RESUME

Dr. RAMESH M.R.
Professor
Department of Mechanical Engineering
National Institute of Technology Karnataka
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❖ CURRENT AREA OF RESEARCH :

Thermal Spray Coatings, Thin films, Laser and microwave surface modification, Biomaterials, Machining, Wear, Erosion.

❖ ACADEMIC RECORD

➢ **DEGREE** : **Ph.D**
Institution **: Indian Institute of Technology Roorkee, Roorkee.**
Thesis Title : Studies on the Role of HVOF Coatings in Improving Resistance to Hot Corrosion and Erosion
Year of completion : 2008

➢ **POST GRADUATION** : **M.Tech (Mechanical Engineering)**
Specialization : **Manufacturing Science and Engineering**
Institution : M.S. Ramaiah Institute of Technology, Bangalore.
University : Visveswaraiah Technological University.
Year of Passing : February 2002.
Results : **I st class with distinction @ 75.20% aggregate (Secured university third rank)**

➢ **GRADUATION** : **B.E. (Mechanical Engineering)**
Institution : Siddaganga Institute of Technology, Tumkur.
University : Bangalore University.
Year of Passing : Aug. 1999.
Results : **I st class with distinction @ 67.03% aggregate**

❖ WORK EXPERIENCE: (present to previous)

➢ Institution : National Institute of Technology Karnataka, Surathkal
Designation : Professor
Duration : October 09, 2023 – Till date

➢ Institution : National Institute of Technology Karnataka, Surathkal
Designation : Associate Professor
Duration : May 16, 2018 – October 09, 2023

➢ Institution : National Institute of Technology Karnataka, Surathkal
Designation : Assistant Professor
Duration : December 2012 – May 16, 2018

➢ Institution : M.S.Ramaiah Institute of Technology, Bangalore.
Designation : Associate Professor
Duration : April 2011 – December 2012

➢ Institution : Reva Institute of Technology and Management, Bangalore.
Designation : Assistant Professor
Duration : July 2008 – April 2011

➢ Institution : Nitte Institute of Technology, Bangalore.

Designation : Assistant Professor
Duration : September 2002 – July 2003, February 2008 – July 2008

❖ RESEARCH PROJECTS:

1. Design and development of Supercritical carbon dioxide based naturally circulated solar thermal collector,
   Funding Agency: SERB, New Delhi, under Core Research Grant,
   PI: Dr. Ajay Kumar Yadav; Co-PI: Dr. M. R. Ramesh
   Funding amount: Rs 23,817,64/-
   Duration: 3 years (2021-24)

2. Performance evaluation of HVAF sprayed NiAl intermetallic based composite coatings for aerospace repair and manufacturing applications
   Funding Agency: SERB, New Delhi, under Core Research Grant,
   PI: Dr. M. R. Ramesh; Co-PI: Dr. Sharnappa joladarashi
   Funding amount: Rs 30,288,17/-
   Duration: 3 years (2023-26)

3. Combined HVOF-PVD technology in coating manufacturing alternate to hard chrome
   Funding Agency: DST-International Cooperation Division
   PI: Dr. Ramesh M R; Co-PI: Dr. Ravikiran Kadoli and Dr. Sharnappa J
   Funding amount: Rs 12,51,680/-
   Duration: 2 years (2023-25)

4. Development of HVOF sprayed cermets coatings in improving resistance to hot corrosion and erosion of gas turbine alloys granted by All India Council for Technical Education during 2013 with funding of Rs 18,10,000.(Completed)
   PI: Dr. M. R. Ramesh; Co-PI: Dr. N D Prasanna

❖ PATENT:

1) Indian Patent: Patent Number-565916, Date of grant-08/04/2025, Title- Method For Synthesizing A Nanocomposite Coating Having Copper Oxide (CuO) Nanoparticles, Inventors: Ramesh M R, Prakash Kumar, Mrityunjay Doddamani, Gajanan Anne, Aditya Kudva S
2) Design No. : 469894-001, Date : 16/08/2025, Height Adjustable Reverse - Pendulum Material Handling Swing Lift, Dr. Mahantayya K. Mathapati, Mr. Nilesh Ramesh Kumbhar, Dr. Nithin H. S, Dr. Ramesh M. R.

❖ RESEARCH PUBLICATIONS/BOOKS:

Research Publications : 205 articles in SCI/Scopus journals and 13 book chapters.
Total Citations : 4462
'h' index : 38
https://www.scopus.com/authid/detail.uri?authorId=57724394900

Journal Publication

1) Behera N, Ramesh MR. Characterization and evaluation of carbide-based composite coatings for high-temperature wear resistance on Titanium substrate. Tribology - Materials, Surfaces & Interfaces. 2026;20(1):11-30. doi:10.1177/17515831251398253
2) Ranjan Yadav, M.R. Ramesh, Sangappa R. Dasar, Ajay Kumar Yadav, Effect of latitude on the thermo-hydraulic performance of a parabolic trough collector utilizing naturally circulated supercritical CO2, International Communications in Heat and Mass Transfer, Volume 172, Part 4, 2026, 110491, ISSN 0735-1933, https://doi.org/10.1016/j.icheatmasstransfer.2026.110491.
3) Rakshith Kumar Shetty, Ajit M. Hebbale, T.V. Chandramouli, M.R. Ramesh, Jana Petru, High-temperature cyclic oxidation and microstructural behavior of CoMoCrSi-based composite coatings with Al2O3 and YSZ on T91 steel, Journal of Alloys and Metallurgical Systems, Volume 13, 2026, 100232, ISSN 2949-9178, https://doi.org/10.1016/j.jalmes.2026.100232.
4) Rakshith Kumar Shetty, Ajit M. Hebbale, M.S. Srinath, Subbarao Medabalimi, M.R. Ramesh, Jana Petru, Microstructural characterization and high-temperature erosion performance of oxide-reinforced CoNiCrAlY plasma-sprayed coatings, Journal of Materials Research and Technology, Volume 41, 2026, Pages 7470-7485, ISSN 2238-7854, https://doi.org/10.1016/j.jmrt.2026.03.049.
5) Subbarao Medabalimi, Ravikiran Kadoli and M.R. Ramesh, Enhancing wear and erosion resistance of partially oxidized NiCrBSiFeC coating by plasma spray on MDN431 substrate, EPJ Web of Conferences, 2026, 345, 01070, https://doi.org/10.1051/epjconf/202634501070
6) Sai Kumar Shada, Subhaschandra Kattimani, and M. R. Ramesh, Nonlinear Transient Dynamics of Skew Porous Graded Composite Plates supported on Multi-Parameter Elastic Foundations: Winkler–Pasternack/Kerr Models, International Journal of Structural Stability and Dynamics, 2026, 2750241, https://doi.org/10.1142/S0219455427502415

7) Subbarao Medabalimi, Uzwalkiran Rokkala, Suresh Gudala, Netrananda Behera, M. R. Ramesh & Mesay Dejene, Wear and frictional behaviour of partially oxidized and plasma sprayed NiCr and NiCrBSiFe coatings. Sci Rep 15, 19717 (2025). https://doi.org/10.1038/s41598-025-99567-8
8) Prakash Kumar, Gajanan Anne, S. Ramesh, S. Aditya Kudva, M. R. Ramesh, Mrityunjay Doddamani, Ashwini Prabhu & Sandeep Sahu, High-pressure torsion of biodegradable Mg–Zn–Mn alloy and investigate mechanical and corrosion behaviour. Sci Rep 15, 36168 (2025). https://doi.org/10.1038/s41598-025-20031-8
9) Uzwalkiran Rokkala, Aneesh Patil, Srikanth Bontha, M. R. Ramesh, Vamsi Krishna Balla & A. Srinivasan, Microstructural Evolution of Mg-Zn-Gd Alloy Using Equal Channel Angular Pressing to Enhance Mechanical and Corrosion Properties. J. of Materi Eng and Perform 34, 25273–25283 (2025). https://doi.org/10.1007/s11665-025-11054-3
10) Nidhi Ojha, Sumodh Kumar, M. R. Ramesh, Mrityunjay Doddamani, Investigating the effect of thermomechanical cycles on shape memory effect of four-dimensional printed glass fiber/polyether ketone ketone composite. Polym Compos. 2025;46(Suppl. 3):S614-S624. doi:10.1002/pc.29986
11) C.R. Aprameya, Sharnappa Joladarashi, M.R. Ramesh, Investigation of high-temperature wear behaviour of Mo-alloyed SS316 laser claddings deposited by LDED for heat exchanger tubes, Next Materials, Volume 9, October 2025, https://doi.org/10.1016/j.nxmate.2025.101051
12) C.R. Aprameya, Sharnappa Joladarashi, M.R. Ramesh, Surface enhancement of SS304 for high-temperature wear resistance using laser cladded Mo-alloyed stellite 6 coatings, Surface and Coatings Technology, Volume 513, 1 October 2025, https://doi.org/10.1016/j.surfcoat.2025.132457
13) Vinay Varghese, Priyaranjan Sharma, M. R. Ramesh, D. Chakradhar & Sunilkumar Dhasan, Experimental Investigation on Surface Integrity in Cryogenic Machining of Maraging Steel. J. of Materi Eng and Perform 34, 21176–21185 (2025). https://doi.org/10.1007/s11665-025-10672-1
14) Prakash Kumar, M. R. Ramesh, Mrityunjay Doddamani & S. Narendranath, Enhanced Anti-corrosion and Anti-fouling Properties of Galvanized Iron Using Nanocomposite Hydrophobic Coatings. J. of Materi Eng and Perform 34, 12612–12627 (2025). https://doi.org/10.1007/s11665-024-10035-2
15) Netrananda Behera, M. Ravish, Prakash Kumar, M.R. Ramesh, Effect of wt% molybdenum content on the tribological properties of WC-10Ni/Mo coatings at elevated temperatures, Materials Characterization, Volume 225, July 2025, https://doi.org/10.1016/j.matchar.2025.115191
16) T. V. Chandramouli, Sharnappa Joladarashi, M. R. Ramesh & Mohammad Rizwanur Rahman, Microstructure, Mechanical Properties, and Tribological Properties of Fe-Based Composite Coatings Reinforced with WC-Co and Cr3C2. J. of Materi Eng and Perform 34, 10323–10338 (2025). https://doi.org/10.1007/s11665-024-09762-3
17) Behera N, Sarmah P, Chandramouli TV, Ramesh MR. Effect of molybdenum on high-temperature tribological performance in HVOF sprayed of WC-based coatings on superni-76. Tribology - Materials, Surfaces & Interfaces. 2025;19(2):97-110. doi:10.1177/17515831251332401
18) Subbarao Medabalimi, Ajit M. Hebbale, Suresh Gudala, M.R. Ramesh, Rahul Gujar, N. Aravindan, Jana Petru, Studies on high-temperature erosion behaviour of HVOF sprayed NiCr based composite coatings, Results in Engineering, Volume 26, 2025, 105090, ISSN 2590-1230, https://doi.org/10.1016/j.rineng.2025.105090.
19) Subbarao Medabalimi, Suresh Gudala, Uzwalkiran Rokkala, Ajit M. Hebbale & M. R. Ramesh, Microstructure and elevated temperature wear behavior of HVOF-sprayed SS304L stainless-steel coating. Discov Appl Sci 7, 428 (2025). https://doi.org/10.1007/s42452-025-06904-7
20) Syam Narayana Addepalli, Sharnappa Joladarashi & M. R. Ramesh, Microstructure, Mechanical, and Dry Sliding Wear Performance of Equimolar CoCrNiTiMo and CoCrNiTiW High-Entropy Alloy Coatings. J Therm Spray Tech 34, 1329–1352 (2025). https://doi.org/10.1007/s11666-025-01975-9
21) Sai Kumar Shada, Subhas chandra Kattimani & Ramesh M. R.(2024). Active layer damping of bi-directionally tapered functionally graded sandwich plates with 1-3 piezoelectric composites. Mechanics of Advanced Materials and Structures, 1–20. https://doi.org/10.1080/15376494.2024.2343033
22) Chandramouli T V, Joladarashi S, Ramesh MR. Tribological characteristics of HVOF sprayed Fe-based composite coatings at elevated temperatures. Tribology - Materials, Surfaces & Interfaces. 2025;19(1):54-69. doi:10.1177/17515831241309208
23) Ajit M. Hebbale, M.R. Ramesh, Jana Petru, T.V. Chandramouli, M.S. Srinath, Rakshith Kumar Shetty, A microstructural study and high-temperature oxidation behaviour of plasma sprayed NiCrAlY based composite coatings, Results in Engineering, Volume 25, 2025, 103926, ISSN 2590-1230, https://doi.org/10.1016/j.rineng.2025.103926.
24) Prakash Kumar, Aditya Kudva S, AnilKumar T, Ramesh S, M.R. Ramesh, Ashwini Prabhu, Gajanan Anne, Synthesis and characteristics of Fe/Ni/Cr oxide nanoparticles/PLA hybrid composite coatings on Mg–Zn–Ca alloy, Journal of Materials Research and Technology, Volume 35, 2025, Pages 2573-2583, ISSN 2238-7854, https://doi.org/10.1016/j.jmrt.2025.01.180.
25) Subbarao Medabalimi, Ajit M. Hebbale, Suresh Gudala, Uzwalkiran Rokkala, M.R. Ramesh, Studies on high temperature erosion behavior of HVOF-sprayed (Cr_3C_2-NiCr)Si and WC-Co/NiCrAlY composite coatings, International Journal of Refractory Metals and Hard Materials, Volume 127, 2025, 106970, ISSN 0263-4368, https://doi.org/10.1016/j.ijrmhm.2024.106970.
26) Chandramouli, T.V., Joladarashi, S., Ramesh, M.R. (2025). Tribological Performance of Fe-Based Composite Coatings Under Elevated Temperature Conditions. In: Gnanamoorthy, R., Kamaraj, M., Moharana, S., Miyashita, Y. (eds) Advanced Materials and Innovative Processing. ASMP 2024. Springer Proceedings in Materials, vol 84. Springer, Singapore. https://doi.org/10.1007/978-981-96-9513-3_16

27) Shada SK, Kattimani S, Ramesh MR. Influence of hybrid smart damping system on bi-directionally tapered functionally graded plate using 1-3 PZC resting on winkler-pasternak flexible support. Noise & Vibration Worldwide. 2025;0(0). doi:10.1177/09574565251394416
28) C.R. Aprameya, Sharnappa Joladarashi, M. R. Ramesh, Dry linear reciprocating wear behavior of molybdenum-reinforced SS316 laser claddings deposited by laser directed energy deposition, Results in Surfaces and Interfaces, Volume 18, 2025, 100407, ISSN 2666-8459,https://doi.org/10.1016/j.rsurfi.2024.100407.
29) Aprameya, CR, Chandramouli, TV, Joladarashi, S, & Ramesh, MR. "Dry Sliding Wear Resistance of HVOF Sprayed Iron-Based Composite Coatings Alloyed With Carbides Across Various Temperatures." Proceedings of the ASME 2025 International Mechanical Engineering Congress and Exposition - India. Hyderabad, India. September 10–13, 2025. V005T10A090. ASME. https://doi.org/10.1115/IMECE-INDIA2025-161297
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31) Kumar S, Ojha N, Ramesh MR, Doddamani M. 4D printing of heat-stimulated shape memory polymer composite for high-temperature smart structures/actuators applications. Polym Compos. 2024;45(17):15460-15490. doi:10.1002/pc.28844
32) Subbarao Medabalimi, Ajit M. Hebbale, Richa Singh, Vijay Desai, M.R. Ramesh, Microstructural evolution and cyclic oxidation behavior of HVOF-sprayed NiCrSi and NiCrC coatings on T11 steel, Materials Characterization, Volume 218, Part 1, 2024, 114495, ISSN 1044-5803, https://doi.org/10.1016/j.matchar.2024.114495.
33) Prakash kumar, M.R. Ramesh, Mrityunjay Doddamani, Shivaji Bhosale, Investigation of antibacterial potential of CuO nanoparticles synthesised using Costus pictus leaf extract, Inorganic Chemistry Communications, Volume 169, 2024, 113074, ISSN 1387-7003, https://doi.org/10.1016/j.inoche.2024.113074.
34) A. Sangeetha, S. Hariganesh, B. Abarna, Prakash Kumar, M. R. Ramesh & Mrityunjay Doddamani, Onion Peels Assisted Synthesis of Biofunctionalized CuO Nanoparticles as Nano-Photocatalyst and Nano-Antibiotic. Chemistry Africa 7, 4861–4873 (2024). https://doi.org/10.1007/s42250-024-01066-2
35) Netrananda Behera, M. Srihari, Yogesh Kumar Sharma, M.R. Ramesh, An investigation on tribological performance in HVOF sprayed of Amdry1371 and Amdry 1371/WC-Co coatings on Ti6Al4V, Surface and Coatings Technology, Volume 494, Part 1, 2024, 131334, ISSN 0257-8972, https://doi.org/10.1016/j.surfcoat.2024.131334.
36) Kumar S, Rajath S, Shivakumar ND, Ramesh MR, Doddamani M. 3D printing of functionally graded nanocomposites: An investigation of microstructural, rheological, and mechanical behavior. Polym Eng Sci. 2024;64(10):4677-4694. doi:10.1002/pen.26873
37) Netrananda Behera, M.R. Ramesh, M.R. Rahman, Elevated temperature wear and friction performance of WC-CoCr/Mo and WC-Co/NiCr/Mo coated Ti-6Al-4V alloy, Materials Characterization, Volume 215, 2024, 114207, ISSN 1044-5803, https://doi.org/10.1016/j.matchar.2024.114207.
38) Prakash kumar, M. R. Ramesh, Mrityunjay Doddamani & Joghee Suresh, Plant (Costus Pictus D. Don) Assisted Green Synthesis of Double Oxide Nanoparticles for Antibacterial Applications. Chemistry Africa 7, 3749–3762 (2024). https://doi.org/10.1007/s42250-024-00954-x
39) Prakash Kumar, M. R. Ramesh, Mrityunjay Doddamani, and Joghee Suresh, Green Synthesis of Fe/Ni/Cr Oxide Nanoparticles Using Costus Pictus Plant Extract: Microstructure And Biological Properties, Surface Review and Letters, Vol. 31, No. 08, 2450065 (2024), https://doi.org/10.1142/S0218625X24500653
40) Kumar, P., Ramesh, M. R, and Doddamani, M., "Fabrication and Characterization of Silicon Dioxide-Reinforced Polydimethylsiloxane Composite Coating for Corrosion Protection of Galvanized Iron," SAE Int. J. Mater. Manf. 17(4):319-328, 2024, https://doi.org/10.4271/05-17-04-0022.
41) Sumodh Kumar, Nidhi Ojha, M.R. Ramesh, A.S.S. Balan, Mrityunjay Doddamani, Shape memory behavior of 4D printed CF/PEKK high temperature composite under subsequent thermomechanical cycles, Materials Letters, Volume 366, 2024, 136567, ISSN 0167-577X, https://doi.org/10.1016/j.matlet.2024.136567.
42) Prakash Kumar, Gajanan Anne, M. R. Ramesh, Mrityunjay Doddamani & Ashwini Prabhu, Enhancing the functionality of biodegradable Mg–Zn–Mn alloys using poly(lactic) acid (PLA) coating for temporary implants. J Coat Technol Res 21, 1525–1537 (2024). https://doi.org/10.1007/s11998-024-00913-8
43) Uzwalkiran Rokkala, Srikanth Bontha, M. R. Ramesh & Vamsi Krishna Balla, Multi-step fabrication of bioactive Mg–Zn–Dy–AlO3/HA composites: exploring the synergistic effects of plasma spray and friction stir processing. J Mater Sci 59, 10998–11014 (2024). https://doi.org/10.1007/s10853-024-09830-y
44) M. R. Ramesh, Subbarao Medabalimi, R. Suresh Kumar, C. Durga Prasad & Shrishail B. Sollapur, Cyclic Oxidation and Hot-Corrosion Behavior of HVOF-Sprayed NiCrAl Coating on Industrial Boiler Tube Steels. JOM 76, 3172–3184 (2024). https://doi.org/10.1007/s11837-024-06526-1
45) Prakash kumar, M.R. Ramesh, Mrityunjay Doddamani, Joghee Suresh, Ragunath Lingaraj, Green synthesis of CuO/MgO/ZnO nanoparticles using Costus pictus leaf extract for effective antibacterial applications, Materials Letters, Volume 359, 2024, 135918, ISSN 0167-577X, https://doi.org/10.1016/j.matlet.2024.135918.
46) Rokkala, U., Suresh, G. & Ramesh, M.R. Comparative Study of Plasma Spray and Friction Stir Processing on Wear Properties of Mg-Zn-Dy Alloy. J. of Materi Eng and Perform 33, 1578–1587 (2024). https://doi.org/10.1007/s11665-023-08087-x
47) Nidhi Ojha, Sumodh Kumar, M.R. Ramesh, A.S.S. Balan, Mrityunjay Doddamani, A comprehensive characterization of 3D printable poly ether ketone ketone, Journal of the Mechanical Behavior of Biomedical Materials, Volume 150, 2024, 106243, ISSN 1751-6161, https://doi.org/10.1016/j.jmbbm.2023.106243.
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oxy-fuel spray, Surface and Coatings Technology, Volume 476, 2024, 130267, ISSN 0257-8972, https://doi.org/10.1016/j.surfcoat.2023.130267.
49) Sharanabasava, H., Prasad, C.D. & Ramesh, M.R. Characterization and Wear Behavior of NiCrMoSiC Microwave Cladding. J. of Materi Eng and Perform 33, 763–775 (2024). https://doi.org/10.1007/s11665-023-07998-z
50) T. V. Chandramouli, Sharnappa Joladarashi, M. R. Ramesh & Mohammad Rizwanur Rahman, Effect of temperature on wear and friction performance of WC-Co and Cr3C2 reinforced with 17-4PH Fe-based composite coatings. Weld World 68, 91–105 (2024). https://doi.org/10.1007/s40194-023-01628-x
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Book:

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❖ RESEARCH STUDENTS AWARDED PhD UNDER MY GUIDANCE:

1. Mr. Jegadeeswaran N. awarded PhD at NITK, Surathkal in the year 2014.
2. Mr. Somasundar B. awarded PhD at NITK, Surathkal in the year 2015.
3. Mr. Gajanan Anne awarded PhD at NITK, Surathkal in the year 2017.
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5. Mr. Mahantayya Mathapati awarded PhD at NITK, Surathkal in the year 2018
6. Mr. Nitin Gowda awarded PhD at NITK, Surathkal in the year 2018
7. Mr. Veeresh Nayak awarded PhD at NITK, Surathkal in the year 2018
8. Mr. Durga Prasad C awarded PhD at NITK, Surathkal in the year 2019
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25. Mr. Chandramouli T.V. awarded PhD at NITK, Surathkal in the year 2025
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❖ PERSONAL DETAILS

Father's Name	:	Rangarasaiah M.R.
Date of Birth	:	7th October 1977
Nationality	:	Indian
Gender	:	Male
Marital Status	:	Married
Languages Known	:	Kannada, English & Hindi

❖ ACHIEVEMENTS

- Featured in world's top 2% scientists list of Stanford University
- Established Tribology lab.
- Guided 26 PhD, 19 PG students, 10 UG Project groups.
- Handled three projects funded by DST.
- I have served as PIC-Hostels, Finance Warden and Quality monitoring warden at NITK hostels.