

Curriculum Vitae

Personal Information



Name: Dr. Ramkishor Anant

Date of Birth: April 07

Phone: +91 8791343177

E-mail: ram.met@gmail.com
ram.met@manit.ac.in



Summary

- Currently working as **Assistant Professor** at Materials & Metallurgical Engg. Department, NIT (MANIT) Bhopal, INDIA (***An Institute of National Importance***) since July 2018.
- Awarded **Ph.D degree** on 'Ultra-narrow Gap P-GMA Welding for Thick Section of 304LN Stainless Steel to HSLA Steel' from Department of Metallurgical & Materials Engineering at Indian Institute of Technology Roorkee(IIT Roorkee), India
- Studied shielding gas flow dynamics in newly developed GMA welding torch using ANSYS-CFX and also familiar with ABAQUS software.
- Filed **5 Indian patent, 01 granted** and published **23 Research Papers in reputed International journals** related to Welding & Joining, Surface Modification and Polymer Composite.
- Supervised **15 BTech** Project, **5 MTech** Thesis and **5 PhD** Thesis in progress.

Academic Details:

- **PhD**– Metallurgical & Materials Engineering (**IIT Roorkee, India**).
- **Master of Technology** - Materials and Metallurgical Engg. (**Thapar University, Patiala**).
- **Bachelor of Engineering**- Metallurgical Engg. (**N.I.T. Raipur**)

Software Proficiency

- **FEA Software** – ANSYS(14.5) Workbench, ABAQUS.
- **CAD Software** –Pro-Engineer, Catia

Patents

- 1) Gas metal arc welding torch head for ultra-narrow gap welding of thick section. (Granted- Patent No. 517902)
- 2) Ultra-narrow gap welding technology for thick section (Filed, Application No. 202521003424)
- 3) A Process for Production of Renewable Aromatics from Catalytic Cracking of Waste Cooking Oil (Disclosure Submitted to IPR Cell, MANIT Bhopal)

- 4) A Process for Catalytic cracking of waste cooking oil to Blue Hydrogen (Disclosure Submitted to IPR Cell, MANIT Bhopal)
- 5) A Process for Catalytic cracking of waste cooking oil to sustainable Aviation fuel and gasoline (Disclosure Submitted to IPR Cell, MANIT Bhopal)

Publication (Journals Published)

- 1) NK Pandey, S Kumar, **Ramkishor Anant**, TIG assisted surface modification of Ti-6Al-4V with B₄C, SiC particles, Surface Engineering, (40) 1047-1062, 2024.
- 2) Pavan Meena, **Ramkishor Anant**, Residual stress formation and distortion in austenitic AISI304 steel pipe weldment with considering latent heat using novel prescribed weld temperature, Journal of Material Engineering and Performance (Accepted- Apr- 2024)
- 3) Pavan Meena, **Ramkishor Anant**, Identification of residual stress intensity and its variation with heat source moving time in AISI304 steel pipe weldment: a significant failure investigation for structural integrity, International Journal on Interactive Design and Manufacturing (2024). <https://doi.org/10.1007/s12008-024-01754-w>.
- 4) Neetesh Pandey, Sunil Kumar, **Ramkishor Anant**, Development of Surface composite by modification of microstructure and in-situ growth of hard particles in the matrix of ferrous and non-ferrous metallic materials by TIG arcing, Journal of The Institution of Engineers (India): Series D, (2023). <https://doi.org/10.1007/s40033-023-00612-5>.
- 5) Pavan Meena, **Ramkishor Anant**, On the interaction to thermal cycle curve and numerous theories of failure criteria for weld induced residual stresses in AISI304 steel using Element Birth and Death technique, Journal of Material Engineering and Performance, 33, 2279–2297 (2024). <https://doi.org/10.1007/s11665-023-08125-8>.
- 6) P.K. Mandal, **Ramkishor Anant**, Nikhil Kumar, Effect of Scandium addition on Mechanical properties and Microstructural evolution in Al-Zn-Mg Alloys processed through the Friction Stir Processing, International Journal of Metallography, Microstructure, and Analysis, 11,158-167,2022 (<https://doi.org/10.1007/s13632-022-00834-1>).
- 7) Sudhir Kumar, Nikki Archana Barla, **Ramkishor Anant** and Kuldeep Kumar Saxena, A study on shrinkage residual stresses, microstructure and mechanical properties of ASS thick pipe welded by GMAW process, Materials Research Express, 8,116504,2021(DOI: 10.1088/2053-1591/ac33ff).
- 8) D Sharma, M Kamran, NK Paraye, **Ramkishor Anant**, Insights into the wear behaviour of electron beam melted Ti–6Al–4V alloy in the as-built and the heat-treated conditions, Journal of Manufacturing Processes 71, 669-678, 2021 (<https://doi.org/10.1016/j.jmapro.2021.09.060>)
- 9) **Ramkishor Anant**, P.K.Ghosh, Ultra-narrow Gap Dissimilar Welding of Thick Section of Austenitic Stainless Steel to HSLA Steel. International Journal of Material Processing Technology(JMPT), 239:210-221, 2017 (<https://doi.org/10.1016/j.jmatprotec.2016.08.016>)
- 10) **Ramkishor Anant**, P.K.Ghosh, Advancement in narrow gap GMA weld joint of thick section of austenitic stainless steel to HSLA steel, Materials Today: Proceedings 4,10169–10173, 2017 (<https://doi.org/10.1016/j.matpr.2017.06.342>).
- 11) **Ramkishor Anant**, Jag Parvesh Dahiya, P.K.Ghosh, Ravindra Kumar, B.P. Agarwal, SMA, TIG and P-GMA dissimilar weld joints of 304LN stainless steel to HSLA steel; Part -1: Thermal and microstructure characteristics, International Journal of Material Research Express, 5 (2018) 096502, (DOI 10.1088/2053-1591/aad403)
- 12) **Ramkishor Anant**, Jag Parvesh Dahiya, P.K.Ghosh, Ravindra Kumar, B.P. Agarwal, SMA, TIG and P-GMA dissimilar weld joints of 304LN stainless steel to HSLA steel; Part -2: Hot

- corrosion kinetics, International Journal of Material Research Express, 5 (2018) 096503, (DOI 10.1088/2053-1591/aad406)
- 13) N.A. Barla, P.K.Ghosh, Vinod Kumar, N. K.Paraye, **Ramkishor Anant**, Sourav Das, Simulated stress induced sensitization of HAZ in multipass weld of 304LN austenitic stainless steel, Journal of Manufacturing Processes, 62, 784-796, 2020,(<https://doi.org/10.1016/j.jmapro.2020.12.061>)
 - 14) Deepak Sharma, P.K.Ghosh, S.Das, **Ramkishor Anant**, Surface hardening by in-situ grown composite layer on microalloyed steel employing TIG arcing process, International Journal of Surface and Coatings Technology, 352 (2018), 144-158 (DOI:10.1016/j.surfcoat.2018.08.009)
 - 15) Deepak Sharma, P.K.Ghosh, **Ramkishor Anant** and Sudhir Kumar, Surface modification of microalloyed steel by silicon carbide reinforcement using tungsten inert gas arcing, International Journal of Material Research Express, 6(2019),036530, (DOI 10.1088/2053-1591/aaf7d8).
 - 16) Ravindra Kumar, **Ramkishor Anant**, Ankit Kumar, P.K.Ghosh, Influence of PC-GTAW Parameters on the Microstructural and Mechanical Properties of Thin AISI 1008 Steel Joints. International Journal of Material Science Engineering and Performance, 25:9:3756-3765, 2016, (<https://doi.org/10.1007/s11665-016-2211-4>)
 - 17) Deepak Sharma, P.K.Ghosh, Nilesh Kumar, **Ramkishor Anant**, Surface hardening characteristics of microalloyed steel during ex-situ and in-situ Al_2O_3 reinforcement under TIG arcing” International Journal of Surface and Coating Technology, 380(2019)125002 (<https://doi.org/10.1016/j.surfcoat.2019.125002>)
 - 18) B.P. Agarwal, Ankit Kumar, Ravindra Kumar, **Ramkishor Anant**, Sudhir Kumar, GTA Pulsed Current Welding of Thin Sheets of SS304 Producing Superior Quality of Joint at High Welding Speed" Journal of the Brazilian Society of Mechanical Sciences and Engineering, 39(11), 4667-4675, 2017(<https://doi.org/10.1007/s40430-017-0813-x>)
 - 19) P.K.Mandal, **Ramkishor Anant**, Ravindra Kumar, Rajavel Muthaiah, Effect of scandium on ageing kinetics in cast Al-Zn-Mg alloys, International Journal of Material Science Engineering-A(MSEA), 696:257-266, 2017 (<https://doi.org/10.1016/j.msea.2017.04.067>)
 - 20) Arun Kumar, **Ramkishor Anant**, Kaushal Kumar, Anticorrosive and electromagnetic shielding response of thermally stable graphene/TiO₂-epoxy nanocomposite with enhanced mechanical properties. Royal Society of Chemistry (RSC Advances), 6, 113405-113414(2016) (DOI: [10.1039/C6RA15273B](https://doi.org/10.1039/C6RA15273B))
 - 21) Kaushal Kumar, Sudhir Kumar, Arun Kumar, **Ramkishor Anant**, Ravindra Kumar “Viscoelastic and thermally stable PDMS–SiO₂ filled epoxy adhesive joint on steel substrate Polymer Composites Volume 39, Issue 8, 2018, Pages 2889-2896, (2017), DOI: 10.1002/pc.24285, (<https://doi.org/10.1002/pc.24285>)
 - 22) Lavkush, Sanjay Srivastava, Yash Jaiswal, **Ramkishor Anant**, Structural, Magnetic and Exchange Bias behavior of Nickel Base Ni₂CuCrFeAl_x (x=0.5, 1.0, 1.5 and 2.5) High Entropy Alloy, International Journal of Applied Physics, 29, pages 2256–2273 , 2020 (DOI: [10.1007/s11665-020-04791-0](https://doi.org/10.1007/s11665-020-04791-0))
 - 23) Kamal Preet Kaur, **Ramkishor Anant**, O.P. Pandey, Tribological Behaviour of SiC Particle Reinforced Al–Si Alloy. International Journal of Tribology Letters, 44:41, 2011 (<https://doi.org/10.1007/s11249-011-9819-1>).

Book Chapters

- 1) Pavan Meena, **Ramkishor Anant**, Nilesh Kumar Paraye, Advanced Welding Techniques: Current Trends and Future Perspectives, 3 Heat Physics Generation of the Arc and Welding Process, 9781003435884, CRC Press, 2024.
- 2) Nilesh Kumar Paraye, **Ramkishor Anant**, Himanshu Vashishtha, Advanced Welding Techniques: Current Trends and Future Perspectives, Role of Filler Materials on Welding Performance, 9781003435884, CRC Press, 2024.
- 3) **Ramkishor Anant**, Abhishek Tiwari, Suresh Sundaramurthy, Vaibhav Vijay, Gaurav Singh, Two-Dimensional Nanomaterials-Based Polymer Nanocomposites: Processing, Properties and Applications, Synthesis Approaches, Designs, and Processing Methods of Two-Dimensional Nanomaterials, 9781119905110, WILEY- Scrivener Publishing LLC, 2024.
- 4) Himanshi Bansal, Suresh Sundaramurthy, Surinder Singh, S Arisutha, **Ramkishor Anant**, SK Mehta, Polymer Nanocomposite Films and Coatings, Environmental concern, health and safety aspects of polymer nanocomposite films and coatings, 978-0-443-19139-8, Woodhead Publishing, 2024.
- 5) Pavan Meena,, Ansari Mohd, Farhan, **Ramkishor Anant**, and Shaik Himam Saheb, Advancements in Welding Technologies, Automation in the welding industry, ISBN No. 9781394172412, Scrivener publishing WILEY, 2024.
- 6) Pavan Meena and **Ramkishor Anant**, Numerical Investigation of Weld Induced Residual Stress State Field for Improved Structural Integrity in AISC Power Plant Applications, Advances in Materials Processing: Challenges and Opportunities, ISBN No. 978-981-99-1971-0, Springer Nature Singapore, 2023.
- 7) Guru Prakash, **Ramkishor Anant**, Rahul Gupta, Amit Bansal “Microwave Welding as an Alternative Nonconventional Welding Technique, Advances in Microwave Processing for Engineering Materials, ISBN No. 9781003248743, Taylor & Francis Group, 2022.
- 8) B. P. Agrawal and **Ramkishor Anant**, Hot Corrosion Study on Dissimilar Weld Joints of Austenitic Stainless Steel and High Strength Low Alloy Steel, Advances in Industrial and Production Engineering, ISBN No. 978-981-33-4320-7, Springer Singapore, 2021.

Publication(International Conferences)

- 1) **Ramkishor Anant** , Development of Surface composite by modification of microstructure and in-situ growth of hard particles in the matrix of ferrous and non-ferrous metallic materials by TIG arcing, The 76th IIW Annual Assembly and International Conference on Welding and Joining, Singapore, 2023.
- 2) Meena P, **Anant R**. Numerical Investigation of Weld Induced Residual Stress State Field for Improved Structural Integrity in AISC Power Plant Applications. In International Conference on Advances in Materials Processing: Challenges and Opportunities 2022 Oct 17 (pp. 147-152) at IIT Roorkee INDIA. Singapore: Springer Nature Singapore.
- 3) Meena P, **Anant R**. The critical examination of residual stress induced in dissimilar T/P92 and AISI304 steel weldment: Important for renewable energy based ultra-supercritical power plants. In International Conference on Sustainable Energy and Environment (ICSEE 2024), 23rd -25th February 2024 at Maulana Azad National Institute of Technology (MANIT) Bhopal.

- 4) Meena P, **Anant R.** Critical interaction on residual stress formation in dissimilar T/P92 and AISI304 steel weldment using novel prescribed weld temperature in National Conference on Advanced & Emerging Materials for Technological Applications (AEMTA-2024), Department of Physics, Mechanical Engineering & ECE Sant Longowal Institute of Engineering and Technology Longowal, Distt. Sangrur-148106 (Punjab) in collaboration with IIT Jammu, NIT Delhi & IAHT Ludhiana.
- 5) Ansari Mohd. Farhan, **Anant R.** In-situ Development of high entropy alloy on stainless steel by TIG Arcing. 39th M.P Young Scientist Congress 2024 at MIT Gwalior INDIA
- 6) Khan R, **Anant R.** Advancements in green hydrogen production technologies and its challenges: a comprehensive review. In International Conference on Sustainable Energy and Environment (ICSEE 2024), 23rd -25th February 2024 at Maulana Azad National Institute of Technology (MANIT) Bhopal.
- 7) **Ramkishor Anant**, P.K.Ghosh, Experimental Investigation On Transverse Shrinkage Stress And Distortion Of Extra Narrow And Conventional Gap Dissimilar Butt Joint Of Austenitic Stainless Steel To Low Alloy Steel. International Conference on Mining, Material and Metallurgical Engineering (MMME'2014)- Prague(Czech Republic).
- 8) **Ramkishor Anant**, P.K.Ghosh, Effect of mass deposition on residual stress of newly developed ultra-narrow gap multipass PC-GMA weld for thick section'71th IIW Annual Assembly and International Conference (IIW-2018), Bali (Indonesia).
- 9) **Ramkishor Anant**, P.K.Ghosh, 'Advance technique to produce narrowest gap GMA weld joint of thick sections'70th IIW Annual Assembly and International Conference (IIW- 2017), Shanghai (China).
- 10) **Ramkishor Anant**, R.Sunil Kumar, Nilesh Dorkar,Joining of Dissimilar Metal Powders by Sinter Forging Technique,International Conference on Powder Metallurgical Association of India (PMAI-2017), New Delhi (India).
- 11) **Ramkishor Anant**, P.K.Ghosh,Advantage of narrow gap welding of dissimilar weld joint of thick section of austenitic stainless steel to HSLA steel. 10thAnnual Assembly and International Conference on Trends in welding research (TWR-2016)- Tokyo (Japan).
- 12) **Ramkishor Anant**, P.K.Ghosh,Advance welding process and procedure for extra narrow gap dissimilar welding of thick section of austenitic stainless steel to HSLA steel. 68thIIW Annual Assembly and International Conference (IIW-2015) Helsinki(Finland).
- 13) **Ramkishor Anant**, P.K.Ghosh, Metallurgical and Thermal Analysis of Dissimilar Weld Joint of Austenitic Stainless steel to Low Alloy Steel. International Conference on Processing and Fabrication of Advanced Materials (PFAM-XXII' 2013) –Singapore.
- 14) **Ramkishor Anant**, P.K.Ghosh, Advancement in narrow gap GMA weld joint of thick section of austenitic stainless steel to HSLA steel, International Conference on Recent Trends in Engineering and Material Sciences (ICEMS-2016), JNU Jaipur, (India).
- 15) **Ramkishor Anant**, P.K.Ghosh, Mechanical Properties of Extra Narrow And Conventional Gap Dissimilar Butt Joint Of Austenitic Stainless Steel To High Strength Low Alloy Steel, International Conference on Advancement and Futuristic Trend in Mechanical and Materials Engineering (AFTMME'14) -Jalandhar(India).

Supervision of PhD Thesis

- 1) Pavan Kumar “Thermal and Structural analysis of Dissimilar weld joint of austenitic stainless steel to P91 steel” **(In Progress)**.
- 2) Mohd. Farhan “Surface hardening and growth of high and medium entropy alloy on metals by arcing” **(In Progress)**.
- 3) Neetesh Kumar Pandey “mechanical characterization and surface improvement of metal matrix surface composite by TIG arcing” **(Submitted)**.
- 4) Rehan Khan “Green Hydrogen Production” **(In Progress)**.

Supervision of MTech Thesis

- 1) Shashwat Budholia “Development of high entropy alloy coating on stainless steel by TIG arcing” **(2023)**.
- 2) Hiyasmita Mahanta “In-situ surface modification of Ti-6Al-4V (Ti64) by TIG arcing” **(2022)**.
- 3) Ankit Dixit “Ex-situ surface modification of Ti-6Al-4V (Ti64) by TIG arcing” **(2022)**.
- 4) Rachit Trivedi “Analytical studies on thermal behaviour of weld pool on pulsed current gas tungsten arc welding process” **(2021)**.

Research contribution

- 1) **Project title:** Investigation on Advanced Welding Technique to Improve Properties of Dissimilar Weld Joint of Austenitic Stainless Steel to High Strength Low Alloy Steel
 - **Organization:** Defence Metallurgical Research Laboratory (DMRL), DRDO, New-delhi.
 - **Duration:** 2010-2013.
 - **Budget:** Rs.36.00 Lakh.
 - **Coordinator:** Prof. P.K.Ghosh, Department of Metallurgical & Materials engineering, IIT Roorkee.
 - **Team:** Prof. P.K.Ghosh, Ramkishor Anant.
- 2) **Project title:** To study application of pulse current gas tungsten arcing process in surfaces processing of steels for desired properties.
 - **Organization:** Council of Scientific and Industrial Research (CSIR), New Delhi, India
 - **Duration:** 2013-2016.
 - **Budget:** Rs.15.00 Lakh.
 - **Coordinator:** Prof. P.K.Ghosh, Department of Metallurgical & Materials Engineering, IIT Roorkee.
 - **Team:** Prof. P.K.Ghosh, Deepak Kumar, Ramkishor Anant, Sudhir Kumar.
- 3) **Project title:** Optimisation of ultrasonic dual mixing for homogeneous distribution of inorganic nano particles in epoxy based adhesive affecting its thermal and mechanical properties.
 - **Organization:** Department of Science and Technology (DST), New Delhi, India
 - **Duration:** 2012-2015
 - **Budget:** Rs.35.00 Lakh.

- **Coordinator:** Prof. P.K.Ghosh, Department of Metallurgical & Materials engineering, IIT Roorkee.
- **Team:** Prof. P.K.Ghosh, Kaushal Kumar, Ramkishor Anant, Arun Kumar.

Academic Achievements and Membership

- The Recipient of the travel grant from Department of Science and Technology(DST), New Delhi, to visit Prague, Czech Republic for international conference on mining materials and metallurgical engineering(MMME'14).
- The Recipient of the travel grant from Council of Scientific & Industrial Research(CSIR), New Delhi, to visit Shanghai, China for 70th International Institute of Welding (IIW) Annual Assembly & International Conference IIW-2017).
- Design and Developed a New GMA Torch Nozzle, and Filed a Indian Patent.
- Reviewer of a Welding Research Paper of Journal of Materials Engineering and Performance, Materials and Metallurgical Transaction-B, Metals and Materials International.
- Life Time Member of Material Research Society of India, India
- Member of American Welding Society (AWS).
- Life Member of Indian Institute Welding(IIW).
- Life Member of Indian Institute Metals(IIM).

Key Attitude Areas

- Independent researcher & can handle projects
- Patience in work, Problem solving attitude & Strategic thinking
- Good presentation skills & good command over English.

Research Interest

- Welding & Joining of Materials, Modelling and Simulation
- Surface modification of Metals
- Friction Stir Processing and Friction Stir Welding
- Adhesive joining of metals
- Nano filler polymer composite
- Catalysts for Hydrogen & Aviation Fuel generation
- Renewable energy and sustainable development

References

Prof. P.K.Ghosh (Ph.D. Supervisor)
 (Former Deputy Director & Officiating Director)
 Department of Metallurgical & Materials Engineering,
 Indian Institute of Technology Roorkee, Roorkee, India
 Tel: +91 9412073413
 E-mail: prakgfmt@gmail.com

Declaration

I, Ramkishor Anant, hereby solemnly declare that the information furnished above is true and correct to the best of my knowledge and belief, and that no related information is concealed.

Date- March-2025

Place- MANIT Bhopal, India



Dr. Ramkishor Anant
Assistant Professor
MANIT Bhopal, (INDIA)