Curriculum Vitae

Dr. V. D. Kalyankar
Assistant Professor
Department of Mechanical Engineering
S. V. National Institute of Technology, Surat, Gujarat, India
Ph.D., M.Tech, B.E (Mechanical Engineering)
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Summary

- IEI Young Engineer Award in Mechanical Engineering Discipline 2014-15 given by The Institution of Engineers (India)
- Weldwell Speciality Award 2021 for best Ph.D thesis to the Ph.D candidate under supervision given by The Indian Institute of Welding
- Nominated as vice-chairman – The Indian Institute of Metals, Hazira Chapter
- ASNT certified level – II inspector for radiographic testing
- **Research interests:**
  - Weldability of advanced materials, surface engineering
  - Welding metallurgy, materials characterization
  - Application of advanced optimization techniques to engineering problems
- **Publication summary:**

  International Journals – 35 International Conferences – 40

  Book chapter – 01

  Scopus h-index: 9, Citations: 600+
  (https://www.scopus.com/authid/detail.uri?authorId=55279804400)
- **Sponsored research projects:** 1 ongoing, 02 completed
- **Short term training programs organized:** 12
- **Conferences organized:** 04
- **Expert lectures delivered:** @ 250 Hours
- **Total experience:** @19 Years
- **Ph.D. guidance:** 02-Completed, 01-Submitted, 03-Ongoing
- **Qualified the national examination GATE** (02 times)
- **Countries visited for technical interactions**:

  South Korea, Mexico, Russia, Austria, Ukraine

Details

❖ **Details of employment:**

Sr. No.	Designation	Employer	Duration
1.	Assistant Professor	S. V. National Institute of Technology (SVNIT), Surat, Gujarat, India	From March 2009 onwards
2.	Lecturer	Shri Sant Gajanan Maharaj College of Engg., Shegaon, Maharashtra, India	@ 05 years
3.	Junior Engineer (Q.C.)	M/s. Expo Gas Containers Ltd. Mumbai, India	@ 1.5 years

❖ **Details of sponsored research projects:**

A.) Supported by funding agencies:

Sr. No.	Title of project	Funding agency	Duration	Status
1.	Investigations on wear characteristics of NiCrBSi overlay surface on 304 SS with and without tungsten carbide reinforcement	The Institution of Engineers (India), Kolkata	1.5 years	Ongoing (PI)
2.	Process parameter optimization of submerged arc welding for modified Cr-Mo steel using advanced optimization techniques	Gujarat Council on Science and Technology, GUJCOST, Gandhinagar	02 years	Completed (Co-PI)
3.	Development of decision support models for environmentally conscious design and manufacturing of products (Indo-Austria Joint Research Project	Department of Science and Technology, (DST), International Division, New Delhi, India (Indo-Austria Bilateral Project)	02 years	Completed (Co-PI)

B.) Supported by renowned industries:

1. Ni-Based hard facing (as an alternative of Co-based Stellite hardfacing) for P91 grade steels by PTAW process – Supported by L&T-MHPS Turbine Generators Pvt. Ltd., Hazira, Surat, Gujarat (2018-2020, completed)

2. Investigations on influence of PTAW process parameters and Co-Cr overlay characteristics with SS 316L substrate material – Supported by KOSO India Pvt. Ltd., Nashik, Maharashtra (2016-2018, completed)

❖ **Details of publications in International Journals:** (Selected)

1. **V. D. Kalyankar**, A. Bhoskar, D. Deshmukh, S. Patil **(2022)** On the performance of metallurgical behaviour of Stellite 6 cladding deposited on SS316L substrate with PTAW process. **Canadian Metallurgical Quarterly**. https://doi.org/10.1080/00084433.2022.2031681*(Accepted manuscript)*
2. **V. D. Kalyankar,** Wanare S. P. **(2022)** Microstructure evolution and its correlation with slurry abrasive wear behaviour of NiCrSiB hardfacing deposited on 304 SS by plasma transferred arc welding. **Practical Metallography**. *(Accepted manuscript)*
3. H. V. Naik, **V. D. Kalyankar (2021)** Development of NiCrSiBC weld hardfacing approach for P91 steels used in steam turbine components. **Soldagem and Inspecao,** 26.
4. Lakhan Zunake, **V. D. Kalyankar (2021)** On the performance of weld overlay characteristics of Ni-Cr-Si-B deposition on 304 ASS using synergetic pulse-GMAW process, **Science and Technology of Welding and Joining**. *26(2):106-115*
5. H. V. Naik, **V. Kalyankar**, K. Solanki, N. Pandya, A. R. Bhoskar **(2021)** Influence of post weld heat treatment on metallurgical characteristics of NiCrSiBC hardfacing over P91 steel. **Metal Science and Heat Treatment.** *(Accepted manuscript)*
6. **V. D. Kalyankar,** S. P. Wanare **(2022)** Nickel-based overlay materials: Recent developments, characteristic effects and applicability with plasma transferred arc welding, **International Journal of Materials and Product Technology,** 64(2):93-120.
7. S. P. Wanare, **V. D. Kalyankar (2021)** Influence of Fe dilution and W dissolution on abrasive wear resistance of NiCrBSi–WC composite hardfacing deposited by plasma transferred arc hardfacing. **Journal of Advanced Manufacturing Systems.** https://doi.org/10.1142/S0219686722500251 *(Accepted manuscript)*
8. Dhiraj Deshmukh, **V. D. Kalyankar (2021)** Analysis of deposition efficiency and distortion during multitrack overlay by plasma transferred arc welding of Co-Cr alloy on 316L stainless steel, **Journal of Advanced Manufacturing Systems,** 20(4):705-728.
9. **V. D. Kalyankar,** Avishkar Bhoskar **(2021)** Influence of torch oscillation on the microstructure of Colmonoy 6 overlay deposition on SS304 substrate with PTA welding process, **Metallurgical Research and Technology**, 118(4):406.
10. Nikhil Pandya, **V. D. Kalyankar,** H. V. Naik **(2021)** Influence of post weld heat treatment cycles on impact toughness of P91 steel welded joint, **Metal Science and Heat Treatment,** 63(5) 269-279.
11. **V. D. Kalyankar,** S. P. Wanare **(2021)** Comparative investigations on microstructure and slurry abrasive wear resistance of NiCrBSi and NiCrBSi-WC composite hardfacings deposited on 304 stainless steel, **Tribology in Industry.** *DOI: 10.24874/ti.1075.03.21.05*
12. **V. D. Kalyankar,** H. V. Naik **(2021)** Overview of metallurgical studies on weld deposited surface by plasma transferred arc technique, **Metallurgical Research and Technology**. *118(1):111*

13. A. P. Thummar, S. P. Wanare, **V. D. Kalyankar (2021)** Effect of dilution on microstructure and slurry abrasive wear behaviour of Ni-Cr-Mo-W coating on 304 stainless steel deposited by synergic pulsed gas metal arc welding, **Tribology in Industry.** 43(3).
14. R. V. Patel, S. P. Wanare, **V. D. Kalyankar (2021)** Investigations on wear behaviour of AISI 4140 hot strip mill roller hardfaced with martensitic stainless steel by submerged arc welding process, **Tribology in Industry.** 43(3).
15. **V. D. Kalyankar,** H. V. Naik, S. Shah **(2020)** Metallurgical characterizations of SS-309L and Inconel 625 as buffer layers on P91 steel, **Practical Metallography.** *57(12):828-852*
16. **V. D. Kalyankar,** H. V. Naik **(2020)** Influence of welding position on tribological behavior of SS-309L cladded surface on 9Cr- 1Mo steel, **Tribology in Industry.** 43(2).
17. **V. D. Kalyankar**, G. P. Chudasama **(2020)** Influence of electrode tip diameter on metallurgical and mechanical aspects of spot welded duplex stainless steel, **High Temperature Materials and Processes**. *39(1):317-327*
18. **V. D. Kalyankar**, Ajinkya V. Musale **(2020)** Design optimization of vehicle suspension systems using artificial intelligent techniques, **International Journal of Operational Research.** *37(3):324-344*
19. D. D. Deshmukh, **V. D. Kalyankar**, **(2019)** Deposition characteristics of multitrack overlay by plasma transferred arc welding on SS316L with Co-Cr based alloy – Influence of process parameters, **High Temperature Materials and Processes**. *38:248-263*
20. R. D. Dandagwhal, **V. D. Kalyankar**, **(2019)** Design optimization of rolling element bearings using advanced optimization technique, **Arabian Journal for Science and Engineering**. *44:7407–7422*
21. **V. D. Kalyankar**, Nitin Chouhan **(2019)** Effect of weld parameters on joint strength of 904L grade steel using resistance spot welding, **International Journal of Computational Materials Science and Surface Engineering.** *8(3/4):211-229*
22. D. D. Deshmukh, **V. D. Kalyankar**, **(2018)** Recent status of overlay by plasma transferred arc welding technique, **International Journal of Materials and Product Technology.** *56:23-83*
23. **V. D. Kalyankar**, Amey Pujari, **(2018)** Simulation and design optimization of broach tool geometry for enhancing material removal rate, **International Journal of Simulation and Process Modelling**. *13(3):264-271*
24. R. V. Rao, **V. D. Kalyankar**, G. G. Waghmare **(2014)** Parameters optimization of selected casting processes using teaching–learning-based optimization algorithm, **Applied Mathematical Modelling**. *38:5592-5608*
25. R. V. Rao, **V. D. Kalyankar (2014)** Optimization of modern machining processes using advanced optimization techniques: a review, **International Journal of Advanced Manufacturing Technology**. *73:1159-1188*

26. R. V. Rao, **V. D. Kalyankar (2013)** Parameter optimization of modern machining processes using teaching–learning-based optimization algorithm, **Engineering Applications of Artificial Intelligence**. *26:524-531*
27. R. V. Rao, **V. D. Kalyankar (2013)** Experimental investigation on submerged arc welding of Cr-Mo-V steel, **International Journal of Advanced Manufacturing Technology**. *69:93-106*
28. R. V. Rao, **V. D. Kalyankar (2013)** Multi-pass turning process parameter optimization using teaching–learning-based optimization algorithm, **Scientia Iranica.** *20(3):967-974*
29. R. V. Rao, **V. D. Kalyankar (2012)** Parameter optimization of machining processes using a new optimization algorithm, **Materials and Manufacturing Processes**. *9:978-985*
30. R. V. Rao, **V. D. Kalyankar (2012)** Multi-objective multi-parameter optimization of industrial laser beam welding process using a new optimization algorithm, **Journal of Engineering Manufacture**. *226(6):1018-1025*

❖ **Reviewer of reputed International Journals:**

- Engineering Failure Analysis (Elsevier)
- Materials and Design (Elsevier)
- Materials Chemistry and Physics (Elsevier)
- Robotics and Integrated Manufacturing (Elsevier)
- Materials Research (Ibero–American Journal of Materials)
- Energy (Elsevier)
- Steel and Composite Structures (Techno-Press)
- Sadhana (Springer)
- Applied Soft Computing (Elsevier)
- Engineering Optimization (Taylor and Francis)

❖ **Membership details of Professional Societies:**

- The Indian Institute of Metals – Life Member
- The Indian Institute of Welding - Life Member
- The Institution of Engineers (India) – Member
- Indian Society for Technical Education – Life Member
- Indian Institution of Industrial Engineering – Life Member
- Indian Society for Advancement of Materials and Process Engg. - Life Member

❖ **Visits to foreign universities/labs:**

- Mexican Materials Research Laboratory (COMIMSA), Mexico
- Technical University of Vienna, Austria
- Novosibirsk State Technical University, Novosibirsk, Russia
- Korea Maritime and Ocean University, Busan, South Korea
- National Academy of Sciences of Ukraine, Ukraine

❖ **Training programs organized:**

1. Short term course on "Lightweight materials for automotive applications: Fundamentals, recent developments and challenges in manufacturing" **sponsored by the Global Initiative of Academic Networks (GIAN) scheme.** (*Upcoming - Rescheduled and likely to be conducted during December 2022)*

2. Online faculty development program on "Blended learning and flipped classroom" **sponsored by AICTE Training and Learning (ATAL) Academy**, 08 – 12 February 2021. (Coordinator)

3. Online faculty development program on "Reality based welding simulator: Significance, virtual training and industrial correlation" **sponsored by AICTE Training and Learning (ATAL) Academy,** 18 – 22 January 2021. (Coordinator)

4. Online faculty development program on "Blended learning and flipped classroom" **sponsored by AICTE Training and Learning (ATAL) Academy,** 10 – 14 August 2020. (Coordinator)

5. Online faculty development program on "Reality based welding simulator: Significance, virtual training and industrial correlation" **sponsored by AICTE Training and Learning (ATAL) Academy,** 18 – 22 May 2020. (Coordinator)

6. Faculty development program on "Reality based welding simulator: Significance, hands on training and industrial correlation" **sponsored by AICTE Training and Learning (ATAL) Academy,** 23 – 27 December 2019. (Coordinator)

7. Faculty development program on "Fundamentals of energy management and Applications" **sponsored by AICTE Training and Learning (ATAL) Academy,** 25 – 29 November 2019. (Co-coordinator)

8. Short term training program on "Modeling and optimization techniques for engineering applications (MOTEA-III)" sponsored by Technical Education Quality Improvement Program, 27 Feb. – 03 March 2017 (Coordinator)

9. Short term training program on "Modeling and optimization techniques for engineering applications (MOTEA-II)" sponsored by Technical Education Quality Improvement Program, 26 – 30 December 2016 (Coordinator)

10. Short term training program on "Modeling and optimization techniques for engineering applications (MOTEA-I)" sponsored by Technical Education Quality Improvement Program, 19 – 23 May 2014 (Coordinator)

❖ **International conference/workshop organized:**

1. International Conference on Advanced Engineering Optimization through Intelligent Techniques, conducted during 01-03 July 2013 (Co-convener)
2. 5th International conference on Advances in Mechanical Engineering (ICAME), conducted during 06-08 June 2011 (Co-convener)
3. 4th International conference on Advances in Mechanical Engineering (ICAME), conducted during 23-25 September 2011 (Co-convener)
4. DST-RFBR funded Indo-Russian Joint Research Workshop on Computational Intelligence and Modern Heuristics on Automation and Robotics (CIMHAR), conducted during 20-22 September 2010 (Co-coordinator)

❖ **Broad research topics of Ph.D candidates:**

1. Investigations on influence of PTAW process parameters and Co-Cr overlay characteristics with SS 316L substrate material *(Dhiraj Deshmukh)*
2. Development of high temperature wear resistant NiCrSiBC hardfacing approach with identified buffer layer on P91 steel *(Hardik Naik)*
3. Investigations on mechanical and metallurgical characteristics of NiCrBSi overlay surface on 304SS with and without WC reinforcement *(Sachin Wanare)*
4. Significance of metallurgical changes developed in the cladded surface deposited by PTAW process *(Avishkar Bhoskar)*
5. Investigation on dissimilar welding of advanced grade sheet materials for automobile applications *(Gautam Chudasama)*

❖ **Support and interactions with major industries:**

- KOSO India Pvt. Ltd., Nashik, Maharashtra
- L&T MHPS Turbine Generators Pvt. Ltd. Hazira
- Nash Robotics and Automation Pvt. Ltd., Nashik, Maharashtra
- Fronius India Pvt. Ltd., Pune

❖ **Major activities initiated:**

1. Developed “Advanced welding lab” in the department consisting of advanced equipments and testing facilities. Some of the advanced grades of materials required for the research work are regularly supported by surrounding industries.
2. Started the students chapter of “The Indian Institute of Welding”, which will be highly beneficial to bridge the gap between Industry-Academic activities.

❖ **Major administrative duties:**

- Acting as PG In-charge - M.Tech Manufacturing Engineering since Dec. 2021
- Acting as PG In-charge - M.Tech (Research) since past 03 years
- Acted as Faculty In-charge, New Class Room Complex for 02 years
- Acted as Chief Warden for 03 years

(Dr. V. D. Kalyankar)
31/03/2022