ROYAL MADAN

OBJECTIVE

To gain an academic or research position in an esteem institution that will give me the chance to share and enhance my knowledge and facilitate me to do research for contributing in an institutional success.

EDUCATION

Doctor of Philosophy, Department of Mechanical Engineering, National Institute of Technology Raipur (C.G), India (2017 – Present)

Title of Thesis: Material modeling and limit analysis of functionally graded rotating disk

M Tech. (Machine Design), Department of Mechanical Engineering, Guru Ghasidas Vishwavidyalaya (GGV) Bilaspur, India (2014-2016)

GGV (A Central University)-Marks 8.69 [CGPA], Division I

Title of Thesis: Free vibration and displacement analysis of honeycomb sandwich beam by varying honeycomb core cell size using FEM

B Tech. (Mechanical Engineering), Department of Mechanical Engineering, CSVTU, Bhilai (C.G), India (2009-2013)

CSVTU Bhilai- Marks- 80.40%, Division I

AISSCE (10+2), Gurunanak English Senior secondary school, Bhilai (C.G)

CBSE- Marks 72%, Division I

WORK EXPERIENCE

Rungta College of Engineering and Technology, Bhilai, C.G, Assistant Professor (July, 2016-July'17)

Bharti College of Engineering and Technology, Durg (C.G), Lecturer (July, 2013-July'14)

CONTACT

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LINKS

https://www.researchgate.net/profile/Royal-Madan

https://scholar.google.com/citations?user=Rez212gAAAAJ&hl=en

https://www.linkedin.com/in/royal-madan-54034b74/

https://publons.com/researcher/4237644/royal-madan/

SKILLS

ANSYS
MATLAB
FORTRAN
FUSION 360
SOLID WORKS
POWDER METALLURGY
MATERIAL CHARACTERIZATION
MATERIAL MODELING

ONLINE CERTIFICATIONS

- **Materials Science: 10 Things Every Engineer Should Know** by University of California, Davis and offered through Coursera
- **Introduction to Programming with MATLAB** by Vanderbilt University and offered through Coursera.
- **Fundamentals of waves and vibrations** by École Polytechnique and offered through Coursera.
- **Simulation Analysis for Mechanical Engineers with Autodesk Fusion 360** by Autodesk and offered through Coursera.
- Solid works design courses from Tata technologies.
- **A Hands-on Introduction to Engineering Simulation** a course of study offered by CornellX, an online learning initiative of Cornell University through edX
- NPTEL online certification course on "**Theory of elasticity**" (Jul-Oct'2018)
- NPTEL online certification course on "**Introduction to composites**" (Jan-April'18)
- NPTEL certification course on "**Design and analysis of experiments**" (Jan-April'18)
- NPTEL online certification course on "**Manufacturing of composites**" (Jul-Sep.'17)
- NPTEL online certification course on "**Principles of Vibration control**"(Feb-Mar'17)
- NPTEL online certification course on "**Developing Soft Skill and personality**" (2016)
- A certification course on **ANSYS** (Analysis software) from DCS, Bhilai (C.G).

SUMMER INTERNSHIP AND VOCATIONAL TRAINING

1. Knowledge Incubation for TEQIP summer internship form June 1, 2018 to June 30, 2018 at IIT Kanpur.
2. Summer intern at National Institute of Science and Technology, Berhampur,Odisha. Research area includes: 1. Preparation of hybrid Nano-composites. 2. Structural analysis of honeycomb sandwich beam using finite element method.
3. Vocational training in Bhilai Steel Plant, Bhilai (C.G) from 23 May-4 June, 2011.
4. Vocational training in Beekay Engineering Corporation, Bhilai (C.G) from 1 June-30 June, 2012.

PUBLICATIONS

A: JOURNALS

1. **Madan, R.**, Hadji, L., Bhowmick, S. and Tounsi, A. (2022) "Limit elastic speed analysis of rotating porous annulus functionally graded disks" Steel and Composite Structures, Vol. 42, No. 3, 375-388. (IF-5.733)
2. **Madan, R.**, Bhowmick, S., (2022) "Material modelling and limit angular speed analysis of porous trigonometric functionally graded rotating disk" Advances in Materials and Processing Technologies ,1–13.
3. Hadji, L., **Madan, R.**, Bhowmick, S. and Tounsi, A. (2021). "A n-order refined theory for free vibration of sandwich beams with functionally graded porous layers", *Structural Engineering and Mechanics,* Vol. 79, No. 3, 279-288. (IF- 3.524)
4. **Madan, R.** and Bhowmick, S. (2021b), "A numerical solution to thermo-mechanical behavior of temperature dependent rotating functionally graded annulus disks", *Aircraft Engineering and Aerospace Technology*, Vol. ahead-of-print No. ahead-of-print, available. (IF- 0.975)
5. **Madan, R.** and Bhowmick, S. (2021a), "Limit Elastic Analysis of Functionally Graded Rotating Disks Under Thermo-Mechanical Loading", *International Journal of Applied Mechanics*, Vol. 13, No. 03, 2150033. (IF- 3.224)
6. **Madan, R**. and Bhowmick, S. (2020), "A review on application of FGM fabricated using solid-state processes", *Advances in Materials and Processing Technologies*, Vol. 6 No. 3, pp. 608–619.
7. **Madan, R.**, Bhowmick, S., (2021). Modeling of functionally graded materials to estimate effective thermo-mechanical properties. WJE ahead-of-print. https://doi.org/10.1108/WJE-09-2020-0445
8. **Madan, R**., Bhowmick, S. and Saha, K. (2020), "A study based on stress-strain transfer ratio calculation using Halpin-Tsai and MROM material model for limit elastic analysis of metal matrix FG rotating disk", *FME Transactions*, Vol. 48 No. 2, pp. 204–210.
9. **Madan, R**., Bhowmick, S. and Saha, K. (2020.). "Limit elastic speed analysis of L-FGM rotating disk using Halpin-Tsai and MROM", AIP Conf. Proc. 2273, 050013-1–050013-6.
10. **Madan, R**., Saha, K. and Bhowmick, S. (2020). "Limit speeds and stresses in power law functionally graded rotating disks", Advances in Materials Research, *Vol*. *9*, *No*. *2, 115-131.*
11. **Madan, R**., Saha, K.N. and Bhowmick, S. (2020), "Limit Elastic Analysis of FG Ceramic Rotating Disk on the Basis of Effective Mechanical Properties", *Materials Science Forum*, Vol. 978, pp. 470–476.
12. **Madan, R**., Saha, K. and Bhowmick, S. (2019b), "Limit elastic analysis of rotating annular disks having sigmoid-FGM composition based on MROM", *World Journal of Engineering*, Vol. 16 No. 6, pp. 806–813.

13. **Madan, R**., Saha, K. and Bhowmick, S. (2019a), "Limit Elastic Analysis of E-FGM Rotating Disk with Temperature Dependent Mechanical Properties", *Mathematical Modelling of Engineering Problems*, Vol. 6 No. 4, pp. 634–640.
14. **Madan, R**., Bhowmick, S. and Saha, K. (2019), "Limit angular speed of L-FGM rotating disk for both temperature dependent and temperature independent mechanical properties", *Materials Today: Proceedings*, Vol. 18, pp. 2366–2373.
15. **Madan, R**. (2018), "Stress and deformation of functionally graded rotating disk based on modified rule of mixture", *Materials Today*: *Proceedings*. Volume 5, Issue 9, Part 3, 2018, Pages 17778-17785.

📖 B: BOOK CHAPTER

16. Biradar, A., Chandraker, A., **Madan, R.**, Sanyal, S. and Bhowmick, S. (2020), "Effect of Attack Angle on Lift and Drag of a Bio-Inspired Corrugated Aerofoil", in Deepak, Bbvl., Parhi, D. and Jena, P.C. (Eds.), Innovative Product Design and Intelligent Manufacturing Systems, Springer Singapore, Singapore, pp. 261–268.

C: CONFERENCES

17. **Royal Madan**, Shubhankar Bhowmick, KashiNath Saha. Stress and deformation of functionally graded rotating disk based on modified rule of mixture. ICMPC-2018. Materials Today: Proceedings. Volume 5, Issue 9, Part 3, 2018, Pages 17778-17785.
18. **Royal Madan**, KashiNath Saha, Shubhankar Bhowmick. Limit Elastic Analysis of FG Ceramic Rotating Disk on the basis of Effective Mechanical Properties.ICPCM-2018. Materials Science Forum.
19. **Royal Madan**, Shubhankar Bhowmick, KashiNath Saha. Limit angular speed of L-FGM rotating disk for both temperature dependent and temperature independent mechanical properties. ICMPC-2019. Materials Today: Proceedings.
20. **Royal Madan**, Shubhankar Bhowmick, KashiNath Saha. Limit Elastic Speed Analysis of L-FGM rotating disk with Temperature Dependent Mechanical Properties. ICMMRE-2019
21. **Royal Madan**, Shubhankar Bhowmick, A review on Application of FGM Fabricated using solid state processes. ICMPC-2020.
22. **Royal Madan**, Shubhankar Bhowmick, KashiNath Saha. Stress analysis of rotating disk made up of isotropic and functionally graded material Indian power station 2020 by NTPC limited.

23. **Royal Madan**, Santosh Kumar Sahu, R.K Bhushan, P S Rama Sreekanth "Numerical investigation into effect of cell size of honeycomb core on the free vibration behaviour of polymer nano-composite sandwich beams"Sixth international congress on computational mechanics and simulation, ,IIT Bombay,27th June-1st July,2016,pp.1325-1328.
24. Veena Madaan, **Royal Madan,** "Big Data Analytics To Empower Rural Masses Of India-A Step Towards Digital India Program" published in the proceedings of National Conference on Recent challenges in Science, Technology and Management for National Development, BIT, Durg, Chhattisgarh,28th March, pp.224-230.
25. **Royal Madan**, Rajesh Kumar Bhushan, "Contact technology in finite element analysis using ANSYS", published in the proceedings of National Conference on Emerging Trends in Science,Technology and Management for National Development, BIT, Durg, Chhattisgarh,January 29-30, 2016,pp. 250-259.
26. **Royal Madan**, Santosh Kumar Sahu, R.K Bhushan, P S Rama Sreekanth "Vibration response analysis of honeycomb sandwich beam on varying cell shape using finite element method", Published abstract in International conference on frontiers in material science and technology, National Institute of Science and Technology, Berhampur, Odisha, December 10-12, 2015, pp.183.

PROFESSIONAL ACTIVITIES

- Reviewer of ***International Journal of Applied Mechanics***, World Scientific Publishing
- Reviewer of ***World Journal of Engineering***, Emerald Publishing Limited.
- Reviewer of ***Applied Composite Materials,*** Springer publishing.
- Reviewer of ***Advances in Materials and Processing Technologies,*** Taylor & Francis
- Reviewer of ***Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering,*** Sage publishing.

ACHIEVEMENTS

- Best paper award for paper in ICMMRE, 2019 Organized by Department of Mechanical Engineering, SMIT Majitar, Sikkim.
- Qualified GATE 2016, GATE 2015 and GATE 2014.

FACULTY DEVELOPMENT PROGRAMME/ STTP'S

- Five-day Virtual FDP organised by IQAC of Jain College in collaboration with KSCST on "*Changing Dimensions of IPR in India - An Intellectual Deliberation"* from 12th to 17th August 2021 at Jain College, Bengaluru - 560 004.
- AICTE AQIS Sponsored STTP on "*Advances in Additive Manufacturing*" organized by Siemens Centre of Excellence for Digital Manufacturing and Robotics under NAFETIC at Yeshwantrao Chavan College of Engineering, Nagpur, conducted between 24th to 29th of August, 2020
- One week FDP on "*Latex*" by IIT Bombay, from July 06,2020 to July 12,2020.
- STTP on "*Multi objective optimization methods for engineering and scientific applications*" by SSGI, Bhilai from 26-31 October, 2020 "
- One Week Online FDP on "*A Hands on Practice of Software Tools in Mechanical Engineering*" From 29-06-2020 to 04-07-2020.Organized by Department of Mechanical Engineering, Vaageswari college of engineering, karimnagar, Telangana.
- AICTE Sponsored STTP on "*Composite materials: micro to nano – fabrication characterization and modelling including additive manufacturing*" organized by Rajalakshmi Engineering College (Autonomous), Chennai, from 31st August 2020 to 05th September 2020.
- Online STTP on Advances in material manufacturing processes and properties by MANIT, Jaipur from 06-10 July, 2020.
- A three-day FDP on " *Applications of Mathematical Modelling in Science and Engineering* " held from 25/07/2020 to 27/07/2020 at "Vivekananda Institute of Technology, Jaipur
- One-week FDP on "*Advanced materials and manufacturing*" from 29/06/2020 to 03/07/2020 organized by Department of Mechanical Engineering, Kakatiya Institute of Technology and Science, Warangal, Telangana – 506015
- AICTE Training and Learning (ATAL) Academy FDP on "*Robotics*" from 03-02-2020 to 07-02-2020 at National Institute of Technology (NIT) Raipur.
- AICTE Training and Learning (ATAL) Academy FDP on "*3D Printing and Design*" from 02-12-2019 to 06-12-2019 at NIT Raipur.
- Attended a faculty development programme on "*FEA & CFD Using Ansys 14 & Abaqus*" From 16th -29th December, 2013 at CSIT, Durg (C.G) Sponsored by AICTE, New Delhi.

- Attended a faculty Development Programme on "*Entrepreneurship Development*" From 05th -17th August, 2013 organized by National Institute for Micro, small and Medium Enterprises.

MEMBERSHIP OF OTHER INSTITUTIONS/PROFESSIONAL SOCIETIES

- Life Member of The Indian Institute of Metals.
- Life Member of Institution of Engineers.
- Life Member of Indian Society of Theoretical and Applied Mechanics

PERSONAL INFORMATION

Name	: Royal Madan
Father's Name	: Pravesh Kumar Madan
Date of Birth	: 02-05-1990

DECLARATION

I, ROYAL MADAN, hereby declare that the information contained herein is true and correct to the best of my knowledge and belief.

Royal Madan