

- 1) **NAME:** [MUKUL SHUKLA](#)
- 2) **BORN:** June 30, 1968
- 3) **DESIGNATION:** Professor  
Department of Mechanical Engineering  
MNNIT Allahabad, Prayagraj  
211004, UP, India



4) **EDUCATIONAL QUALIFICATIONS:**

Degree/Course	Year	Division/ CGPA	Institution / University / Board
Matriculation: Grade XI	1984	First (Distinction)	Nirmal Higher Secondary School, Jagdalpur, M. P. Board, Bhopal, MP, India
B.Eng. (5 Year) - Mechanical Engineering	1989	First	Government Engineering College, Rani Durgavati University, Jabalpur, MP, India
M.Eng. - Design of Process Machines	1991	First (Honours)	Motilal Nehru Regional Engineering College, University of Allahabad, UP, India
Ph.D. (Mechanical Engineering)	2006	8.0	Indian Institute of Technology (IIT) Kanpur

5) **JOB PROFILE:** **Total work experience – 28 years 03 months**

Designation	Employer	Period
Design Engineer	Development Alternatives, New Delhi	1991 to 1992
Ph.D. Scholar	Indian Institute of Technology, New Delhi	1992 to 1992
Lecturer	M.N.R. Engg. College, Allahabad	1992 to 1997
Senior Lecturer	M.N.R. Engg. College, Allahabad	1997 to 2002
Ph.D. Scholar*	Indian Institute of Technology, Kanpur	1999 to 2003
Assistant Professor	MNNIT Allahabad	2002 to 2005
Associate Professor	MNNIT Allahabad	2006 to 2018

Professor	MNNIT Allahabad	2018 to Till date
Senior Lecturer <sup>\$</sup>	Queen's University, Belfast, UK	2017 to 2018
Senior Lecturer <sup>\$</sup>	University of Johannesburg (UJ), S Africa	2010 to 2012
Associate Professor <sup>\$</sup>	University of Johannesburg, S Africa	2012 to 2014
Associate Professor (Visiting)	University of Johannesburg, S Africa	2014 to 2017
Visiting Fellow <sup>**</sup>	Univ. of Central England, Birmingham and Liverpool John Moores University, Liverpool, UK	1997 to 1997 (6 months)

\* *On study leave from MNREC, Allahabad under QIP*

\$ *On leave from MNNIT, Allahabad*

\*\* *Under Indo-UK: REC Project for Training in CAD and Rapid Prototyping*

- 6a) COURSES LECTURED:**
- \* CAD, Optimization, Rapid Prototyping and Manufacturing, Computer Aided Product Design, CADD, Computer Graphics, Modeling and Simulation, FEM, Computer Programming, DFM, Robotics at GRADUATE level
  - \* CAD, Machine Design, Optimization Methods in Engineering, Numerical Analysis & Computer Programming, FEM, Advanced Strength of Materials, Engineering Graphics (Drawing), Industrial Engineering & Management, Operations Research at UNDERGRADUATE level

**6b) LABORATORIES DEVELOPED:**

1. *Polymer Composites Laboratory (at UJ)*
2. *Thermo-mechanical Material Characterization Lab (at MNNIT)*
3. *CAD Lab (at MNNIT)*

**6c) GRANTS / FUNDED RESEARCH:**

*POLYMER COMPOSITES BASED:*

1. Rs. 17.7 lacs from NPIU-TEQIP CRS "*Hybrid composite for light weight impact resistant helmet*", as Co-Principal Investigator, (PI – Mr Mohammed Sarfaraz), 2019-20.

2. Rs. 42.4 lacs from ARDB (Aeronautics Research & Development Board) for the ACECOST project “*Numerical Simulation and Experimental Study of Mold Filling Processes in Manufacturing of Fibrous Composites*”, as Co-Principal Investigator, (PI – Prof N N Kishore), 2012-15.
3. Rs. 1.26 crores from Advanced Systems Laboratory (ASL), DRDO, Hyderabad for the project “*Thermo-Mechanical Material Characterization and Simulation of Polymer Nanocomposites*”, as Principal Investigator, 2008-11.
4. Rs. 25.4 lacs from Indo-Taiwan Joint Research Scheme – DST, New Delhi for the project “*Characterization, Modeling and Analysis of Nano-flake and Nano-sheet Graphite Nanocomposites*” as Co-Principal Investigator (PI – Prof. K K Shukla), 2009-2012.
5. Rs. 13.9 lacs from ARDB (Aeronautics Research & Development Board - Structures Panel) for the project “*Cure Dependent Material Characterization of Composite Prepregs and FEM Modeling of the Curing of Composites*”, as Principal Investigator, 2007-09.
6. Rs. 43 lacs - Team member – DST - FIST, New Delhi project for “*Setting up a Thermo-mechanical Material Characterization / Mechatronics Laboratory*”, (PI – Head, Mechanical Engg Deptt), 2005-10.
7. Rs. 11.2 lacs - Team member – DST - SERC Project “*Numerical Simulation (FEM) and Experimental Investigation of the Geometry of Autoclaved Composite Parts*” - on my PhD topic at IIT Kanpur, (PI – Prof N N Kishore), 2002-2005.
8. **Grants from the University of Johannesburg as Principal Investigator:**
  - a) ZAR 6,00,000 for “*Composites Processing Research Centre*” project, 2011-14.
  - b) ZAR 3,90,000 for Small Equipment funding for “*Setup of a Composites Processing Laboratory*”. 2011.
  - c) ZAR 25,000 for “*Natural Fibre Composites Research*” project, 2011.
  - d) ZAR 77,000 for “*Natural Fibre Composites for Packaging Applications*” project, 2012.

**LASER MATERIAL PROCESSING BASED:**

1. ZAR 1,75,500 from CSIR–NLC for “*Laser Based Additive Manufacturing of Functionally Graded Titanium Metal Matrix Composites*”, as Co-Principal Investigator, (PI – Dr E T Akinlabi), 2012-13.
  2. ZAR 1,99,500 from NRF for SA-Zambia Research Project “*Laser Processing of Titanium Alloys*”, as Co-Principal Investigator, (PI – Dr E T Akinlabi), 2012-13.
  3. ZAR 60,000 from TESP-Eskom for the project “*Laser Beam Welding of Structural Steel*”, as Principal Investigator, 2013.
- 6d) **Google Scholar Citations – 1715+; h-index – 22; i-10 index – 40**
- 6e) **Scopus Citations – 975+; h-index – 18**
- 6f) **Research Gate Score - 26.66; Citations - 1130+; h-index – 20; %ile – 82.5**

**7) LIST OF PUBLICATIONS:**

### **Book Chapters:**

- 1) R. M. Mahamood, E. T. Akinlabi, M. Shukla and S Pityana, "**Improving Surface Integrity using Laser Metal Deposition Process**", in "Additive Manufacturing: Breakthroughs in Research and Practice", Publisher - IGI Global, USA, pp. 220-244, 2020.
- 2) M. Tlotleng, E. T. Akinlabi, M. Shukla and S Pityana, "**Application of Laser Assisted Cold Spraying Process for Materials Deposition**", in "Surface Engineering Techniques and Applications: Research Advancements", Publisher - IGI Global, USA, pp. 177-221, 2014.
- 3) R. M. Mahamood, E. T. Akinlabi, M. Shukla and S Pityana, "**Improving Surface Integrity using Laser Metal Deposition Process**", in "Surface Engineering Techniques and Applications: Research Advancements", Publisher - IGI Global, USA, pp. 146-176, 2014.
- 4) R. M. Mahamood, M. Shukla and S Pityana, "**Laser Additive Manufacturing in Surface Modification of Metals**", in "Surface Engineering Techniques and Applications: Research Advancements", Publisher - IGI Global, USA, pp. 222-248, 2014
- 5) M. Shukla, "**Abrasive Water Jet Milling**", in "Nontraditional Machining Processes", ISBN: 978-1-4471-5178-4, Publisher - Springer, pp. 177-203, 2013.
- 6) T. U. Siddiqui and M. Shukla, "**Modeling and Optimization of Abrasive Water Jet Cutting of Kevlar Fiber-Reinforced Polymer Composites**", in "Computational Methods for Optimizing Manufacturing Technology - Models and Techniques", ISBN - 978-1466601284, Published by IGI Global, USA, pp. 262-286, 2012.
- 7) S. A. Akinlabi, M. Shukla, E. T. Akinlabi and T. Marwala, "**Lasers in Metal Forming applications**", in "Lasers in Manufacturing", ISBN - 978-1-84821-369-2, Published by ISTE-Wiley, UK, pp. 69-108, 2012.
- 8) T. U. Siddiqui, M. Shukla and P. B. Tambe, "**Optimisation of Process Parameters for Abrasive Water Jet Machining of Kevlar-Epoxy Composites Using Taguchi Method and Response Surface Methodology**", in "Advances in Manufacturing Technology", ISBN - 978-81-7371-755-0, Published by Universities Press (India) Pvt. Ltd., 2012.

### **Books:**

1. "**Concepts of Engineering Design**", BTech 1st year textbook, *Publisher - Notion Press, Chennai*, May 2016.

### **Refereed Journals:**

1. N. Chand, M. Shukla and M. K. Sharma, "**Tensile Strength of Bamboo Across the Radial Direction**", International Journal of Bamboo and Rattan, ISSN: 1569-1586, Vol. 5, Nos. 1 & 2, pp. 67-72, 2006.
2. T. U. Siddiqui, M. Shukla and P. B. Tambe, "**Optimization of Surface Finish in Abrasive Water Jet Cutting of Kevlar Composites Using Hybrid Taguchi and Response Surface Method**", International Journal of Machining and Machinability of Materials, ISSN: 1748572X, Vol. 4, No. 3 & 4, pp. 382-402, 2008.

3. N. Chand, M. Shukla and M. K. Sharma, “*Analysis of Mechanical Behaviour of Bamboo (Dendrocalamus Strictus) using FEM*”, Journal of Natural Fibers (SCI) – IF - 1.07, ISSN: 1544-0478, Vol. 5, No. 2, pp. 127-137, 2008.
4. T. U. Siddiqui and M. Shukla, “*Robust Parameter Design for Multi-characteristic Optimization of Abrasive Waterjet Cutting of Aramid Composite*”, Journal of Modern Manufacturing Technology, ISSN: 0974-8415, Vol. 1, No. 1, pp. 27-41, 2008.
5. T. U. Siddiqui and M. Shukla, “*Robust Process Parameter Design in Abrasive Water Jet Cutting of Kevlar Composites*”, Journal Proceedings in Manufacturing Systems, ISSN - 1842-3183, Vol. 3, pp. 253-258, 2008.
6. V. Kumar, J. RamKumar, S. Aravindan, S. K. Malhotra, K. Vijai, M. Shukla, “*Fabrication and characterization of ABS nano composite reinforced by nano sized alumina particulates*”, International Journal of Plastics Technology, Vol. 13, No. 2, pp 133-149, 2009.
7. M. Shukla and P. B. Tambe, “*Predictive Modeling of Surface Roughness and Kerf Widths in Abrasive Water Jet Cutting of Kevlar Composites Using Neural Network*”, International Journal of Machining and Machinability of Materials, ISSN: 1748572X, Vol. 8, No. 1 & 2, pp. 226-246, 2010.
8. T. U. Siddiqui and M. Shukla, “*Modeling of Depth of Cut in Abrasive Waterjet Cutting of Thick Kevlar-Epoxy Composites*”, Key Engineering Materials, (Scopus journal), ISSN: 1013-9826, Vol. 443, pp. 423-427, 2010.
9. M. Shukla, A. K. Singh, N. N. Kishore and S. G. Dhande, “*Towards Rapid Manufacturing of Angled Autoclaved Composite Laminates with Minimized Springin: A Taguchi Experiments and Finite Element Analysis Based Approach*”, International Journal of Rapid Manufacturing, ISSN: 1757-8817, Vol. 1, No. 4, pp. 390-407, 2010.
10. T. U. Siddiqui and M. Shukla, “*Experimental Investigation and Optimization of Kerf Characteristics in Abrasive Waterjet Trepanning of Thick Kevlar-Epoxy Composites*”, Journal Proceedings in Manufacturing Systems, Vol. 5, No. 2, pp. 109-112, 2010.
11. S. Akinlabi, T. Marwala, E. Akinlabi and M. Shukla “*Effect of Scan Velocity on Resulting Curvatures During Laser Beam Bending of AISI 1008 Steel Plates*”, Advanced Materials Research, (Scopus journal), Vols. 299-300, pp 1151-1156, 2011.
12. T. U. Siddiqui and M. Shukla, “*Abrasive Waterjet Hole Trepanning of Thick Kevlar-Epoxy Composites for Ballistic Applications – Experimental Investigations and Analysis Using Design of Experiments Methodology*”, International Journal of Machining and Machinability of Materials, ISSN: 1748572X, Vol. 10, No. 3, pp. 172-186, 2011.
13. P. B. Tambe and M. Shukla, “*Genetic Algorithm Based Optimization of Material Removal Rate of Abrasive Waterjet Cutting of Polymer Composites*”, Asian International Journal of Science and Technology of Progress in Manufacturing Engineering Vol. 4, No. 2, pp. 37-42, 2011.
14. A. Kumar and M. Shukla, “*Saturation of Fiber Tow and Related Issues in Vacuum Assisted Resin Transfer Molding (VARTM) Process*”, International Journal of Science Technology & Management, ISSN: 2229-6646, Vol. 2, Issue 4, pp. 8-19, 2011.

15. S. Akinlabi, M. Shukla, E. Akinlabi and Marwala. T., "*Laser Beam Forming of 3mm Steel Plate and the Evolving Properties*", Journal of World Academy of Science, Engineering and Technology, ISSN: 2010-376X, Vol. 59, pp. 2279-2283, 2011.
16. K. ObiReddy, C. U. Maheshwari, M. Shukla and T. Varadarajulu, "*Chemical Composition and Structural Characterization of Napier Grass Fibers*", Materials Letters (SCI) – IF - 3.01, Vol. 67, Issue 1, pp. 35-38, 2012.
17. K. Sharma and M. Shukla, "*Experimental Study of Mechanical Properties of Multiscale Carbon Fiber-Epoxy-CNT Composites*", International Journal of Advanced Materials Research, (Scopus journal), Vols. 383-390, pp. 2723-2727, 2012.
18. N. Kumar and M. Shukla, "*Finite Element Analysis of the Effect of Multiple Abrasive Particle Impact on Erosion Behaviour of Titanium Alloy in Abrasive Water Jet Machining*", Journal of Computational and Applied Mathematics (SCI) – IF – 1.88, Vol. 236, No. 18, pp. 4600-4610, 2012.
19. K. ObiReddy, M. Shukla, C. U. Maheshwari and T. Varadarajulu, "*Evaluation of Mechanical Behavior of Chemically Modified Borassus Fruit Short Fiber/Unsaturated Polyester Composites*", Journal of Composite Materials (SCI) – IF – 1.75, ISSN: 0021-9983, Vol. 46, No. 23, pp. 2987-2998, 2012.
20. R. Gudani and M. Shukla, "*Controlled Depth Abrasive Water Jet Cutting of Grade 2 Titanium and Regression Modeling*", International Journal of Mechanical Engineering and Materials Sciences, ISSN: 0974-584X, Vol. 5, No. 2, 117-122, 2012.
21. M. Shukla, Rasheedat M., E. T. Akinlabi, and S. Pityana "*Effect of Laser Power and Powder Flow rate on properties of Laser Metal Deposited Ti6Al4V*" Journal of World Academy of Science and Technology, ISSN: 2010-376X, Vol. 71, pp. 1268-1272, 2012.
22. E. T. Akinlabi, Mukul Shukla and Stephen A. Akinlabi, "*Laser Forming of Titanium and Its Alloys – An Overview*", Journal of World Academy of Science, Engineering and Technology, ISSN: 2010-376X, Vol. 71, pp. 1522-25, 2012.
23. K. Sharma, K. K. Saxena and M. Shukla, "*Effect of Number of Stone-Wales and Vacancy Defects on the Mechanical Behavior of Carbon Nanotubes Using Molecular Dynamics*", Procedia Engineering, ISSN: 1877-7058, Vol. 38, pp. 3373 – 3380, 2012.
24. K. ObiReddy, M. Shukla, C. U. Maheshwari and T. Varadarajulu, "*Mechanical and physical characterization of sodium hydroxide treated Borassus fruit fibers*", Journal of Forestry Research, (SCI) – IF – 1.15, ISSN: 1007-662X, Vol. 23, No. 4, pp. 667-674, 2012.
25. E. T. Akinlabi, R. M. Mahamood, M. Shukla and S. Pityana. "*Effect of Scanning Speed on Material Efficiency of Laser Metal Deposited Ti6Al4V*", Journal of World Academy of Science, Engineering and Technology, ISSN: 2010-376X, Vol. 71, pp. 1531-35, 2012.
26. K. ObiReddy, C. U. Maheshwari, M. Shukla, J. I. Song and T. Varadarajulu, "*Tensile and Structural Characterization of Alkali Treated Borassus Fruit Fine Fibers*", Composites Part B - Engineering (SCI) – IF – 6.86, ISSN: 1359-8368, Vol. 44, pp. 433-438, 2013.
27. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, "*Material Efficiency of Laser Metal Deposited Ti6Al4V: Effect of Laser Power*", Engineering Letters, ISSN: 1816-0948, Vol. 21(1), pp. 18-22, 2013.

28. K. ObiReddy, C. U. Maheshwari and M. Shukla, “*Physico-Chemical Characterization of Cellulose Extracted from Ficus Leaves*”, Journal of Biobased Materials and Bioenergy (SCI) – IF – 2.99, ISSN: 1556-6560, Vol. 7, pp. 496-499, 2013.
29. J. Pilusa, E. Muzenda, M. Shukla, “*Thermo-Chemical Extraction of Fuel Oil from Waste Lubricating Grease Waste Management*”, Waste Management (SCI) – IF – 5.43, Vol. 33, Issue 6, pp. 1509–1515, 2013.
30. K. V. Parasuram, K. ObiReddy, M. Shukla, T. Marwala and T. Varadarajulu, “*Physico-chemical, tensile and thermal characterization of Napier grass (native African) fiber strands*”, International Journal of Polymer Analysis and Characterization, (SCI) – IF – 1.42, Vol. 18, Issue 4, pp. 303-314, 2013.
31. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, “*Scanning Velocity influence on Microstructure, Microhardness and Wear Resistance Performance on Laser Deposited Ti64/TiC Composite*”, Materials and Design (SCI) – IF – 5.77, Vol. 50, pp. 656–666, 2013.
32. C. U. Maheswari, K. ObiReddy, E. Muzenda, M. Shukla, A. V. Rajulu, “*A Comparative Study of Modified and Unmodified High-Density Polyethylene Borassus Fiber Composites*”, International Journal of Polymer Analysis and Characterization, (SCI) – IF – 1.42, Vol. 18, Issue 6, pp. 439-450, 2013.
33. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, “*Characterizing the Effect of Laser Power Density on Microstructure, Microhardness, and Surface Finish of Laser Deposited Titanium Alloy*”, ASME Journal of Manufacturing Science and Engineering (SCI) – IF – 2.61, Vol. 135, No. 6, 064502, 2013.
34. C. U. Maheswari, K. ObiReddy, E. Muzenda, M. Shukla, A. V. Rajulu, “*Mechanical Properties and Chemical Resistance of Short Tamarind Fiber/Unsaturated Polyester Composites: Influence of Fiber Modification and Fiber Content*”, International Journal of Polymer Analysis and Characterization, (SCI) – IF – 1.42, ISSN: 1023-666X, Vol. 18, Issue 7, pp. 520-533, 2013.
35. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, “*Revolutionary Additive Manufacturing: An Overview*”, Lasers in Engineering, (Scopus) – IF – 0.34, ISSN: 0898-1507, pp. 161-178, Vol. 27, No. 3-4, 2014.
36. N. Thayumanavan, P. Tambe, G. Joshi and M Shukla, “*Effect of sodium alginate modification of graphene (by ‘anion- $\pi$ ’ type of interaction) on the mechanical and thermal properties of polyvinyl alcohol (PVA) nanocomposites*”, Composite Interfaces, (SCI) – IF - 2.02, ISSN: 0927-6440, pp. 1-20, 2014.
37. K. Sharma and M. Shukla, “*Three Phase Carbon Fiber Amine Functionalized Carbon Nanotubes Epoxy Composite-Processing, Characterisation and Multiscale Modeling*”, Journal of Nanomaterials, (SCI E) – IF – 2.23, ISSN: 1687-4110, Vol. 2014, Article ID 837492, 10 pages, 2014.
38. K. Sharma and M. Shukla, “*Molecular Modeling of Mechanical Behavior of Amine Functionalized Multiwalled Carbon Nanotubes/Epoxy Composites*”, New Carbon Materials, (SCI) – IF – 1.17, ISSN: 1007-8827, Vol. 29(2), pp. 32-42, 2014.
39. K. ObiReddy, C. U. Maheshwari and M. Shukla, E. Muzenda, “*Preparation, Chemical composition, characterization and properties of paper sheets made from Napier grass*”,

- Separation Science and Technology, (SCI) – IF – 1.35, ISSN: 0149-6395, Vol. 49(10), pp. 1527-1534, 2014.
40. M. Tlotleng, E. Akinlabi, M. Shukla and S. Pityana, "*Microstructures, Hardness and Bioactivity of Hydroxyapatite Coatings Deposited by Direct Laser Melting Process*", Materials Science and Engineering C, (SCI) IF – 4.96, ISSN – 0928- 4931, Vol. 43, pp. 189-198, 2014.
  41. T. J. Pilusa, E. Muzenda, and M. Shukla, "*Reduction of Sulphur in Crude Tyre Oil by Gas- liquid Phase Oxidative Adsorption*", South African Journal of Chemical Engineering, ISSN - 1026-9185, Vol. 19(1), pp. 22-30, 2014.
  42. K. V. Parasuram, K. ObiReddy, M. Shukla, T. Marwala and T. Varadarajulu, "*Mechanical Properties, Water Absorption and Chemical Resistance of Napier Grass Fiber Strands Reinforced Epoxy Resin Composites*", International Journal of Polymer Analysis and Characterization, (SCI) – IF – 1.42, Vol. 19(8), pp. 693-708, 2014.
  43. A. Kumar and M. Shukla, "*Race Tracking and Related Issues in Liquid Composite Moulding Process*", Journal for Manufacturing Science and Production, Vol. 14, No. 4, pp. 209-217, 2014.
  44. K. Sharma, K. S. Kaushalyayan and M. Shukla, "*Pull-out Simulations of Interfacial Properties of Amine Functionalized Multi-Walled Carbon Nanotube Epoxy Composites*", Computational Materials Science, (SCI) – IF – 1.879, ISSN: 0927-0256, Vol. 99, pp. 232-241, 2015.
  45. K. ObiReddy, C. U. Maheshwari, K. R. Reddy, M. Shukla, E. Muzenda and T. Varadarajulu, "*Effect of Chemical Treatment and Fiber Loading on Mechanical Properties of Borassus (Toddy Palm) Fiber/Epoxy Composites*", International Journal of Polymer Analysis and Characterization, (SCI) – IF – 1.42, ISSN: 1023-666X, Vol. 20, No. 7, pp. 612-626, 2015.
  46. M. Tlotleng, E.T. Akinlabi, M. Shukla and S. Pityana, "*Mechanical and Microstructural Evaluation of Laser Assisted Cold Sprayed Bio-ceramic Coatings: Potential Use for Biomedical Applications*", Journal of Thermal Spray Technology, (SCI) – IF – 1.491, ISSN: 1059-9630, Vol. 24(3), pp. 423-435, 2015.
  47. V. P. Kommula, K. ObiReddy, M. Shukla, T. Marwala, E. V. S. Reddy and T. Varadarajulu, "*Extraction, Modification, and Characterization of Natural Ligno-Cellulosic Fiber Strands From Napier Grass*", International Journal of Polymer Analysis and Characterization, (SCI) – IF – 1.42, Vol. 21, No. 1, pp. 18-28, 2016.
  48. S. A. Akinlabi, M. Shukla, "*Evaluation of Structural Integrity of Laser Formed Steel Sheets for Possible Load Bearing Applications*", Lasers in Engineering, (Scopus) – IF – 0.34, Vol. 35, No. 1-4, pp. 197-216, 2016.
  49. K. ObiReddy, C. U. Maheshwari, E. Muzenda, M. Shukla, and T. Varadarajulu, "*Extraction and Characterization of Cellulose from Pre-treated Ficus (Peepal Tree) Leaf Fibers*", Journal of Natural Fibers (SCI) – IF - 0.393, Vol. 13, No. 1, pp. 54-64, 2016.
  50. E. T. Akinlabi, M. Shukla, S. A. Akinlabi, S. B. Kanyanga, C. M. Chizyuka, "*Forming behavior of Steel Plates after Mechanical and Laser Beam Forming*", Lasers in Engineering, (Scopus) – IF – 0.34, 2016.



51. P. K. Singh, K. Sharma, A. Kumar and M. Shukla, "*Effects of Functionalization on the Mechanical Properties of Multi-Walled Carbon Nanotubes: A Molecular Dynamics Approach*", Journal of Composite Materials (SCI) – IF – 1.75, Vol. 51, No. 5, pp. 671-680, 2017.
52. A. Das and M. Shukla, "*Surface Morphology and In Vitro Bioactivity of Biocompatible Hydroxyapatite Coatings on Medical Grade S31254 Steel by RF Magnetron Sputtering Deposition*", The International Journal of Surface Engineering and Coatings - Transactions of the IMF, (SCI) - IF 0.8, Vol. 95, No. 5, pp. 276-281, 2017.
53. A. Das and M. Shukla, "*Hydroxyapatite coatings on high nitrogen stainless steel by laser rapid manufacturing*", JOM, (SCI) – IF – 2.3, Vol. 69, No. 11, pp 2292–2296, 2017.
54. C. Swaroop and M. Shukla, "*Nano-magnesium oxide reinforced polylactic acid biofilms for food packaging applications*", International Journal of Biological Macromolecules, (Scopus) – IF – 4.78, Vol. 113, pp. 729-736, 2018.
55. T. Bhardwaj and M. Shukla, "*Effect of laser scanning strategies on texture, physical and mechanical properties of laser sintered maraging steel*", Materials Science and Engineering: A, (SCI) – IF – 4.08, Vol. 734, pp. 102-109, 2018.
56. A. Das and M. Shukla, "*Pulsed laser-deposited hopeite coatings on titanium alloy for orthopaedic implant applications: surface characterization, antibacterial and bioactivity studies*", Journal of the Brazilian Society of Mechanical Sciences and Engineering, (SCI) – IF – 1.74, Vol. 41, No. 5, pp 214, 2019.
57. T. Bhardwaj, M. Shukla, C. P. Paul and K. S. Bindra, "*Direct Energy Deposition-Laser Additive Manufacturing of Titanium-Molybdenum alloy: Parametric studies, microstructure and mechanical properties*", Journal of Alloys and Compounds (SCI) – IF – 4.17, Vol. 787, pp. 1238-1248, 2019.
58. A. Das and M. Shukla, "*Surface morphology, bioactivity and antibacterial studies of pulsed laser deposited hydroxyapatite coatings on Stainless Steel 254 for orthopaedic implant applications*", Proc IMechE Part L: J Materials: Design and Applications, (SCI) – IF – 1.568, Vol. 233, pp. 120-127, 2019.
59. C. Swaroop and M. Shukla, "*Development of blown polylactic acid-MgO nanocomposite films for food packaging*", Composites Part A: Applied Science and Manufacturing, , (SCI) – IF – 6.28, Vol. 124, pp. 105482, 2019.
60. T. Bhardwaj, M. Shukla, N. K. Prasad, C. P. Paul and K. S. Bindra, "*Direct Laser Deposition-Additive Manufacturing of Ti–15Mo Alloy: Effect of Build Orientation Induced Surface Topography on Corrosion and Bioactivity*", Metals and Materials International (SCI) – IF – 1.64, doi/s12540-019-00464-3, 2019.
61. Y. Tripathi, M. Shukla and A D Bhatt, "*Implicit-function based design and additive manufacturing of triply periodic minimal surfaces scaffolds for bone tissue engineering*", Accepted - Journal of Materials Engineering and Performance, IF – 1.47, Springer, 2019.

#### **International Conference Proceedings:**

1. S. Singh, M. Shukla, T. Bhardwaj and A. K. S. Chauhan, "*Simulation of Residual Stresses and Distortion of Laser Additive Manufactured Maraging Steel for Aerospace Applications*", Presented at the International

- Conference on Advanced Materials and Processes for Defence Applications (ADMAT 2019 MatDef), Hyderabad, Sept. 2019.
2. A. K. S. Chauhan and M Shukla, "*Residual Stress Modeling and Simulation of Direct Metal Laser Sintered Ti-6Al-4V Alloy*", 9th International Conference on Materials Processing and Characterization (ICMPC-2019)", Hyderabad, March 2019.
  3. T. Bhardwaj and M. Shukla, "*Direct Metal Laser Sintering of Maraging Steel: Effect of Building Orientation on Surface Roughness and Microhardness*", Materials Today: Proceedings 5 (9), 20485-20491, 2018
  4. S. P. Singh, M. Shukla and R.K. Srivastava, "*Lattice Modeling and CFD Simulation for Prediction of Permeability in Porous Scaffolds*", Materials Today: Proceedings 5 (9), 18879-18886, 2018
  5. C. Swaroop and M. Shukla, "*Mechanical, Optical and Antibacterial Properties of Polylactic Acid/Polyethylene Glycol Films Reinforced with MgO Nanoparticles*", Materials Today: Proceedings 5 (9), 20711-20718, 2018
  6. R. Verma and M. Shukla, "*Characterization of Mechanical Properties of Short Kenaf Fiber-HDPE Green Composites*", Materials Today: Proceedings 5 (2), 3257-3264, 2017.
  7. C. Swaroop and M. Shukla, "*Polylactic acid/ magnesium oxide nanocomposite films for food packaging applications*", ICCM 2017, Xian, China, August 2017.
  8. T. Bhardwaj, S. P. Singh and M. Shukla, "*Finite element modeling and analysis of implant scaffolds*", International Conference on Advances in Mechanical, Industrial, Automation and Management Systems (AMIAMS), pp. 358-362, 2017.
  9. Y. Tripathi and M. Shukla, "*Triply periodic minimal surface based geometry design of bio-scaffolds*", International Conference on Advances in Mechanical, Industrial, Automation and Management Systems (AMIAMS), pp. 348-350, 2017.
  10. S. P. Singh, T. Bhardwaj and M. Shukla, "*Lattice modeling and finite element simulation for additive manufacturing of porous scaffolds*", International Conference on Advances in Mechanical, Industrial, Automation and Management Systems (AMIAMS), pp. 333-336, 2017.
  11. A. Das and M. Shukla, "*Surface morphology and adhesion studies of pulsed laser deposited hydroxyapatite thin film coatings on SS254 stainless steel*", 17<sup>th</sup> Annual International RAPDASA Conference, November 2016.
  12. A. Tripathi, M. Shukla and S. Shukla, "*Finite Element Analysis of Void and Resin Flow in VARTM*", International Conference on Advanced and Agile Manufacturing Systems, Sultanpur, December 2015.
  13. A. Das, M. Shukla and N. Kumar, "*Surface morphology and adhesion studies of pulsed laser deposited hydroxyapatite thin film coatings on SS254 stainless steel*", DAE-BRNS National Laser Symposium, Indore, December 2015.
  14. S. Kumar, M. Shukla and A. Das, "*Thermo-Mechanical Finite Element Analysis of Multilayer Laser Metal Deposition*", 16<sup>th</sup> Annual International RAPDASA Conference, Pretoria, November 2015.
  15. A. Tripathi and M. Shukla, "*Determination of Permeability of Polymer Matrix Composites Produced by VARTM*", 11th International Conference on Production, Mechanical And Automobile Engineering, Jaipur, October 2015.
  16. M. Tlotleng, E. Akinlabi, M. Shukla and S. Pityana, "*Bioceramic coating of hydroxyapatite fabricated on Ti-6Al-4V with Nd-YAG laser*", Proc. SPIE 9356, High-Power Laser Materials Processing: Lasers, Beam Delivery, Diagnostics, and Applications IV, 93560X (March 9, 2015); doi:10.1117/12.2079169, San Francisco.
  17. M. Tlotleng, E. Akinlabi, M. Shukla and S. Pityana, "*The Microstructural and Mechanical Characterizations of Hydroxyapatite Coating Fabricated Using Nd:YAG Laser*", 2015 TMS Annual Meeting & Exhibition Symposium: Recent Developments in Biological, Structural and Functional Thin Films and Coatings.
  18. A. Kumar, M. Shukla, "*Simulation of void elimination from vacuum enhanced resin infusion technology (VERiTy) laminates during external consolidation*", PFAM, IIT Roorkee, Dec. 2014
  19. V. Verma and M. Shukla, "*Laser metal deposition thermal analysis using finite element method*", 15<sup>th</sup> Annual International RAPDASA Conference, Cape town, November 2014.

20. V. P. Kommula, O. Kanchireddy, M. Shukla and T. Marwala, “*Effect of Acid Treatment on the Chemical, Structural, Thermal and Tensile Properties of Napier grass fiber strands*”, International Conference on Advances in Marine, Industrial and Mechanical Engineering (ICAMIME'2014), April 2014, Johannesburg.
21. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, “*Characterising the Effect of Processing Parameters on the Porosity of Laser Deposited Titanium Alloy Powder*”, Proceedings of the International Multi Conference of Engineers and Computer Scientists, IMECS 2014, March 2014, Hong Kong.
22. T. J. Pilusa, M. Shukla and E. Muzenda, “*Economic Assessment of Waste Tyres Pyrolysis Technology: A Case study for Gauteng Province, South Africa*”, International Institute of Engineers Conference, Cape Town- South Africa, 2 December 2013, pp. 79-87.
23. V. P. Kommula, O Kanchireddy, M. Shukla and T. Marwala, “*Tensile Properties of Long Untreated and Alkali Treated Napier Grass Fiber Strands / Epoxy Composites*”, International Conference on Chemical, Mining and Metallurgical Engineering, Johannesburg-South Africa, 27-28 November 2013, pp. 269-274.
24. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, “*Statistical Investigation of Process Parameter Influence on Surface Finish of Laser Metal Deposited Titanium Alloy*”, Proceedings of 2nd International Conference of Business, Engineering and Applied Sciences, Toronto, Canada, pp. 14-20, Nov. 2013.
25. V. P. Kommula, O Kanchireddy, M. Shukla and T. Marwala, “*Morphology and Chemical Resistance of Napier Grass Fibre Strands / Epoxy Resin Composites*”, Proceedings of 13th Botswana Institution of Engineers Biennial Conference, 15-18 October, 2013, Gaborone, Botswana, pp. 215-221.
26. T. J. Pilusa, M. Shukla and E. Muzenda, “*Tyre Derived Fuel as an Alternative Fuel for CI Engines*”, 2<sup>nd</sup> International Conference on Environment, Agriculture and Food Sciences (ICEAFS'2013) August 25-26, 2013 Kuala Lumpur (Malaysia), pp. 116-120.
27. M. Shukla, A. K. Mishra and R. K. Gupta, “*Simulated Annealing based Optimization of Inventory Costing Problem*”, International Conference on Advanced Engineering Optimization Through Intelligent Techniques (AEOTIT), 1-3 July 2013, Surat, India.
28. S. A. Akinlabi, M. Shukla and T. Marwala, “*Laser Beam Forming: Experimental Investigation and Statistical Analysis of the Effects of Parameters on Bending Angle*”, 8th ASME 2013 Manufacturing Science and Engineering Conference (MSEC2013), June 10-14, 2013, Madison, Wisconsin.
29. V. P. Kommula, O. Kanchireddy, M. Shukla and T. Marwala, “*Impact strength and surface morphology of Alkali treated Napier grass fiber strands reinforced Epoxy composites*”, International Conference on Chemical and Environmental Engineering, pp. 57-60, April 2013, Johannesburg. (**Best Session Paper Presentation Award**)
30. M. Shukla and P. Stachelhaus, “*Impact Analysis of Mining Shaft Station Stopping Device*”, International Conference on Mining, Mineral Processing and Metallurgical Engineering, pp. 191-195, April 2013, Johannesburg.
31. J. Pilusa, E. Muzenda and M. Shukla, “*Effect of In-line Post Diesel Filtration on Engine Exhaust Emissions and Fuel Consumption*”, International Conference on Chemical and Environmental Engineering, pp. 1-9, April 2013, Johannesburg.
32. S Pityana, R M. Mahamood, E T. Akinlabi and M Shukla, “*Gas Flow Rate and Powder Flow Rate Effect on Properties of Laser Metal Deposited Ti6Al4V*”, Proceedings of the International MultiConference of Engineers and Computer Scientists, Vol II, IMECS 2013, ISBN: 978-988-19252-6-8, pp. 848-851, March 2013, Hong Kong.
33. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, “*The Role of Transverse Speed on Deposition Height and Material Efficiency in Laser Deposited Titanium Alloy*”, Proceedings of the International MultiConference of Engineers and Computer Scientists, Vol II, IMECS 2013, ISBN: 978-988-19252-6-8, pp. 876-881, March 2013, Hong Kong.
34. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, “*Laser Metal Deposition of Ti6Al4V: A Study on the Effect of Laser Power on Microstructure and Microhardness*”, Proceedings of the International MultiConference of Engineers and Computer Scientists, Vol II, IMECS 2013, ISBN: 978-988-19252-6-8, pp. 994-999, March 2013, Hong Kong.
35. K. V. Parasuram, K. Obi Reddy, M. Shukla, T. Marwala, “*Morphological, structural and thermal characterization of acetic acid modified and unmodified Napier grass fiber strands*”, 7th IEEE

- International Conference on Intelligent Systems and Control (ISCO), ISBN: 978-1-4673-4359-6, pp. 506 – 510, Coimbatore, January 2013.
36. A. Kumar and M. Shukla, “*Numerical Simulation of Wet Expansion Compliance of Reinforcement in VERITy*”, International Congress on Computational Mechanics and Simulation (ICCMS), IIT Hyderabad, December 2012.
  37. A. Kumar and M. Shukla, “*Compaction characteristics of the preform during the radial and linear infusion schemes during vacuum enhanced resin infusion technology (VERITy)*”, 21<sup>st</sup> International Symposium on Processing and Fabrication of Advanced Materials (PFAM), IIT Guwahati, 175-180, December, 2012.
  38. R. Gudani and M. Shukla, “*Controlled Depth Abrasive Water Jet Cutting of Grade 2 Titanium and Regression Modeling*”, International Conference on Current Trends in Engineering and Management (ICCTEM), Mysore, July 2012.
  39. M. B. Mocketla and M. Shukla, “*Design and finite element analysis of FRP LPG cylinder*”, International Conference on Mechanical and Industrial Engineering (ICMIE), ISBN: 978-93-82208-11-2, August 2012, Goa.
  40. K V Parasuram, K Obi Reddy, M Shukla, T Marwala, “*Influence Of Alkali Treatment On Mechanical Properties Of Napier Grass Fiber Reinforced Epoxy Composites*”, Annual International Conference on COMPOSITES/NANO ENGINEERING, ICCE-20 July 2012, Beijing, China.
  41. K V Parasuram, K Obi Reddy, M Shukla, T Marwala, “*Mechanical properties of Napier grass fiber reinforced epoxy composites*”, 3<sup>rd</sup> International Science & Technology Conference (ISTEC), ISSN: 2116 - 7383, Dubai, pp. 810-814, December 2012.
  42. K V Parasuram, K Obi Reddy, M Shukla, T Marwala, “*A review on natural fiber- epoxy based composites*”, 3<sup>rd</sup> International Science & Technology Conference (ISTEC), ISSN: 2116 -7383, Dubai, December 2012.
  43. T. U. Siddiqui and M. Shukla, “*Experimental and analytical investigations for Abrasive Waterjet hole trepanning of thick Kevlar-epoxy composites used in ballistic applications*”, 21st International Conference on Water Jetting, Ottawa, ISBN - 9781855981317, pp. 35-45, 2012.
  44. T. U. Siddiqui and M. Shukla, “*Abrasive Water Jet Cutting Of Glass-Epoxy Composites: Multi Attribute Hybrid Optimization Using Principal Component Analysis*”, International Conference on Innovations in Design and Manufacturing, December 2012, Jabalpur, India.
  45. E. T. Akinlabi, Rasheedat M. Mahamood, M. Shukla, and S. Pityana. “*Effect of Scanning Speed on Material Efficiency of Laser Metal Deposited Ti6Al4V*”, International Conference on Aerospace, Mechanical, Automotive and Materials Engineering, Paris, France, November, 2012.
  46. M. Shukla, Rasheedat M., E. T. Akinlabi, and S. Pityana, “*Effect of Laser Power and Powder Flow rate on properties of Laser Metal Deposited Ti6Al4V*”, International Conference on Aerospace, Mechanical, Automotive and Materials Engineering, Paris, France, November, 2012.
  47. M. Rasheedat, E. T. Akinlabi, M. Shukla and S. Pityana, “*Evolving Properties of Laser Metal Deposited Ti6Al4V*”, 13<sup>th</sup> Annual International RAPDASA Conference, Sun City, October 31-November 2, 2012.
  48. R. M. Mahamood, E. T. Akinlabi, M. Shukla and S. Pityana, “*Effect of Laser Power on Material Efficiency, Layer Height and Width of Laser Metal Deposited Ti6Al4V*”, Proceedings of The World Congress on Engineering and Computer Science 2012, ISBN: 978-988-19252-4-4, pp. 1433-1438,
  49. A. Kumar and M. Shukla, “*Effect of Enhancing the Infusion Pressure on Compaction Behaviour of Preform in Vacuum Enhanced Resin Infusion Technology Composite Manufacturing Process*”, 8th South African Conference on Computational and Applied Mechanics (SACAM), 3-5 September, 2012, pp. 251-256, Johannesburg, South Africa.
  50. K. Sharma and M. Shukla, “*Molecular Dynamics Simulation of the Effect of Amine Functionalization on the Elastic Properties of Single and Double Walled Carbon Nanotubes*”, 8th South African Conference on Computational and Applied Mechanics (SACAM), 3-5 September, 2012, pp. 244-250, Johannesburg, South Africa.
  51. Rasheedat M., E. T. Akinlabi, M. Shukla and S. Pityana, “*Functionally Graded Material: An Overview*”, Proceedings of the World Congress on Engineering 2012, Vol III, pp. 1593-1597, International Conference of Manufacturing Engineering and Engineering Management (ICMEEM'12), July 4 - 6, 2012, London, U.K., ISBN: 978-988-19252-2-0.

52. A. Kumar and M. Shukla, “*Numerical Simulation of the Vacuum Enhanced Resin Infusion Technology (VERITY) process of composite manufacturing*”, International Conference of Advanced Manufacturing Technology (ICAMT), Chennai, India, June 2012.
53. K. Sharma, A. Tomar, K. K. Saxena and M. Shukla, “*Molecular dynamics evaluation of mechanical properties of carbon nanotubes with number of Stone-Wales defects*”, 2011 International Conference on Nano Science, Engineering and Technology (ICONSET), Chennai, pp. 247-251, November 2011.
54. K. Sharma, K. Kumar, M. Shukla, V. Kumar and R. Mittal, “*Calculation of Elastic Properties of PMMA/CNT Using Molecular Dynamics Simulations*”, 4<sup>th</sup> International Conference on Computer and Electrical Engineering (ICCEE 2011), Paper 76, Singapore, pp. 469-473, October 2011.
55. K. Sharma, K. Kumar, R. Kumar and M. Shukla, “*Molecular Dynamics Study of Mechanical Properties of Carbon Nanotube Reinforced LY556 Composites*”, 4<sup>th</sup> International Conference on Computer and Electrical Engineering (ICCEE 2011), Paper 77, Singapore, pp. 474-477, October 2011.
56. S. A. Akinlabi, E. T. Akinlabi and M. Shukla, “*The Effect of Laser Beam on the microstructure and Mechanical properties of AISI 1008*”, ASME 2011, Applied Mechanics and Materials Conference, McMat2011 Chicago, Illinois, USA, May 30-June 02, 2011.
57. N. Kumar and M. Shukla, “*Finite Element Analysis of the Effect of Multiple Abrasive Particle Impact on Erosion Behaviour of Titanium Alloy in Abrasive Water Jet Machining*”, International Conference on computational Methods in Engineering and Science - FEMTEC, Tahoe, USA, May 2011.
58. K. Sharma and M. Shukla, “*Micromechanics Modeling and Experimental Study of Mechanical Properties of Multiscale Carbon Fiber-Epoxy-CNT Composites*”, ASME 2011, Applied Mechanics and Materials Conference, McMat2011 Chicago, Illinois, USA, May 30-June 02, 2011.
59. D. M. Reddy, K. Sharma and M. Shukla, “*Effect of Amine functionalized Multi-walled Carbon Nanotubes on the Mechanical Properties of Carbon Fiber/Epoxy composites*”, International Conference on Synthesis, Characterization, Consolidation and Modeling of Nano Materials, PSG Coimbatore, India, pp. 222-227, March 5-6, 2010.
60. K. K. Saxena, A. K. Upadhyaya and M. Shukla, “*Evaluation of Mechanical Properties of Carbon Nanotube Reinforced Polymer Composite Using Molecular Dynamics Simulation*”, International Conference on Theoretical, Applied, Computational and Experimental Mechanics, ICTACEM 2010, IIT Kharagpur, India, December 27-29, 2010.
61. C. Badiger, M. Shukla and S. B. Mishra “*FE Analysis of prediction of Young’s modulus of defective single wall carbon nanotubes*”, International Conference on Carbon Nanotechnology: Potential and Challenges, IIT Kanpur, India, December 15-17, 2010.
62. N. Kumar, M. Shukla and R. K. Patel, “*Finite Element Modeling of Erosive Wear in Abrasive Jet Machining*”, International Conference on Theoretical, Applied, Computational and Experimental Mechanics, ICTACEM 2010, IIT Kharagpur, India, December 27-29, 2010.
63. T. U. Siddiqui and M. Shukla, “*Modeling of Depth of Cut in Abrasive Waterjet Cutting of Thick Kevlar-Epoxy Composites*”, International conference APCMP2010, University of New South Wales, Sydney, Australia, June 2010.
64. T. U. Siddiqui, M. Shukla and P. B. Tambe, “*Comparative Investigation of Abrasive Waterjet Cut Kerf Quality Characteristics for Aramid, Glass and Carbon Fiber Reinforced Composites Used in Transport Aircraft Applications*”, 2009 American WJTA Conference and Expo, Houston, Texas, August 18-20, 2009.
65. T. U. Siddiqui and M. Shukla, “*Experimental study and Optimization of Multiple Performance Characteristics in Abrasive Water Jet Cutting of Glass Fiber Reinforced Polymer Composites*”, 2nd International and 23rd AIMTDR Conference, IIT Madras, December 15-17, 2008.
66. T. U. Siddiqui, M. Shukla and P. B. Tambe “*Minimization of Surface Roughness in Abrasive Water Jet Cutting of Transport Aircraft Glass Fiber Composite Components*”, 19th International Conference on Water Jetting, Nottingham, UK, ISBN: 9781855981034, 15 - 17 October 2008.
67. T. U. Siddiqui and M. Shukla, “*Optimization of surface finish and kerf taper in design of experiments based abrasive water jet cutting aramid composites*”, ICMR 08 - 6th International Conference on Manufacturing Research, 9th-11th September 2008, Brunel University, UK.

68. S. Kolachalama, K. Kuppa, D. Mattam and M. Shukla, “*Thermal Analysis of Radiator Core in Heavy Duty Automobile*”, ASME 2008 Heat Transfer, Fluids, Energy and Energy Nano Conferences, August 10-14, 2008, Jacksonville, Florida, USA.
69. T. U. Siddiqui and M. Shukla, “*Response Surface Modeling and Optimization of Surface Finish in Abrasive Water Jet Cutting of Aerospace Grade Carbon Composites*”, International Conference On Aerospace Science and Technology, INCAST, June 26-28, 2008, NAL Bangalore.
70. T. U. Siddiqui and M. Shukla, “*Optimization of Process Parameters for Abrasive Water Jet Machining Of Kevlar-Epoxy Composites Using Taguchi Method*”, INAE-DAE International Conference on Advances In Manufacturing Technology (ICAMT 2008) for Young Engineers, February 6-8, 2008, IIT Chennai, (**Best Paper Award**)
71. M. Shukla, A. K. Singh, N. N. Kishore and S. G. Dhande, “*Minimization of spring-in of angled composite laminates manufactured by Autoclave Vacuum Bagging – A Taguchi method based experimental approach*”, International and INCCOM-6 Conference on Future Trends in Composite Materials and Processing, December 12-14, 2007.
72. M. Shukla and S. Jaiswal, “*Impact analysis of Skid board Airdrop*”, Presented at the Altair Engineering's – 2<sup>nd</sup> South Asia CAE Users Conference 2006, Bangalore, Aug. 3-5, 2006 (**Special award**).

#### **National Conference Proceedings:**

1. “*Mathematical modeling and optimized design of abrasive water jet cutting process of aircraft grade glass fiber layered composites*” in: Proceedings of National conference on Recent Advances in Mechanical and Production, COET, GBPUAT, Pantnagar, 12-14 Feb., 2009.
2. “*Buckling Analysis of Carbon Nanotubes and Nanocomposites – A FEM Based Approach*”, ISAMPE National Conference on Composites – INCCOM 7, NAL Bangalore, December 4-5, 2008.
3. “*Conceptual PDM Implementation Framework for Manufacturing of Polymer Composite Components in Aerospace Industry*”, National Conference on ENGINEERING DESIGN.IN 2007, IISc Bangalore, August 9-11, 2007.
4. “*Molecular Dynamics Simulation of CNT based Nanocomposites*”, Fifth ISAMPE National Conference on Composites, ASL (DRDO) Hyderabad, November 24-25, 2006.
5. “*Development of a Graphical Simulation Tool for Reconfigurable Surface Tooling*”, National Seminar on Advances in Product Development (APD 2006), ISBN – 81-224-1851-1, MNNIT Allahabad, February 2006.
6. “*Geometric Modeling and FEM Analysis of Lumbar Disc of Human Spine*”, National Seminar on Advances in Product Development (APD), ISBN – 81-224-1851-1, MNNIT Allahabad, February 2006.
7. “*Finite Element Method Based Seismic Analysis of a Concrete Gravity Dam*”, National Conference on Earthquake Disaster: Technology and Management, February, 2006, Allahabad

#### **8a) JOURNAL REVIEWER:**

- 1) Composites – Part A (Engineering) (Elsevier)
- 2) Composites – Part B (Engineering) (Elsevier)
- 3) Journal of Optics and Laser Technology (Elsevier)
- 4) Journal of Materials and Design (Elsevier)
- 5) International Journal of Advanced Manufacturing Technology (Springer)
- 6) JOM
- 7) Journal of Laser Applications
- 8) Journal of Reinforced Plastics and Composites (Sage Publications)
- 9) Plastics, Rubber and Composites: Macromolecular Engineering
- 10) Machining Science and Technology (Taylor and Francis)

- 11) Journal of Manufacturing Technology Management (Emerald)
- 12) Computer Aided Design (Elsevier)
- 13) Journal of Process Mechanical Engineering - iMechE- Part E
- 14) Journal of Design Research (Inderscience)
- 15) International Journal of Vehicular Technology (Hindawi Publishing Corp.)
- 16) Precision Engineering (Elsevier)
- 17) Applied Surface Science (Elsevier)
- 18) International Journal of Machining and Machinability of Materials (Inderscience)
- 19) International Journal of Manufacturing, Materials & Mechanical Engineering - (IGI Global)
  - Reviewer of South African NRF Unrated Researcher Support Proposals, WITS University, Johannesburg, Masters Theses.
  - Reviewer of Estonian NRF and DST India funding proposals.

#### **8b) POST-DOC SUPERVISION – 01**

1. Dr. K Obi Reddy, in the field of *Natural Fibre Composites* (Feb. 2011 – Feb. 2014).

#### **8c) PHD THESIS SUPERVISION – (Completed – 09, In progress – 05)**

##### **At MNNIT Allahabad - Completed**

1. Dr. T. U. Siddiqui, *Abrasive water jet cutting of continuous fiber reinforced polymer composites: Experimental studies, modeling and multi-objective optimization*, (Awarded in Oct. 2010).
2. Dr. K. Sharma, *Mechanical Properties of Carbon Fiber / Functionalized Multi-walled Carbon Nanotubes / Epoxy Multiphase Composites: Modeling, Simulation and Characterization*, (Awarded in Aug. 2014).
3. Dr. A. Kumar, *Simulation of Mould Filling in Vacuum Enhanced Resin Infusion Technology (VERITy) Fiber Composites Manufacturing Process*, (Awarded in Nov. 2014).
4. Dr. A. Das, *Pulsed Laser Deposition and Magnetic Sputtering Biocoatings for Orthopaedic Implants*, (Awarded in August 2017).
5. Dr. T. Bhardwaj, *Laser Additive Manufacturing of Maraging Steel and Titanium-Molybdenum alloy* (Awarded in August 2019).
6. Dr. C. Swaroop, *Development of Polylactic Acid / Nano – Magnesium Oxide based Biocomposite Films for Food Packaging Applications* (Awarded in August 2019).

##### **At MNNIT Allahabad - Ongoing**

1. Mr. Y. Tripathi, *Lattice Design and Additive Manufacturing of TPMS Bio scaffolds* (Ongoing from July 2015).
2. Mr. R. Verma, *Fracture and Fatigue Studies on Hybrid Glass-Kenaf Epoxy Composites* (Ongoing from July 2015).

3. Mr. A. Chauhan, *Corrosion and Wear Studies of DMLS Ti* (Ongoing from January 2016).
4. Mr. Anuj Kumar, *Polymer Composites*, (Ongoing from July 2019).

**At Univ. of Johannesburg - Completed**

1. Dr. R. M. Mahamood, *Characterization of Laser Metal Deposition of Functionally Graded Titanium Alloy Composites*, (Co-Supervisor) (Awarded in April 2014).
2. Dr. V. P. Kommula, *Development of Elephant Grass Fiber Composites: Preparation, Properties and Applications*, (Awarded in Aug. 2014).
3. Dr. T. J. Pilusa, *Refined Waste Tyre Pyrolysis Fuel as Diesel Additive for Compression Ignition Engines*, (Co-supervisor) (Awarded in Aug. 2014).
4. Dr. M. Tlotleng, *Laser Assisted Cold Spraying*, (Co-supervisor) (Awarded in Sept. 2015).
5. Dr. S. A. Akinlabi, *Experimental Study and FEM Modeling of Laser Beam Formed Steel for Enhanced Structural Integrity* (Awarded in November 2016).

**8e) MEng. / MTech. THESIS SUPERVISION: 25 completed + 02 ongoing**

Sl.	Student Name	Year	Title of the Dissertation
1.	Sudhakar Singh	2019	Thermo-mechanical and fatigue simulation of additively manufactured metal alloys
2.	Naveen Kumar	2019	Design of a human safety device for frontal impact of locomotive
3.	Aniket Kumar	2019	Design and fabrication of manual brick carrying device for construction site
4.	Sumit Ghosh	2017	CAD, FEA and Additive Manufacturing of coronary heart stent
5.	S P Singh	2017	Lattice Design for Additive Manufacturing of Orthopaedic Implants
6.	Vivek Patel	2017	FEM based Damage analysis of Kenaf-Epoxy Composites
7.	Tarun Singh	2017	Rubber tyre design using FEM
8.	Sumit Shukla	2016	Multi-physics Comsol and LIMS based Simulation studies in VARTM Composites Manufacturing
9.	Manish Dwivedi	2016	Multi-physics FE Modeling and Analysis of Direct Laser Metal Deposition
10.	Abhinav Tripathi	2015	Finite Element Analysis of Void and Resin Flow in VARTM
11.	Saurav Kumar	2015	Thermo-mechanical Finite Element Analysis of Multi layer Laser Metal Deposition
12.	Vaibhav Verma	2014	Finite Element Modeling of Laser Metal Deposition



13.	Tarun Bhardwaj	2014	Hemispherical Deep Drawing Sheet Hydroforming – Setup Fabrication, Experimentation and Finite Element Simulation (Co-supervisor)
14.	Sanjeev Kumar	2014	Finite Element Analysis of Composite Tower and Nacelle for Wind Turbine
15.	Yugesh M Tiwari	2014	Finite Element Analysis of Rubber Tire
16.	Naresh K Jangra	2010	FEA Simulation of Abrasive Waterjet Machining
17.	Chetan V Badiger	2010	FE Analysis of CNT reinforced Polymer Nanocomposites
18.	Kuldeep Kr. Saxena	2010	MD Simulation of Polymer Nanocomposites (Co-supervisor)
19.	Anuj Anand	2009	Dynamic Analysis of Passenger Rail Wagon using Adams/Rail
20.	Apoorva Sharma	2009	Structural Optimization of Freight Rail Wagon
21.	Brij Kishore	2009	FEM Analysis of FRP Strengthening of RCC beams (Co-supervisor)
22.	Piyush Patel	2008	Finite Element Analysis of CNTs and CNT Nanocomposites
23.	D Madhava Reddy	2008	Fabrication and Mechanical Characterization of Polymer Nanocomposites
24.	Chetan Shah	2008	Static Finite Element Analysis and Dynamic Analysis of Freight Hopper Wagon
25.	J Prasad	2007	Material Characterization of Life Expired Composite Prepregs (Co-supervisor)

**8f) BEng. / BTech. PROJECTS SUPERVISION:** *(Completed –Total 26 at MNNIT and UJ)*

- 1) Combustion Analysis of cow dung and fabrication of cowdung briquette machine (2019).
- 2) CAD and 3d Printing of metallic implants (2016-17).
- 3) Design and fabrication of a hybrid solar water cooler and room heater (2016).
- 4) Design and fabrication of an animal dung briquette making machine (2016).
- 5) Design and fabrication of FRP LPG cylinder (2015).
- 6) Design and fabrication of FRP rescue boat (2015).
- 7) Design of improved railway washing line (2014).
- 8) Material characterization of life expired composite prepregs (2010).
- 9) Material characterization and simulation of polymer nano-composites using molecular dynamics (2009).
- 10) Solid modeling and static FEA of the underframe of a 3-axle freight wagon bogie (2008).
- 11) CNC machining of prismatic shapes on 4 axis vertical machining centre (2007).

12) CAD/CAM of extrusion dies (2006).....

**8h) Ph.D. EXAMINER:**

1. Univ. of Huddersfield, UK
2. Wits University, Johannesburg
3. Chinhoyi University of Technology, Zimbabwe
4. SVNIT, Surat
5. MANIT, Bhopal
6. JNTU Hyderabad
7. Gujarat Technical University, Ahmedabad
8. NIT Nagaland
9. Barkatullah University, Bhopal
10. RGPV, Bhopal
11. Chhattisgarh Swami Vivekanand Technical University (CSVТУ), Bilai
12. GLU Mathura
13. Mahatma Gandhi Chitrakoot Gramodaya Vishwavidhyalaya, Satna
14. Applied Mechanics Department, MNNIT Allahabad

**9. PERSONAL DEVELOPMENT:**

**CONFERENCES / SHORT TERM COURSES ORGANIZED and ATTENDED:**

*\* Organizing Committee member of several international and national conferences.*

1. Coordinator - TEQIP III sponsored 1 week Short term course on "Advances in Composite Materials II", MNNIT Allahabad, To be held in December 2019.
2. Attended International Conference on Advanced Materials and Processes for Defence Applications (ADMAT 2019 MatDef), Hyderabad, Sept. 2019
3. Coordinator - TEQIP sponsored 1 week Short term course on "Advances in Composite Materials", MNNIT, October 2016.
4. Technical Committee Member, 1st International Conference on "Sustainable Materials Processing and Manufacturing, SMPM, Jan. 2017, Univ. of Johannesburg.
5. Organizing Committee Member (Finance Chair), IEEE sponsored International Conference on "Advances in Mechanical, Industrial, Automation and Management Technologies, AMIAMS, Feb. 2017, MNNIT Allahabad.
6. Organizing Committee Member, IEEE sponsored International Conference on Computer, Communication and Management Technologies, ICCCMТ, Sept. 2016, SPMIT Allahabad.
7. Organizing Committee Member, 6th International and 43rd National Conference on Fluid Mechanics & Fluid Power (FMFP 2016), Dec. 2016, MNNIT Allahabad.
8. Coordinator- 1 week Self-financed Short term course on "Computer Aided Design using Fusion 360 and Autodesk Inventor", MNNIT, May 2016.

9. Attended 1 week Short term course on “Modeling and Simulations at Nanoscale and Nanostructures” at MNNIT by Prof Ram G Mohan, Univ. of North Carolina A&T, March 7-11, 2016.
10. Coordinator- 1 week Self-financed Short term course on Matlab based Optimization and Statistical Data Processing, MNNIT, June 2015.
11. Coordinator- 1 week Self-financed Short term course on Product Design Using Autodesk Inventor, May 2015.
12. Coordinator- 1 week Self-financed Short term course on Digital Prototyping with Autodesk Tools, MNNIT, March 2015.
13. Advisory Committee Member, National Conference on Emerging Trends in Computing and Management Technologies, Feb. 2016, SPMIT Allahabad
14. Organizing Committee Member, National Conference on Product Design and Manufacturing, MNNIT Allahabad, November 2015.
15. Organizing Committee Member, Proposed International Conference on International Committee Member, International Conference on Advances in Marine, Industrial and Mechanical Engineering (ICAMIME'2014), April 2014, Johannesburg.
16. International Committee Member, International Conference on Mining, Mineral Processing and Metallurgical Engineering (ICMMME 2013), November 2013, Johannesburg.
17. Coordinator- 1 week Short term course on Computer Aided Engineering, July 11-15, 2013.
18. Coordinator- 1 week Short term course on Advances in Materials Science and Engineering, July 15-21, 2013.
19. International Committee Member, International Conference on Mining, Mineral Processing and Metallurgical Engineering (ICMMME 2013), April 2013, Johannesburg.
20. 13<sup>th</sup> Annual International RAPDASA Conference, Sun City, October-November 2012.
21. International Committee Member, 25<sup>th</sup> International Congress on Condition Monitoring and Diagnostic Engineering Management, COMADEM2012, 18–20 June, 2012, Huddersfield, UK.
22. Member - Scientific and Organizing committee, 8<sup>th</sup> South African Conference on Computational and Applied Mechanics (SACAM), 3-5 September, 2012, Johannesburg, South Africa.
23. Attended a Short Term Training Programme (STTP) on “Taguchi: A Statistical Technique, December 26–30, 2011, GBU, Greater Noida.
24. Attended a Workshop on “Modelling and Analysis of Dynamic Systems”, December 5-7, 2011, NIT Rourkela.
25. Bio-composites R&D led Industrial Development Programme National Workshop – Natural fibres, bio-resins and bio-composites manufacturing technologies, CSIR Pretoria, 25 October / November 09, 2011.
26. 12<sup>th</sup> Annual International RAPDASA Conference, Vanderbijlpark, November 2011.
27. Coordinator, 2 week Short Term course on “CAD & FEM”, MNNIT Allahabad, July 21 – August 02, 2008, Number of participants – 43.

28. Joint Convener, 1 week Self financed Short Term course on “Finite Element Analysis (Theory and Practice)”, MNNIT Allahabad, January 29 – February 03, 2007, Number of participants – 50.

***Expert lectures organized:***

<b>Name of expert:</b>	<b>Affiliation:</b>	<b>Date:</b>	<b>Title:</b>	<b>No. of participants:</b>	<b>Sponsored by:</b>
Prof J Ram Kumar	IIT Kanpur	09/08/2019	Laser Material Interaction	40	MNNIT Allahabad
Prof B C Ray	NIT Rourkela	26/08/2019	FRP Composites: An alternative structural material	35	MNNIT Allahabad

**10) EXTERNAL VISIBILITY / OUTREACH ACTIVITY:**

***\*Delivered several invited / keynote talks at Conferences/FDPs/STCs.***

***Invited Talks -***

1. Advances and Industrial Applications of Metal Additive Manufacturing Processes Short Term Course On Recent Advances and Industrial Applications of Advanced Machining Processes (RAIAMP-2019), BIET Jhansi, March 2019.
2. "3d Printing - An Introduction", TEQIP III Sponsored Faculty Development Program on Advance Materials, Modelling and Manufacturing. REC Banda, Nov. 2018.
3. "Optimization - Introduction and use of Matlab Toolbox", Two Days National Workshop on Optimization Techniques: Science & Engineering Applications (OTSEA-2018), JL University, Bhopal, Nov. 2018.
4. "Additive Manufacturing - Some recent advances", Amity University, Lucknow, 2018.
5. "Additive Manufacturing of Metals", GSITS, Indore, October 2016.
6. "Optimization using Genetic Algorithm", at Gujarat Technical University, Ahmedabad, March 2016.
7. "Finite Element Analysis of Additive Manufacturing", Keynote Speaker, Short term course on Additive Manufacturing, IPS College of Technology & Management, Gwalior, Feb 2016.
8. "Carbon Nanotube Polymer Composites", Short term Training Program on Nano-manufacturing and Nanotechnology at MANIT Bhopal, December 2015.
9. "Some Advances in Design and Materials", at SPMIT Allahabad, Sept. 2015.
10. "Genetic Algorithms" in 1 week Self-financed Short term course on Matlab based Optimization and Statistical Data Processing, MNNIT, June 2015.
11. "Introduction to Optimization" in 1 week Self-financed Short term course on Matlab based Optimization and Statistical Data Processing, MNNIT, June 2015.
12. "Downstream Applications of CAD" in 1 week Self-financed Short term course on Product Design Using Autodesk Inventor, May 2015.

13. "1d Finite Element Analysis", in AICTE Sponsored 2 week Faculty Development Program on Introduction to Finite Element Analysis, Dronacharya Group of Institutions, Greater Noida, May 2015.
14. "Why CAD" in 1 week Self-financed Short term course on Digital Prototyping with Autodesk Tools, MNNIT, March 2015.
15. "3d Printing", Keynote Talk, 6th International Conference on Mechanical, Production and Automobile Engineering, PSRC, Nov. 2014, Cape Town.
8. "Curve and Surface Modeling" in 1 week Short term course on Advanced Machining Processes, MNNIT, July 2014.
9. "Abrasive Waterjet Machining" in 1 week Short term course on Advanced Machining Processes, MNNIT, July 2014.
10. "FEA of Nanocomposites" in 1 week Short term course on Synthesis and Characterization of Polymer Nanocomposites, MNNIT, July 2013.
11. "Jet Machining Processes" in 1 week Short term course on Advanced Machining Processes, MNNIT, July 2013.
12. "Abaqus based FEM" in 1 week Short term course on Computer Aided Engineering, MNNIT, July 11-15, 2013.
13. "Design of Experiments" in 1 week Short term course on Advances in Materials Science and Engineering, MNNIT, July 15-21, 2013.
14. "Non-linear Dynamic FEM" in 1 week Short term course on Recent Trends in Nonlinear Systems and Dynamics, MNNIT, June 2013.
15. "Finite Element Analysis", Workshop on Modelling and Analysis of Dynamic Systems, December 5-7, 2011, NIT Rourkela.
16. "Stress analysis of Composite Structures", CEP Course on "Emerging trends in Modeling and characterization of Composite Materials", October 13-17, 2008, DMSRDE Kanpur.
17. "Introduction to Finite Element Analysis", AICTE Sponsored Staff Development Program on Experimental & Computational Methods in Fluid Dynamics, MNNIT Allahabad, July 2008.
18. "Polymer Composites", in Workshop on Composite Materials and Processing scheduled for 15-16, March 2008, MMMEC, Gorakhpur.
19. "Applications of Finite Element Analysis", HBTI Kanpur, June 10 2007.
20. "Micro and Nano", AICTE Sponsored Staff Development Program on Design for X, MNNIT Allahabad, June 2007.
21. "Shaping of Composites", AICTE Sponsored Staff Development Program on Advanced Manufacturing Processes, MNNIT Allahabad, March 2007.
22. "Polymer Composites" and "Design and Analysis of Experiments", Short Term Course on "Recent Advances in Composite Materials", January 15 - 16, 2007 at SVNIT Surat.
23. "Carbon Nanotube based Nanocomposites" at ASL / DRDL (DRDO) Hyderabad, in their CEP course on "Carbon nanotubes and Nanotube reinforced composites" February 21-23, 2006.
24. "Polymer Composites – Manufacturing Issues" and "Design of Experiments", QIP Short Term Course on "Ultrasonic Non Destructive Evaluation of Composite Materials", October 3 - 8, 2006 at IIT Kanpur.

25. “Modeling and dynamic fatigue FEM analysis of railway pandrol clip”, Seminar on Finite Element Analysis – Applications and Trends, IIT Kharagpur, June 2006.
26. “Design and Analysis of Experiments”, Short Term Course on Process Machines, MNNIT Allahabad, April 10, 2006
27. “Taguchi Method – A Tool for Design and Process Optimization”, Executive Development Program on Application of Optimization Techniques in Manufacturing, Processing and Service Sectors, MNNIT Allahabad, April 21, 2006.
28. “Tensile Strength Testing of specimen made by FDM RP technique – A Design of Experiment based study”, Short Term Course on “Applications of CAD, CAM and RP”, IT-BHU, Varanasi, December 2003.

#### 11) **ESTEEM, HONOURS AND AWARDS / FELLOWSHIPS:**

1. Member Evaluation Panel, UPPSC Allahabad.
2. Member Interview Committee and Evaluation Panel, SSC Allahabad.
3. Member Faculty Selection Committee/Panel, Several NITs, Government and private engineering colleges.
4. Member Board of Studies, RTU College of Engineering - Kota – 2019-Present.
5. Session Chair - ICCM 2017, Xian China, August 2017
6. Keynote Speaker, Short term course on Additive Manufacturing, IPS College of Technology & Management, Gwalior, Feb 2016.
7. Session Chair Invitation, National Conference on Emerging Trends in Computing and Management Technologies, Feb. 2016, SPMIT Allahabad.
8. Co-Session Chair, National Conference on Product Design and Manufacturing, MNNIT Allahabad, Nov. 2015.
9. Keynote Speaker, 6th International Conference on Mechanical, Production and Automobile Engineering (ICMPAE 2014), Nov. 2014, Cape Town.
4. Session Chair, International Conference on Advances in Marine, Industrial and Mechanical Engineering, April 2014, Johannesburg.
5. Session Chair, International Conference on Mining, Mineral Processing and Metallurgical Engineering, November 2013, Johannesburg.
6. INAE-DAE International Conference on Advances In Manufacturing Technology (ICAMT 2008) for Young Engineers, February 2008, IIT, Chennai, (**Best Paper Award**)
7. Visited Feng Chia University and Toko University, ROC Taiwan and University of Hongkong and Chinese University Hongkong, in August 2007 for 3 weeks.
8. “*Impact analysis of Skidboard Airdrop*”, Presented at the Altair Engineering's – 2<sup>nd</sup> South Asia CAE Users Conference 2006, Bangalore, Aug. 3-5, 2006 (**Special award**).

\* *Visited 15+ foreign countries for professional work*

#### 12) **ADMINISTRATIVE RESPONSIBILITIES AND EXPERIENCE:**

*Current:*

- ❖ Nodal Officer / Convenor - NIRF, 2018-Till date
- ❖ Associate Dean (Planning and Development), 2018-Till date
- ❖ Member – R & C Standing Committee, MNNIT Allahabad, 2018-Till date
- ❖ Member - Department Faculty Advisory Committee (DFAC) – Mechanical Engg., MNNIT Allahabad, 2018-Till date
- ❖ Member - Department Masters Program Committee (DMPC) – Mechanical Engg., MNNIT Allahabad, 2019-Till date

*Past:*

- ❖ President Students' Activity Centre, MNNIT Allahabad, 2016-17.
- ❖ Coordinator (National Board of Accreditation)
- ❖ Deputy Dean (Planning and Development)
- ❖ Officer Incharge – CAD Laboratory, Mechanical Engg. Department
- ❖ Member - Department Masters Program Committee (DMPC) – Mechanical Engg.
- ❖ Member - Department Doctoral Program Committee (DDPC)
- ❖ Member - Departmental Purchase Committee
- ❖ Convener - Department Masters Program Committee (DMPC) – Mechanical Engg.
- ❖ Member-Departmental Masters Program Committee (DMPC) – Applied Mechanics
- ❖ Member-Departmental Post Graduate Committee and DMPC – Applied Mechanics Department and Mechanical Engineering Department, 2008-9
- ❖ Convener-Departmental Accreditation Committee, 2009
- ❖ Member-Departmental Purchase Committee
- ❖ Joint Secretary- Student Society of Mechanical & Production Engineers
- ❖ Officer Incharge – National Cadet Corps, Lawns n Gardens
- ❖ Warden Incharge, Student Hostels
- ❖ OC Cricket, Basketball, Indoor Games etc.

**15) MEMBERSHIP OF PROFESSIONAL BODIES:**

1. Life Member - Institution of Engineers (India)
2. ASME, 2012
3. IAENG

**16) Email:** mukulshukla@mnnit.ac.in; mukulshukla2k@gmail.com

Date –September 30, 2019

**(MUKUL SHUKLA)**