




# P.E.S. College of Engineering, Mandya - 571401

(An Autonomous Institution, affiliated to VTU, Belagavi)

## Faculty Profile

### General

Name	<b>Dr.S.GHANARAJA</b>	
Designation,	<i>Professor</i>	
Department & Affiliated Institution	<i>Department of Mechanical Engineering P.E.S College of Engineering Mandya – 571 401</i>	
Research Area	<i>Nano-Composites</i>	
Contact Number	<i>+91 9449149167</i>	
Email ID	<i><a href="mailto:ghanaraja08@gmail.com">ghanaraja08@gmail.com</a>/ <a href="mailto:ghanarajas@pesce.ac.in">ghanarajas@pesce.ac.in</a></i>	

### Academic Profile

#### Educational Qualifications

Degree	College	University	Year of Passing	% ge	Class
<i>Ph. D</i>	<i>IIT, ROORKEE</i>	<i>IIT, ROORKEE</i>	<i>2011</i>	<i>Awarded</i>	
<i>M. Tech</i>	<i>SJCE, Mysore</i>	<i>VTU Belgaum</i>	<i>2000</i>	<i>68</i>	<i>First Class</i>
<i>B. E.,</i>	<i>SJCE, Mysore</i>	<i>University of Mysore</i>	<i>1996</i>	<i>58</i>	<i>Second Class</i>

#### Professional Experience

Organization and Department	Designation	Period	Total Experience
<i>P.E.S. College of Engineering, Mandya, Dept. of Mechanical Engg</i>	<i>Assistant Professor</i>	<i>2003 to 2006</i>	<i>3 Years</i>
	<i>Associate professor</i>	<i>2006 to 2011</i>	<i>5 Years</i>
	<i>Professor and Head</i>	<i>2020- 2022</i>	<i>2 Years</i>
	<i>Professor</i>	<i>2011 – Till date</i>	<i>11 Years</i>

### Reports on Academic and Research Activities

#### Academic Activities

Teaching Records (Details of courses taught)	<u>Undergraduate</u> Elements of Mechanical Engineering, Non Traditional Machining, Kinematics of Machines, Dynamics of Machinery, Computer Aided Engineering Drawing and Manufacturing process -1 & 2 <u>Post Graduate (M. Tech):</u> Advanced Materials Technology, Newer Machining Techniques, Nano-Technology.
--	--

#### Research Guidance (Candidates Awarded / Pursuing Ph.D / M.Sc., Engg./ M.Phil)

Degree	Ph. D.	M Tech	M.Phil
Awarded	<i>02</i>	<i>22</i>	<i>Nil</i>
Pursuing	<i>03</i>	<i>-</i>	<i>Nil</i>

#### Sponsored Research Projects (List of Projects taken up /completed and funds receiver & funding sources)

Project Title	Project Funded by	Grants Sanctioned	Grants Received
<i>Development of functionally graded hybrid fiber reinforced green composite sheets for rural housing applications.</i>	<i>VTU GRANT</i>	<i>10 LAKHS</i>	

#### Research Publications in Refereed Journals and Conferences/Symposia

Number of Publications in	National	International
Journals	<i>01</i>	<i>34</i>
Conferences/Symposia	<i>03</i>	<i>34</i>

#### Other Important Responsibilities Held in the College

1. Worked as Secretary M.E.A Library for Seven years	6. Working as member for board of Studies and board of Examiner (PG and UG) Department of Mechanical Engineering
2. Worked as Research Coordinator for Mechanical Engineering Department	7. Worked as HOD of Mechanical Engineering Department for 2years (01/06/2020 to 01/06/2022.
3. Academic Council Member (2019-2021)	8. VTU LIC Committee member
4. Participated in the International conference as a Session Chair	9. Served as valued reviewer for International journal and conference
5. Conducted 1 week FDP.	

## Research Publications

### Publications

#### International Conference:

1. Ramesh Kurbet, Doddaswamy V, Amruth C M, Mohammed Rafi H Kerur and Ghanaraja S, “Frequency Response Analysis of Spur Gear pair using FEA”, Proceedings of International Conference on Advances in Mechanical Engineering, *Transcending Boundaries*, MATPR-D-21-06562, SI: ICAMET-2021.
2. Dr. Ghanaraja S, Sukruth Sagar B P, Kiranakumara K M, Madhu G, “Fabrication and Study of Mechanical Properties of Al 6061-B<sub>4</sub>C Metal Matrix Composites”, 2<sup>ND</sup> International conference on Advances in Mechanical Engineering Sciences (ICAMES-2K20), P.E.S, College of Engineering (PESCE) Mandya, 28<sup>th</sup> to 29<sup>th</sup> February 2020.
3. Ravi kumar K S, Ghanaraja. S, Ramesh M R., “Generation and characterization of Nano-Alumina powder by milling Al and MnO<sub>2</sub> powder mixture”, accepted for oral presentation at International conference on Advance Trends in Mechanical and Aerospace Engineering (ATMA-2019) to be held at Dayananda Sagar University, Bangalore-560068, India on 7<sup>th</sup> to 9<sup>th</sup> November 2019.
4. Ghanaraja, S, Subrata Ray, Nath. S K, “Comparative Analysis of the Particle Size on the Porosity and Tensile Properties of Aluminium based Metal Matrix Nano-Composites”, accepted for oral presentation at International Conference on Advance Trends in Mechanical and Aerospace Engineering (ATMA-2019) to be held at Dayananda Sagar University, Bangalore-560068, India on 7<sup>th</sup> to 9<sup>th</sup> November 2019.
5. B. M. Madhusudan, H. P. Raju, S. Ghanaraja, and Sudhakar G.N., “Study of Microstructure and Mechanical Properties of Ball milled Nano SiC Reinforced Aluminium Matrix composites”, International Conference on Synthesis, characterization and application of Nanomaterials, The Institute of Engineers (India), West Bengal State Centre 8, Gokhale Road Kolkata 700020, INDIA November 1 -2, 2019.
6. Ravi kumar K. S. and Ghanaraja, S., “Synthesis and characterization of Nano Al<sub>2</sub>O<sub>3</sub> Powder by Al and MnO<sub>2</sub> Powder mixture”, International Conference on Smart and Sustainable Developments in Materials, Manufacturing and Energy (SME 2019), N.M.A.M.I.T-Nitte, Karkala Taluk, Udupi District, Karnataka State, INDIA on 23<sup>rd</sup> and 24<sup>th</sup> May 2019.
7. Ghanaraja, S., Subrata Ray., Nath, S K., “Particle size Effect on Porosity and Tensile Properties of Aluminium based Metal Matrix Nano-Composites”, International Conference on Smart and Sustainable Developments in Materials, Manufacturing and Energy (SME 2019), N.M.A.M.I.T-Nitte, Karkala Taluk, Udupi District, Karnataka State, INDIA on 23<sup>rd</sup> and 24<sup>th</sup> May 2019.
8. Ghanaraja S, Madhu R, Ravikumar K S, Likith P, “Synthesis and Mechanical Property Evaluation of Hot Forged Aluminium Alloy Reinforced with Nano Alumina”, International conference on Green Trends In Mechanical Engineering Sciences (GTMES-2018), October 3<sup>th</sup> to 5<sup>th</sup> 2018, Malnad College of Engineering, Hassan, Karnataka, India.

9. S. Ghanaraja, Syed Imran Ali, K. S. Ravikumar, and P. Likith, "Characterization and study of mechanical and tribological properties on titanium dioxide (TiO<sub>2</sub>) coated 304L stainless steel", International Conference on Design, Materials & Manufacture IcDeM 2018, Department of Mechanical Engineering National Institute of Technology Karnataka, Surathkal Mangalore DK-575025, Karnataka State, INDIA January 29 -31, 2018.
10. S. Ghanaraja, B. L. Gireesha, K. S. Ravi kumar, and P. Likith, "Effect of forging on mechanical properties of rice husk ash-silicon carbide reinforced Al1100 hybrid composites", International Conference on Design, Materials & Manufacture IcDeM 2018, Department of Mechanical Engineering National Institute of Technology Karnataka, Surathkal Mangalore DK-575025, Karnataka State, INDIA January 29-31, 2018.
11. B. M. Madhusudan, H. P. Raju, and S. Ghanaraja., "Micro structural characterization and analysis of ball milled silicon carbide", International Conference on Design, Materials & Manufacture IcDeM 2018, Department of Mechanical Engineering National Institute of Technology Karnataka, Surathkal Mangalore DK-575025, Karnataka State, INDIA January 29 -31, 2018.
12. Ghanaraja S, Ravi kumar K S and Likith P, "Synthesis and Characterization of Tribological Properties of Aluminium Alloy Reinforced with Zirconium Dioxide Composite", International Conference on Emerging Trends in Mechanical Engineering ETME-2017, Organized by Department of Mechanical Engineering, Cauvery Institute of Technology Mandya, 27-28<sup>th</sup> December 2017.
13. Ghanaraja S, Gireesha B L, Ravikumar K S and Madhusudan B M, "Production and Characterization of Rice Husk Ash-Silicon Carbide Reinforced Al-1100 Aluminium Alloy Hybrid Composites", International Conference on Advances in Mechanical Engineering and Sciences (ICAMES-17) Organized by Department of Mechanical Engineering Sciences, PES College of Engineering MANDYA-571401, 21<sup>st</sup>-22<sup>nd</sup> April 2017.
14. Gangadhara gowda.C.J., Ghanaraja.S. and Mohamed Maaz Rehan, "Analysis of Heat Transfer Through Heat Exchanger Using Al<sub>2</sub>O<sub>3</sub> Nano fluid at Different Concentrations", International Conference on Advances in Mechanical Engineering and Sciences (ICAMES-17) Organized by Department of Mechanical Engineering Sciences, P E S College of Engineering MANDYA-571401, 21<sup>st</sup>-22<sup>nd</sup> April 2017.
15. . Gangadhara Gowda. C.J, Ghanaraja.S. and Kiran Kumar.H.R, "Study on Heat Transfer by Using Nano Copper oxide for Different Fluids and Concentrations in a Heat Exchanger", International Conference on Advances in Mechanical Engineering and Sciences (ICAMES-17) Organized by Department of Mechanical Engineering Sciences, PES College of Engineering MANDYA-571401, 21<sup>st</sup>-22<sup>nd</sup> April 2017.
16. Ghanaraja.S., Ravi kumar K.S. and Madhusudan B.M, "Dry Sliding Wear Behavior of Al 1100/ZrO<sub>2</sub> Metal Matrix Composites", 6<sup>th</sup> International and 27<sup>th</sup> All India Manufacturing Technology, Design and Research Conference (AIMTDR-2016), December 16-18, 2016 at college of Engineering , Pune, Maharashtra, India.
17. S. Ghanaraja, Subrata Ray and S. K. Nath, "Comparative Study of Tensile Properties of Cast and Hot Forged Alumina Nano-Particle Reinforced Composites," 18<sup>th</sup> International Conference on Textile Composites, Materials and Engineering, New York, USA, June, 6-7, 2016.

18. Ghanaraja. S, Rajashekar. H, Madhusudana. B M and Ravi kumar. K S, "Synthesis and study of Microstructure and Mechanical Properties of Cast Al 1100 (Mg)-SiC Composites", International Conference on Advanced Materials and Applications ICAMA-2016, Centre of Excellence in Advanced Materials Research, Department of Mechanical Engineering, BMS College of Engineering, Bengaluru, 15<sup>th</sup>-17<sup>th</sup> June, 2016.
19. Ghanaraja.S, Vinuth Kumar.K.L., Ravikumar.K.S. and Madhusudan.B.M., "Mechanical Properties of Al<sub>2</sub>O<sub>3</sub> Reinforced Cast and Hot Extruded Al based Metal Matrix Composites", 5<sup>th</sup> International Conference on Materials Processing and Characterization (ICMPC-2016), Department of Mechanical Engineering Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, 12<sup>th</sup>-13<sup>th</sup> March, 2016.
20. Ghanaraja S, Ravi kumar K. S, Raju H. P and Madhusudan B.M., "Studies on Dry Sliding Wear Behaviour of Al<sub>2</sub>O<sub>3</sub> Reinforced Al Based Metal Matrix Composites", International Conference on Recent Trends in Engineering and Materials Science (ICEMS-2016), School of Engineering and Technology, School of Life and Basic Sciences, Jaipur National University, Jagatpura, Jaipur, 17<sup>th</sup>-19<sup>th</sup> March, 2016.
21. S. Ghanaraja, K.L. Vinuth Kumar, H.P. Raju and K.S. Ravi kumar. "Processing and Mechanical Properties of Hot Extruded Al (Mg)-Al<sub>2</sub>O<sub>3</sub> Composites," 4<sup>th</sup> International Conference on Materials processing and Characterization (ICMPC-2015), Department of Mechanical Engineering, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India, 14<sup>th</sup> to 15<sup>th</sup> March, 2015.
22. S. Ghanaraja, Subrata Ray and S. K. Nath, "Synthesis and Mechanical Properties of Cast Alumina Nano-Particle Reinforced Metal Matrix Composites," 4<sup>th</sup> International Conference on Materials Processing and Characterization (ICMPC-2015), Department of Mechanical Engineering, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India, 14<sup>th</sup> to 15<sup>th</sup> March, 2015.
23. S. Ghanaraja, C.M. Ramanujia, C.J. Ganagadharagowda and K.S. Abhinandhan. "Fabrication and Mechanical Properties of Al (Mg)-TiO<sub>2</sub> Based In-Situ Composites," 4<sup>th</sup> International Conference on Materials Processing and Characterization (ICMPC-2015), Department of Mechanical Engineering, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India, 14<sup>th</sup> to 15<sup>th</sup> March, 2015.
24. Ghanaraja. S., Dileep kumar. D.J., Ravikumar. K.S. and Madhusudan B. M., "Mechanical Properties of Hot Extruded Al (Mg)-MnO<sub>2</sub> Composites", International Conference on Mechanical and Manufacture Engineering (ICMME-2015) Sri Chandrashekara Saraswathi Vishwamahavidalya Kanchipuram, April 2<sup>nd</sup> -3<sup>rd</sup>, 2015.
25. Ghanaraja. S., Subrata Ray, Nath.S.K., "Effect of particle size on Porosity and Tensile Properties of Alumina Nano-Particle Reinforced Cast Metal Matrix Composites" International Conference on Precision, Meso, Micro, and Nano Engineering (COPEN-9) Institute of Technology Bombay, 10 to 12<sup>th</sup> December, 2015.
26. Ghanaraja. S., Vinuth Kumar. K.L., Ravi kumar. K.S. and Madhusudan B. M., "Synthesis and study of Mechanical Properties of Cast Al (Mg) - MnO<sub>2</sub> Composites", International Conference on Precision, Meso, Micro and Nano Engineering (COPEN-9: 2015) Institute of Technology Bombay, 10 to 12<sup>th</sup> December, 2015.
27. S. Ghanaraja, K.C. Mohankumara, H. Rajashekar and S.L. Ajitprasad, "Development and Mechanical Properties of SiC Reinforced Cast and Extruded Al Based Metal Matrix Composite,"

International Conference on Advances in Manufacturing and Materials Engineering (ICAMME-2014), NITK Surathkal, 27th to 29th March, 2014.

28. Ghanaraja. S., Subrath Ray and Nath. S.K. “Synthesis and Characterization of  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> Nano Powder by Disc Milling of Al and MnO<sub>2</sub> Powder”, International Conference on Advances in Manufacturing and Materials Engineering (ICAMME-2014) National Institute of Technology Karnataka, Surathkal , March 27-29, 2014.

29. Ghanaraja, S., Subrata Ray., Nath, S K., “Synthesis and Effect of Porosity on Mechanical Property of Alumina Nano-Particle Reinforced Cast Metal Matrix Composites,” International Conference on PRECISION, MESO, MICRO, AND NANO ENGINEERING (COPEN-8: 2013), National Institute of Technology, Calicut, India, 13th to 15th December, 2013.

30. Ghanaraja, S., Subrata Ray, Nath, S K., “Development and Mechanical Properties of Alumina Nano-Particle Reinforced Hot Forged Metal Matrix Composites”, International Conference on Advanced Materials, Manufacturing, Management and Thermal Sciences AMMMT-2013, SIT, Tumkur, India, 3<sup>rd</sup> to 4<sup>th</sup> May, 2013.

### **International Journal**

1. Ramesh Kurbet, Doddaswamy V, Amruth C M, MohammedRafi H Kerur and Ghanaraja S, “Frequency Response Analysis of Spur Gear pair using FEA”, Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2021.12.517>, 2214-7853/Copyright \_ 2021 Elsevier Ltd.
2. Ravikumar K. S, Ghanaraja S and Ramesh M. R, “Effect of Milling on the Hardness and Wear behaviour of Cast Al6061 Reinforced with Al<sub>2</sub>O<sub>3</sub> Nanoparticles”, Journal of Bio- and Tribo-Corrosion, <https://doi.org/10.1007/s40735-021-00598-1>, ISSN: 1946-3979 e-ISSN: 1946-3987 Accepted: 10 October 2021.
3. Chaitra H M, Ghanaraja S and Srinivasa M R, “Analysis on Characterization of Aluminium 7075 Reinforced with Magnesium and Boron Carbide” International Journal of Engineering Research in Electronics and Communication Engineering (IJERECE) Vol 8, Issue 8, ISSN (Online) 2394-6849, August 2021.
4. Siddaraju N, Srinivasa M R, Y S Rammohan and Ghanaraja S “Analysis on Wear Parameters of Heat Treated Aluminium 6061 Composites Reinforced with Graphene Hydroxyl” International Journal of Engineering Research in Electronics and Communication Engineering (IJERECE) Vol 8, Issue 8, ISSN (Online) 2394-6849, August 2021.
5. Ghanaraja S, Subrata Ray, S.K. Nath “Comparative Analysis of the particle size on the porosity and the tensile properties of aluminium based metal matrix nano-composites” Materials Today: Proceedings, Science Direct Materials Today: Proceedings 46, Elsevier Ltd PP:.9013–9020, 2021.
6. Ravi kumar K S, Ghanaraja S and Ramesh M.R, “Synthesis and characterization of nano-alumina powder by milling of Al and MnO<sub>2</sub> powder mixture”, Science Direct Materials Today: Proceedings 46, <https://doi.org/10.1016/j.matpr.2021.05.381>, 2214-7853/\_ 2021 Elsevier Ltd, PP:9021–9026. 1 June 2021

7. Madhusudan B.M, Ghanaraja S. and Sudhakar G.N, “Synthesis and Development of Size Hybrid Nano SiC- Al7075 composites by advanced stir casting”, Science Direct Materials Today: Proceedings, PP 3804–3809 January 2021.
8. Dr. Ghanaraja S, Sukruth Sagar B P, Kiranakumara K M, Madhu G, “Fabrication and Study of Mechanical Properties of Al 6061-B<sub>4</sub>C Metal Matrix Composites”, **Studies in Indian Place Names** (UGC Care Journal) ISSN: 2394-3114 Vol-40-Issue-71-March -2020.
9. K. S. Ravikumar, S. Ghanaraja, and M. R. Ramesh, “Effect of Ball Milling on the Tensile Properties of Aluminum-Based Metal Matrix Nanocomposite Developed by Stir Casting Technique”, SAE Int. J. Mater. Manuf. / Volume 14, Issue 4, doi:10.4271/05-14-04-0030. ISSN: 1946-3979, e-ISSN: 1946-3987, JUNE 2021.
10. Madhusudan B. M., H. P. Raju, S. Ghanaraja and G. N. Sudhakar, “Study of Microstructure and Mechanical Properties of Ball milled Nano-SiC Reinforced Aluminium Matrix Composites” J. Inst. Eng. India Ser. D, <https://doi.org/10.1007/s40033-021-00257-2>, 23 April 2021.
11. Mahadevaiah K E and Ghanaraja S, “Fabrication and Study of Mechanical Properties of Copper Oxide Reinforced Aluminium Based Metal Matrix Nano Composite”, International Research Journal of Modernization in Engineering Technology and Science, ISSN: 2582-5208, Volume-2, Issue-2, February-2020.
12. Ravi Kiran R and Ghanaraja S, “Fabrication and Study of Mechanical Properties of Aluminium Alloy 6061 Reinforced with Nano Zirconia”, International Research Journal of Modernization in Engineering Technology and Science, ISSN: 2582-5208, Volume-2, Issue-7, July-2020.
13. Chandan M and Ghanaraja S, “Fabrication and Study of Mechanical Properties of Aluminium Alloy 1100 Reinforced with Nano Titanium Carbide”, International Research Journal of Modernization in Engineering Technology and Science, ISSN: 2582-5208, Volume-2, Issue-7, July-2020.
14. Ghanaraja. S, Madhu. R, Ravikumar. K S and Likith P, “Synthesis and Mechanical Property Evaluation of Hot Forged Aluminium Alloy Reinforced with Nano Alumina”, Applied Mechanics and Materials© 2019 Trans Tech Publications Ltd, Switzerland ISSN: 1662-7482, Volume-895, pp-90-95, November 2019.
15. Harshith Kumar T S and Ghanaraja S, “Study of Tribological Properties of Al 6061 reinforced MnO<sub>2</sub> Metal Matrix Composites”, International Journal for Research in Applied Science & Engineering Technology (IJRASET), ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.177, Volume 7, Issue VII, July 2019.
16. Jayanth V and Ghanaraja S, “Fabrication and Study of Microstructure of Al 6061-MnO<sub>2</sub> Metal Matrix Composites”, International Journal for Research in Applied Science & Engineering Technology (IJRASET), ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.177’ Volume 7, Issue VII, July-2019.
17. H.P. Raju, B.M. Madhusudan, S. Ghanaraja, “Study on Effect of Different Ball Milling Duration on SiC Particles”, International Journal for Research in Engineering Application & Management (IJREAM) ISSN : 2454-9150 Vol-04, Issue-09, Dec 2018.

18. S. Ghanaraja, B. L. Gireesha, K. S. Ravikumar, and P. Likith, "Effect of forging on mechanical properties of rice husk ash-silicon carbide reinforced Al-1100 hybrid composites", AIP Conf. Proc. 1943, Published by AIP Publishing. 978-0-7354-1638-3/30, PP. 020050-1–020050-9, 2018.
19. S. Ghanaraja, Syed Imran Ali, K. S. Ravikumar, and P. Likith, "Characterization and study of mechanical and tribological properties on titanium dioxide (TiO<sub>2</sub>) coated 304L stainless steel", AIP Conf. Proc. 1943, Published by AIP Publishing. 978-0-7354-1638-3/\$30.00, PP. 020075-1–020075-8, 2018.
20. B. M. Madhusudan, H. P. Raju, and S. Ghanaraja., "Micro structural characterization and analysis of ball milled silicon carbide", AIP Conf. Proc. 1943, Published by AIP Publishing. 978-0-7354-1638-3/\$30.00, PP. 020122-1–020122-6, 2018.
21. Ghanaraja S, Rajashekar H, Ravikumar K S, Madhusudan B M, "Synthesis and Study of Microstructure and Mechanical Properties of Cast Al1100 (Mg) - SiC Composites", Materials Today: Proceedings vol, 5, PP. 2765–2772, 2018.
22. Ghanaraja S, Gireesha B L, Ravi kumar K S and Madhusudan B M, "Production and Characterization of Rice Husk Ash-Silicon Carbide Reinforced Al1100 Aluminium Alloy Hybrid Composites", International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE), ISSN (Online) 2456-1290, Vol 2, Issue 4, April 2017.
23. Ghanaraja S, Ravi kumar K S and Likith P, "Synthesis and Characterization of Tribological Properties of Aluminium Alloy Reinforced with Zirconium Dioxide Composite", International journal of research in aeronautical and mechanical engineering ISSN (online): 2321-3051, 2017.
24. Ghanaraja S, Ravi kumar K. S, Raju H. P and Madhusudan B.M., "Studies on Dry Sliding Wear Behaviour of Al<sub>2</sub>O<sub>3</sub> Reinforced Al Based Metal Matrix Composites", Materials Today: Proceedings Vol, 4, PP. 10043–10048, 2017.
25. Ghanaraja S, Subrata Ray and Nath S. K, "Comparative Study of Tensile Properties of Cast and Hot Forged Alumina Nano particle Reinforced Composites", International Journal of Chemical, Molecular, Nuclear, Materials and Metallurgical Engineering on 2016, Vol:10, No:6, pp.594-601.
26. Ghanaraja. S., Vinuth Kumar. K.L., Ravi kumar. K.S and Madhusudan B. M, " Mechanical Properties of Al<sub>2</sub>O<sub>3</sub> Reinforced Cast and Hot Extruded Al based Metal Matrix Composites", Materials Today Proceedings, vol. 4, PP. 2771-2776, 2017.
27. Ghanaraja S., Ramanuja C. M., Ravi kumar K. S., Madhusudan B. M. "Study on Mechanical Properties of Hot Extruded Al (Mg)-TiO<sub>2</sub> Composites", American Journal of Materials Science, 5(3C), pp. 188-193, 2015.
28. Ghanaraja. S., Ramanuja. C.M., Gangadhara Gowda. C.J. and Abhinandhan.K.S., "Fabrication and Mechanical Properties of Al (Mg)-TiO<sub>2</sub> Based In-Situ Composites" Materials Today Proceedings, vol, 2, PP. 1282-1290, 2015.
29. Ghanaraja. S., Vinuth Kumar. K.L., Raju. H.P. and Ravi kumar. K.S. "Processing and Mechanical Properties of Hot Extruded Al (Mg)-Al<sub>2</sub>O<sub>3</sub> Composites" Materials Today Proceedings, vol. 2, PP. 1291-1300, 2015.

30. Ghanaraja. S., Subrata Ray, Nath.S.K., “Synthesis and mechanical properties of cast alumina nano-particle reinforced metal matrix composites”, Materials Today Proceedings, vol. 2, PP: 3656 – 3665, 2015.
31. Ghanaraja. S., Dileep kumar. D.J., Ravi kumar. K.S. and Madhusudan B. M., “Mechanical Properties of Hot Extruded Al (Mg)-MnO<sub>2</sub> Composites”, Applied Mechanics and Materials, Vols. 813-814, pp. 84-89, 2015.
32. S. Ghanaraja, S. Ray and S.K. Nath, “Synthesis and Characterization of  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> Nano Powder by Disc Milling of Al and MnO<sub>2</sub> Powder,” Material Science Journals Elsevier Publications, vol. 5 2014, PP. 416 – 425, 2014.
33. S. Ghanaraja, K.C. Mohan kumara, H. Rajashekar and S.L. Ajit prasad, “Development and Mechanical Properties of SiC Reinforced Cast and Extruded Al Based Metal Matrix Composite” Material Science Journals Elsevier Publications, PP. 934-943, 2014.
34. S. Ghanaraja, S. Ray and S.K. Nath, “Processing and Mechanical Properties of cast Al (Mg, Mn)-Al<sub>2</sub>O<sub>3</sub> (MnO<sub>2</sub>) Composites Containing Nano particles and Larger Particles” Metallurgical and Material Transactions A, vol. 5 2014, PP. 416 – 425, 2014.

### **National Conference**

1. Ghanaraja, S., Subrata Ray., Nath, S K., “Development and property evaluation of alumina nano-particle reinforced cast metal matrix composites,” 1st National Conference on Micro and Nano Fabrication, CMTI, Bangalore, India, 21<sup>st</sup> to 23<sup>rd</sup> January, 2013.
2. Ghanaraja. S., Ravi kumar. K.S. and Madhusudan. B.M., “Mechanical Properties of Al 1100 Alloy Reinforced With SiC & Graphite Particulate Hybrid Metal Matrix Composites”, National Conference on Scientific Computational and Information Research Trends in Engineering (NCSCI-2016) GSSS Institute of Engineering & Technology for Women, Mysore, 1st January 2016 (Awarded as the best paper).
3. Ghanaraja S., Ramanuja C. M., Ravikumar K. S., Madhusudan B. M., “Study on Mechanical Properties of Hot Extruded Al (Mg)-TiO<sub>2</sub> Composites”, National Conference, St Joseph Engineering College Vamanjoor, Mangalore, 7th and 8th August, 2015.

### **National Journal**

1. Ghanaraja, S., Subrata Ray., Nath, S K., “Development and property evaluation of alumina nano-particle reinforced cast metal matrix composites” Manufacturing technology Today (MTT), Central Manufacturing Technology Institute (CMTI) Bangalore, ISSN 0972-7396, Vol.-13, Issue-12, pp. 6-12, December 2014.



## **RESEARCH PUBLICATIONS (M.Tech)**

1. “Tool Wear Monitoring in face milling using acoustic emission, Vibration and Surface Roughness Analysis” proceedings of National Conference on Manufacturing challenges in 21st Century held at BHU, Varanasi on 7<sup>th</sup> and 8<sup>th</sup> January-2000. (Awarded as the best paper).
2. “Tool Wear Monitoring” Proceedings of ACUMEN’99, A national Level Technical Symposium, held at Vasavi College of Engineering, IBRAHIMBAGH, HYDERABAD, 27<sup>th</sup> to 29<sup>th</sup> December 1999.
3. “Monitoring Tool Wear in Face Milling using Vibration Analysis” EFFICACY-2000 National Level Technical Symposium held at Institute of Road and Transport Technology-Erode.
4. “Tool Condition Monitoring in Face Milling using Surface Roughness and Vibration analysis Technique” All India Seminar on Future Trends in Mechanical Engineering research and development organised by the Department of Mechanical and Industrial Engineering, University of Roorkee, Roorkee, September 29<sup>th</sup> and 30<sup>th</sup> 2000.

## **INDIAN PATENT**

1. **Indian Patent** “Extraction of Energy through Magnetic Bearings” Application No.**202241000664**, Published 21/01/2022.
2. **Indian Patent** “Construction of Cheap Verbalized Robotic Hand for Specific Adherence” Application No.**202141043085**, Published 05/11/2021