

Address: C 108, Dept. of Mechanical Engg., I.I.T Guwahati
Contact No: +91-9954065023 (mob)
+91-361-2583427 (office)
Fax: +91-361-2582699
E-mail: manasdas@iitg.ernet.in
manas52@gmail.com

Manas Das

AREAS OF INTEREST

- Advanced Finishing and Nano-finishing Processes
- Magnetorheological Finishing (MRF) Process
- Advanced / Non-traditional Machining Processes
- Machining of Advanced Engineering Materials
- Micromachining Process
- Tribology

PUBLICATIONS

Journal (International):

- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Fluid Flow Analysis of Magnetorheological Abrasive Flow Finishing (MRAFF) Process, International Journal of Machine Tools and Manufacture, Vol. 48, pp.415-426, 2008.
- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Analysis of Magnetorheological Abrasive Flow Finishing (MRAFF) Process, International Journal of Advanced Manufacturing Technology, Vol. 38, pp. 613–621, 2008.
- Ajay Sidpara, Manas Das, V.K. Jain, Rheological Characterization of Magnetorheological finishing Fluid, Journal of Materials and Manufacturing Processes, Vol. 24, No. 12, pp.1467-1478, 2009.
- Manas Das, V.K. Jain, P.S Ghoshdastidar, Nano-finishing of stainless-steel tubes using R-MRAFF Process, Machining Science and Technology an International Journal, Vol. 14, No. 3, pp.365-389, 2010.
- Manas Das, Ajay Sidpara, V.K. Jain, P.S. Ghoshdastidar, Parametric analysis of MR polishing fluid using statistical technique, Int. J. Precision Technology, Vol. 2, No. 1, pp.51-63, 2010.
- Manas Das, V.K. Jain, P.S Ghoshdastidar, Investigations into out-of-roundness of internal surfaces of stainless steel tubes finished by R-MRAFF Process, Journal of Materials and Manufacturing Processes, Vol. 26, pp-1073-1084, 2011.
- V. K. Jain, Ajay Sidpara, M. Ravi Sankar, Manas Das, Nanofinishing Techniques: A Review, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, Vol. 226 (2) 327-346, 2012.
- Manas Das, V.K. Jain, P.S Ghoshdastidar, Nanofinishing of flat workpieces using Rotational - Magnetorheological Abrasive Flow Finishing (R-MRAFF) Process, International Journal of Advanced Manufacturing Technology, Vol. 62, pp. 405–420, 2012.
- Manas Das, V.K. Jain, P.S Ghoshdastidar, CFD simulation and experimental investigations into magnetic field assisted nano-finishing process, Proc. IMechE Part B: J Engineering Manufacture, Vol. 226 (7), pp. 1143–1158, 2012.
- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Estimation of magnetic and rheological properties of MR polishing fluid and their effects on magnetic field assisted finishing process, Int. J. Precision Technology, Vol. 4, No. 3/4, pp.247-267, 2014.
- Manas Das, V.K. Jain, P.S Ghoshdastidar, A 2D CFD simulation of MR polishing medium in magnetic field-assisted finishing process using electromagnet, International Journal of Advanced Manufacturing Technology, Vol. 76, Issue 1, pp. 173–187, 2015.
- Anwesa Barman, Manas Das, Simulation of Magnetic Field assisted Finishing (MFAF) Process Utilizing Smart MR Polishing Tool, Journal of The Institution of Engineers (India): Series C, 2016, DOI 10.1007/s40032-016-0235-z.

- Anwesa Barman, Manas Das, Design and Fabrication of a Novel Polishing Tool for Finishing Freeform Surfaces in Magnetic Field assisted Finishing (MFAF) Process, Precision Engineering, DOI 10.1016/j.precisioneng.2017.01.010,
- Editorial: Special Issue on enhancing the performance of traditional machining, Int. J. Machining and Machinability of Materials, Vol. 18, Nos. 5/6, 2016, pp. 449-451, Uday S. Dixit and Manas Das
- Prediction of weld-induced distortion of large structure using equivalent load technique, Arpan Kumar Mondal, Anche Lohit, Pankaj Biswas, Swarup Bag and Manas Das, DOI: 10.1177/0954405416646309
- A Novel Plasma assisted atomistic surface finishing on freeform surfaces of fused silica, Manas Das, D. Sam Dayala Dev, Enni Krisha, International Journal of Precision Technology (Accepted)

Conference:

- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Computer Simulation of Magnetorheological Abrasive Flow Finishing Process, Proc. 4th National Conference on Precision Engineering, Jadavpur University, Kolkata, December 16-17, 2005, pp. 350-356.
- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Analysis of Magnetorheological Abrasive Flow Finishing (MRAFF) Process, Proc. 1st International & 22nd AIMTDR Conference-2006, December 21-23, 2006, IIT Roorkee, pp.881-886.
- Manas Das, Ajay Sidpara, V.K. Jain, P.S. Ghoshdastidar, Rheological Characterization of Magnetorheological Polishing Fluid for Magnetorheological Abrasive Flow Finishing (MRAFF) Process, Proc. of the 2nd International & 23rd AIMTDR Conference-2008, December 15-17, 2008, IIT Chennai, pp.455-460.
- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Parametric Study of Process Parameters and Characterization of Surface Texture Using Rotational Magnetorheological Abrasive Flow Finishing (R-MRAFF) Process, Proc. of the ASME 2009 International Manufacturing Science and Engineering Conference MSEC2009, October 4-7, 2009, West Lafayette, Indiana, USA, paper ID MSEC2009-84320.
- V.K. Jain, Pankaj Singh, Puneet Kumar, Ajay Sidpara, Manas Das, V.K. Suri, R. Balasubramaniam, Some Investigations into Magnetorheological Finishing (MRF) of Hard Materials, Proc. of the ASME 2009 International Manufacturing Science and Engineering Conference MSEC2009, October 4-7, 2009, West Lafayette, Indiana, USA, Paper ID MSEC2009-84335.
- A.K. Nayak, V.K. Jain, V. Raghuram, Manas Das, Theoretical investigations into roughness of the surface machined by Abrasive waterjet machining (AWJM), Proc. of the 3rd International & 24th AIMTDR Conference-2010, December 13-15, 2010, A.U. College of Engineering (A), Andhra University, Visakhapatnam.
- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Simulation of surface finish and 2D CFD simulation of MR polishing medium in magnetic field assisted finishing process, Proc. of the 4rd International & 25th AIMTDR Conference-2012, December 14-16, 2012, Jadavpur University, Kolkata.
- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Estimation of Magnetic and Rheological Properties of MR Polishing Fluid and their Effects on Magnetic Field Assisted Finishing Process, International Conference on Precision, Meso, Micro And Nano-Engineering (COPEN-8), NIT Calicut, Calicut, December 13-15, 2013, pp. 529-535,
- C. Kumar, M. Das, P. Biswas (2014), A 3-D finite element analysis of transient temperature profile of Laser welded Ti-6Al-4V alloy, 5th International & 26th All India Manufacturing Technology, Design and Research Conference December 12-14, IIT Guwahati, Assam, India,
- Anwesa Barman, Chandan Kumar, Manas Das, Analysis of magnetic field assisted finishing (MFAF) process parameters for finishing brass workpiece using Soft-Computing Technique, Proc. of the 5th International & 26th All India Manufacturing Technology, Design and

- Research Conference (AIMTDR 2014) IIT Guwahati, December 12–14, 2014, pp. 45 (1-6).
- Anwesa Barman, Manas Das, Ankur Singh, Modeling and Simulation of Magnetic Field Assisted Finishing Process, Proc. of the 5th International & 26th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2014) IIT Guwahati, December 12–14, 2014, pp. 48 (1-6).
 - Anupam Alok, Manas Das, Fractal Analysis of Cutting Forces in Hard Turning for Correlating, International Conference on Precision, Meso, Micro and Nano-Engineering (COPEN-9), IIT Bombay, December 10-12, 2015, Paper ID 67.
 - Pritam Akhuly, Anwesa Barman, Manas Das, Heat transfer analysis of Magnetorheological fluid in Magnetic Field Assisted Finishing process, International Conference on Precision, Meso, Micro And Nano-Engineering (COPEN-9), IIT Bombay, December 10-12, 2015, Paper ID 68.
 - Anwesa Barman, Manas Das, Design and Development of Novel polishing Tool for Finishing of Freeform Surfaces in Magnetic Field Assisted Finishing Process, International Conference on Precision, Meso, Micro And Nano-Engineering (COPEN-9), IIT Bombay, December 10-12, 2015, Paper ID 70.
 - D.Sam Dayala Dev, Enni Krishna, Manas Das, A Novel Plasma Assisted Atomistic Surface Finishing on Free Form Surfaces of Fused Silica, International Conference on Precision, Meso, Micro And Nano-Engineering (COPEN-9), IIT Bombay, December 10-12, 2015, Paper ID 127.
 - Chandan Kumar, Manas Das, P Bhargava, C H Premsingh, C P Paul, Effect of welding parameters on the mechanical properties of laser welded Ti-6Al-4V alloy, International Conference on Precision, Meso, Micro and Nano-Engineering (COPEN-9), IIT Bombay, December 10-12, 2015, Paper ID 129.
 - Chandan Kumar, Manas Das, P Bhargava, C P Paul, Finite element method based numerical simulation of laser beam welded titanium alloy (Ti-6Al-4V), International Conference on Precision, Meso, Micro and Nano-Engineering (COPEN-9), IIT Bombay, December 10-12, 2015, Paper ID 132.
 - Anwesa Barman, Manas Das, Analysis of Heat Generation in Magnetorheological Polishing Medium During Finishing in Magnetic Field Assisted Finishing Process, Indian Chemical Engineering Congress, 68th Annual Session of Indian Institute of Chemical Engineers (CHEMCON 2015), IIT Guwahati, December 27-30, 2015, Paper ID FM 095.
 - Anwesa Barman, Manas Das, Optimizing Toolpath Generation in Magnetic Field assisted Finishing Process during Nanofinishing of Biomaterials with a Novel Tool, Proc. of the 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016) College of Engineering Pune, Maharashtra, December 16-18, 2016 (Paper ID 144).
 - Anupam Alok, Manas Das, Prediction of Surface Roughness in Hard Turning by Fractal Approach and its Comparison with Experimental Results, Proc. of the 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016) College of Engineering Pune, Maharashtra, December 16-18, 2016 (Paper ID 583).
 - Chandan Kumar, Manas Das, Premsingh, C.P Paul, Singh, Effect of Heat input and Defocussing Distance on Weld Quality of Laser Beam Welded Titanium Alloy, Proc. of the 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016) College of Engineering Pune, Maharashtra, December 16-18, 2016 (Paper ID 586).
 - Deepak Mylavarapu, R. Ganesh Narayanan, Manas Das, Prediction of critical thinning during self-pierced riveting of sheets, Proc. of the 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016) College of Engineering Pune, Maharashtra, December 16-18, 2016 (Paper ID 594).
 - D Sam Dayala Dev, Enni Krishna, Manas Das, Development of Novel Finishing Process for Precision Freeform / Complex Shaped Glass Components by Bulk Plasma Processing, Proc. of the 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016) College of Engineering Pune, Maharashtra, December 16-18, 2016 (Paper ID 585).

Book Chapter:

- "Chapter 14: Chemo Mechanical Polishing", Manas Das, Ajay Sidpara, V.K. Jain, Introduction to Micromachining, Narosa Publishing House Pvt. Ltd., 2010.
- "Chapter 1: Introduction to Micromanufacturing", V.K. Jain, Ajay Sidpara, Mamilla Ravi Sankar, Manas Das, Micromanufacturing Processes, Taylor & Francis, CRC Press, USA, 2012.
- C. Kumar, M. Das, P. Biswas (2015), A 3-D finite element analysis of transient temperature profile of laser welded Ti-6Al-4V alloy, Lasers Based Manufacturing, Topics in Mining, Metallurgy and Materials Engineering, Springer, pp. 421-440, DOI: DOI 10.1007/978-81-322-2352-8_21
- "Prediction of Temperature Evolution During Self-Pierced Riveting of Sheets", S. Deepak, R. Ganesh Narayanan, Manas Das, Manufacturing Process Modeling and Optimization Strategies, Editor's Name: Dr Mohan Pradhan, Dr Raja Das, IGI Global Publication, Hershey PA 17033-1240, USA

Popular Magazine:

- Manas Das, V.K. Jain, P.S. Ghoshdastidar, Computer Simulation of Nanofinishing Process, Directions (Quarterly magazine of IIT Kanpur), Vol.7 (3), pp.23-28, February 2006.

Book:

- Manas Das, V. K. Jain, P. S. Ghoshdastidar, Nanofinishing process using magnetorheological polishing medium, LAP Lambert Academic Publishing GmbH, Germany, 2012.

Patent:

Patent Title: A Rotational-Magnetorheological Abrasive Flow Finishing process and device.
Patent filed through intellectual ventures.
Date: 25th May, 2011
Inventors: Manas Das, V.K. Jain, P.S. Ghoshdastidar, Indian Institute of Technology, Kanpur

Technical Report:

- Sunil Jha, Manas Das, V.K. Jain and P.S. Ghoshdastidar, Story of the Week on "Magnetorheological Abrasive Flow Finishing (MRAFF)" Published on IITK main site: <http://www.iitk.ac.in/infocell/iitk/newhtml/storyoftheweek13.htm>

Poster Presentation:

- Manas Das, V.K. Jain and P.S. Ghoshdastidar, "Rotational - magnetorheological Abrasive flow Finishing (R-MRAFF)", Mechanical Departmental Day, Department of Mechanical Engineering, Indian Institute of Technology, Kanpur, Sept 18th -19th , 2010
- Manas Das, V.K. Jain and P.S. Ghoshdastidar, "Nanofinishing of stainless steel workpieces using Rotational - magnetorheological Abrasive flow Finishing (R-MRAFF) process", Indo-US Conference on Fabronics: Science of advanced fabrication & Golden Jubilee Symposium on Fabrication at Small Scales (FASS), 9th-12th December, 2009.

EDUCATION**PhD in Mechanical Engineering, 2011 (Specialization: Manufacturing Science)**

Indian Institute of Technology Kanpur, India

Thesis Title:

An experimental investigation of Rotational-Magnetorheological Abrasive Flow Finishing (R-MRAFF) process and a CFD-based numerical study of MRAFF process

Master of Technology in Mechanical Engineering, 2004 (Specialization: Manufacturing Science)

Indian Institute of Technology Kanpur, India

Thesis Title:

Analysis of Magnetorheological Abrasive Flow Finishing (MRAFF) Process

Bachelors of Engineering in Production Engineering, 2001

Jadavpur University, W.B., India

**TEACHING
EXPERIENCE**

- Assistant Professor, NIT Rourkela, Jan 2012- April, 2012
- Assistant Professor, IIT Guwahati, May 2012 onward

AWARDS

Awarded '**2012 AM Strickland Prize**' by **Manufacturing Industries Division of the Institution of Mechanical Engineers** for paper 'Computational fluid dynamics simulation and experiential investigations into the magnetic-field-assisted nano-finishing process' by Manas Das, V. K. Jain, P. S. Ghoshdastidar published in the Journal of Engineering Manufacture (Proceedings of the Institution of Mechanical Engineers, Part B).

<http://www.imeche.org/knowledge/industries/manufacturing/about-the-division/chairman's-report-2012-2013>

**MEMBER OF
PROFESSIONAL
BODIES**

- America Society of Mechanical Engineering (ASME)