Trends in Computer Networking" conducted by Datta Meghe College of Engineering, Airoli Navi Mumbai, 13th July to 24th July 2009.
- Successfully completed two-week STTP on "Accreditation and ISO certification of Technical Institution" conducted by Datta Meghe College of Engineering, Airoli Navi Mumbai, 7th July 2008 to 18th July 2008.
- Successfully completed three-week workshop cum training on Engineering Tools and Techniques Course "Imagineering Connect" conducted by Larsen and Toubro Limited, 2nd June to 20th June 2008.

15. List of Papers Published Journal/Conference (SCOPUS INDEXED)

- Valvi, Sharad, Kiran Suresh Bhole, **Bharatbhushan S. Kale**, Jayram Gholave, and Jugal Jagtap. "Synthesis of Sodium Chloro Fluoride system for generating micro

fractal type structures for microfluidic applications." *International Journal on Interactive Design and Manufacturing (IJIDeM)* (2023): 1-9.

- Surve, Minendra L., Prashant D. Deshmukh, Kailasnath B. Sutar, **Bharatbhushan S. Kale**, and Kiran Suresh Bhole. "Computational analysis of a new airfoil for micro-capacity wind turbine." *International Journal on Interactive Design and Manufacturing (IJIDeM)* (2023): 1-11.
- Lendhe, Avdhoot A., Nilesh Raykar, **Bharatbhushan S. Kale**, and Kiran Suresh Bhole. "Machine learning approach to predict viscous fingering in Hele-Shaw cells." International Journal on Interactive Design and Manufacturing (IJIDeM) (2023): 1-57.
- **Kale, Bharatbhushan** S., and Kiran S. Bhole. "Experimental investigation and simulation of lifting plate hele-shaw flow under anisotropy for spontaneous development of controlled planar microstructures." *International Journal on Interactive Design and Manufacturing (IJIDeM)* (2023): 1-16. https://doi.org/10.1007/s12008-023-01261-4
- Oak, Sachin, Kiran Bhole, **Bharatbhushan Kale**, and Harshal Dhongadi. "Experimental characterization of spontaneous formation of micro-fractals on conical surfaces in Hele-Shaw cell." *International Journal on Interactive Design and Manufacturing (IJIDeM)* (2023): 1-11. https://doi.org/10.1007/s12008-023-01260-5
- **Kale, Bharatbhushan** S., et al. "Micro and meso fabrication emerged from Saffman-Taylor instability developed in Hele-Shaw cell." *International Journal on Interactive Design and Manufacturing (IJIDeM)* (2023): 1-13. https://doi.org/10.1007/s12008-023-01236-5
- **Kale, Bharatbhushan** S., et al. "Finite element analysis and deployment of analytical hierarchical process for design of the structural framework for micro-actuators of vehicle crash box." *International Journal on Interactive Design and Manufacturing (IJIDeM)* (2023): 1-11. https://doi.org/10.1007/s12008-023-01219-6
- **Kale, Bharatbhushan** S., et al. "A practical approach towards utilisation of the net-shaped micro-structures developed in the lifting plate Hele–Shaw cell for micro-mixing." *International Journal on Interactive Design and Manufacturing (IJIDeM)* (2023): 1-11.
- Oak, Sachin, Vinod Belwanshi, Kedarnath Rane, Kiran Bhole, and **Bharatbhushan Kale** "Comparison of binary, ternary and quaternary shape memory alloys and techniques to enhance their mechanical properties: A focused review." *Materials Today: Proceedings* 68 (2022): 2199-2209.
- **Kale, Bharatbhushan**, et al. "Fabrication of meso sized structures through controlled viscous fingering in Lifting Plate Hele-Shaw Cell with holes and slots." *Advances in Materials and Processing Technologies* (2022): 1-19.
- **Kale, Bharatbhushan** S., et al. "Effect of polygonal surfaces on development of viscous fingering in lifting plate Hele-Shaw cell." *International Journal on Interactive Design and Manufacturing (IJIDeM)* (2022): 1-8.
- **Bharatbhushan S. Kale,** Kiran S. Bhole, and Chetna Sharma. "Effect of anisotropies in formation of viscous fingering in lifting plate Hele-Shaw cell." Advances in Materials and Processing Technologies (2021): 1-14. Publisher: Taylor & Francis.
- Kiran S. Bhole, and **Bharatbhushan Kale**. "Sublimation technique for minimisation of stiction induced during fabrication of closely spaced microstructures." Advances in Materials and Processing Technologies (2022): 1-11. Publisher: Taylor & Francis.
- Bhole, Kiran S., and **Bharatbhushan Kale**. "Techniques to minimise stair-stepping effect in micro-stereolithography process: A Review." *Advances in Materials and Processing Technologies* (2021): 1-20. Publisher: Taylor & Francis.

- **Bharatbhushan S**. **Kale,** and Kiran S. Bhole. "Controlling the instabilities in the radial Hele-Shaw cell." *International Journal of Theoretical and Applied Multiscale Mechanics* 3.3 (2020): 245-260. **Publisher: Inderscience**
- **Bharatbhushan S**. **Kale**, Kiran S. Bhole, Sanket S. Devkare, and Chetna Sharma. "Simulation of Viscous Fingers Developed in Lifting Plate Hele-Shaw Cell in Volume of Fluid Model". International Journal of Advanced Science and Technology 29 (3), (2020):14867.
  http://sersc.org/journals/index.php/IJAST/article/view/31990.
  Publisher: Science and Engineering Research Support Society, Australia.

16. List of Papers Published Journal/Conference

- Manoj Nimase, Mandar Padwal, Sagar Suryawansh, Dhirajkumar K. More and **Bharatbhushan S. Kale**. "Review paper on the control system of the air handling units." *International Research Journal of Engineering and Technology (IRJET)* 6 (2019): 3881-3894.
- **Bharatbhushan S**. **Kale**., Kiran Bhole, and Prachi Khond. "Experimental Modeling of Meso Fractals generated from non- Newtonian fluid from Lifting Plate Hele-Shaw Cell. " International Journal of Advanced Materials Manufacturing & Characterization Vol. 9 Issue 2 (2019).
- Khond, Prachi J., Onkar G. Sonare, **Bharat S. Kale**, and Neha K. Mishra. "Critical review on viscous fingering of non-Newtonian fluid developed in Hele-Shaw cell" Journal of Emerging Technologies and Innovative Research (JETIR) Vol. 4, no. 4 (2017): (ISSN-2349-5162).
- Nikhil Desai and **Bharatbhusha S. Kale**. "a review work on suspension systems models, control strategies for Suspension system" Journal of Emerging Technologies and Innovative Research (JETIR) Vol. 3, no. 10 (2016), (ISSN-2349-5162).
- Neha Mishra , **Bharatbhushan Kale** and Prachi Khond. "review: microcantilever fabrication Technology" Journal of Emerging Technologies and Innovative Research (JETIR) Vol. 3, no. 7 (2016), (ISSN-2349-5162).
- Harshavardhan Mokashi, **Bharat Kale**, Nilesh Singh and Gourav Talathi. "Development of Micro-lens array using Micro-EDM and Micro-Molding process" Journal of Emerging Technologies and Innovative Research (JETIR) Vol. 2, no. 10 (2015), (ISSN-2349-5162).
- Swapnil Soni, **Bharat Kale**, Nitin Chavan, Sunil Kadam "Stress Analysis of Door and Window of Boeing 787 Passenger Aircraft Subjected to Biaxial Loading", International Journal of Engineering Research & Technology (IJERT), ISSN 2278-0181,www.ijert.org, Vol. 3, Issue 3, March 2014
- Jyoti Anbhore, O.G. Sonare, **Bharat Kale**."Vibration Powered Piezoelectric Generator Using Finite Element Method " International Journal of Mechanical and Production Engineering ISSN: 2320-2092, Volume- 1, Issue- 5, Nov-2013
- Kiran S. Bhole, **B. S. Kale**, P.D.Deshmukh, O.G.Sonare, and Ajay Akhare, "Computational Analysis of Rim Thickness Effect on Crack Propagation Path in Gear", International Journal of Technology and Engineering System (IJTES): Nov–Dec 2011- Vol. 4, No7
- Kiran S. Bhole, **B. S. Kale,** P. D. Deshmukh, and O. G. Sonare, "Numerical Analysis and Investigation of Aluminum Alloys in Electromagnetic Metal Forming Process", International Journal of Technology and Engineering System (IJTES): Jan –March 2011-, pp 98-102, Vol.2, No 1

17. Book

Nil

18. Invited Lectures in FDP/ STTP:

1. Delivered a lecture on “Novel Technique to Develop Controlled Net Shape Microstructures using Fluid Shaping” as a resource person ATAL FDP on "3D Printing and Advanced Manufacturing" on 8th February 2023 at D.K.T.E. SOCIETY'S TEXTILE & ENGINEERING INSTITUTE, Rajwada Ichalkaranji (Dist.- Kolhapur).
2. Delivered an expert talk on "A Novel Technique of Microfabrication" in online webinar series organised by the Department of Engineering Sciences, Ramrao Adik In statute of Technology, Nerul, Navi Mumbai on 14th Jan 2021.
3. Delivered an expert talk on "Future of Mechanical and Chemical Engineering" organised by the first-year Department, Anuradha Engineering College, Chikhali, Dist. Buldhana on 9th Feb 2021.

19. International Conference Technical Program Committee Member / Reviewer

Reviewer for International Conference

1. International Conference On “Industry 4.0 - Nascent Technologies and Sustainability for 'Make in India' Initiative” dated 22nd - 23rd December 2022.
2. Sardar Patel International Conference (SPICON 2022) on Industry 4.0 - Nascent Technologies and Sustainability for 'Make in India' Initiative, 22nd -23rd December 2022.

Reviewer for International Journal :

- International Journal on Interactive Design and Manufacturing (IJIDeM), Publisher: Springer
- An International Journal on Innovative Applied Sciences, Engineering and Biomedical Research

Reviewer for:

- Elsevier’s Materials Today: Proceedings 2022

20. Patents

1. A design Patent is registered on "Experimental Setup for Study of fractal formation on Curved (Conical, Spherical) Surfaces in Lifting Plate Hele-Shaw Flow."
   Design Patent Application No. 340352-001, Published in Journal No is 49/2022, dated 09/12/2022
2. A design Patent is registered " Nose cap of the centrifugal pump." To Indian Patent office
   Design Patent Application No. 378951-001,