

Profile Page



Name : Dr Manoj Kumar
Designation : Assistant Professor Grade-i
Department : Mechanical Engineering
Qualification : Ph.D. Solid Mechanics and Design (I.I.T Kanpur)
Address : Department of Mechanical Engineering
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Research Interests :

Solid Mechanics, Ductile Fracture: Continuum Damage Mechanics Model; Dynamic Fracture Mechanics; High Strain Rate Behavior; Large Deformation Elasto-Plastic Impact/Contact Problems; Finite Element Method; Computer-Aided Design.

Other Profile Links :

Google Scholar Link :

Manoj Kumar [Click Here](#)

Personal Web Link :

ResearchGate [Click Here](#)

Journal Publications :

Year	Journal	Publication
2022	Materials Today: Proceedings	Hypervelocity impact behavior of projectile penetration on spacecraft structure: A review
2022	Recent Advances in Mechanical Engineering	Parametric Study of Tensile Properties of Hybrid Composite Using FEM
2022	Transactions of the Indian Institute of Metals	Numerical Analysis of Different SUS304 Steel Weld Joint Configurations Using new Prescribed Temperature Approach
2022	Materials Today: Proceedings Volume 56, Part 5, 2022, Pages 3086-3093	A study of parameters affecting mechanical characteristics of hybrid composite
2022	Springer: S?dhan? Published by the Indian Academy of Sciences	Numerical simulation of ballistic impact response on composite materials for different shape of projectiles
2022	Journal of Natural Fibers	An Experimental Study of Static and Dynamic Behavior of the Hybrid Composite

2022	Springer:S?dhan? Published by the Indian Academy of Sciences	Numerical simulation of ballistic impact response on composite materials for different shape of projectiles
2022	IOP Conference Series: Materials Science and Engineering	Nidhi Kumari, Manoj Kumar; Impact of ogival nosed Projectiles on Al 1100 H-12 thin Plates : Numerical Study
2022	IOP Conference Series: Materials Science and Engineering	Vardan, Dr.Manoj Kumar and Dr.Sangeeta Garg; Performance of Dye-Sensitized Solar Cell using Hamelia Patens leaves as natural dye
2022	IOP Conference Series: Materials Science and Engineering	Haris Farooq and Manoj Kumar; Numerical analysis of origami-ending crash tubes
2022	IOP Conference Series: Materials Science and Engineering	Finite Element Analysis of Impression Creep on P91
2022	IOP Conference Series: Materials Science and Engineering	CFD Validation and Aerodynamic Behaviour of NREL Phase VI Wind Turbine
2022	Composites: Mechanics, Computations, Applications	Mechanical Behavior of Rubberized Concrete Composites: An Experimental Study
2022	Springer Nature	NUMERICAL ANALYSIS OF WINDOWED ORIGAMI-ENDING CRASH TUBES (ACCEPTED)
2022	Springer Nature	NUMERICAL SIMULATION OF BALLISTIC PERFORMANCE OF MONOLITHIC AND MULTILAYER THIN METALLIC TARGETS (ACCEPTED)
2022	Springer Nature	FINITE ELEMENT ANALYSIS OF BALLISTIC IMPACT ON DISSIMILAR MULTI-LAYERED METAL TARGETS (ACCEPTED)
2022	The International Journal of Advanced Manufacturing Technology	Metal matrix nanocomposites: future scope in the fabrication and machining techniques
2022	Journal of Natural Fibers	An experimental study of static and dynamic behaviour of the hybrid composite
2022	Springer Nature , Indian Academy of Sciences (Sadhana)	Numerical simulation of ballistic impact response on composite materials for different shape of projectiles
2022	Indian Academy of Sciences (Sadhana)	Numerical simulation of ballistic impact response on composite materials for different shape of projectiles
2022	Materials Today: Proceedings	A study of parameters affecting mechanical characteristics of hybrid composite
2021	Journal of Natural Fibers	An Experimental Study of Static and Dynamic Behavior of the Hybrid Composite
2021	Advances in Mechanical Engineering	Finite Element Analysis of Ballistic Impact on Monolithic and Multi-layered Target Plate with and Without Air Gap
2021	Materials Today: Proceedings	Finite element analysis of functionally graded bar under torsional load
2021	Materials Today: Proceedings	Finite element analysis of functionally graded bar under torsional load
2021	Springer Nature-Advances in Mechanical Engineering	Parametric study of tensile properties of hybrid composite using FEM
2021	Advances in Mechanical Engineering	Parametric study of tensile properties of hybrid composite using FEM (Accepted)
2019	Journal of the Indian Academy of Sciences, SADHANA	ManojKumar; Sachin S.Gautam; P M Dixit, A Non-Linear Ductile Damage Growth Law at Elevated Temperature
2019	Procedia Structural Integrity, Volume 14, Pages 537-543	Dipankar Bora, Manoj Kumar, Sachin S. Gautam,. Ductile fracture in tube impact problem using a Lode angle dependent failure criterion,
2018	Materials Today; Volume 5, Issue 9, Part 3, 2018, Pages 18983-18991	Dipankar Bora; Manoj Kumar; Sachin S. Gautam "Ductile fracture at high velocity impact of cylindrical tubes"
2017	Procedia Engineering, Volume 173, pp190-197, 2017	Manoj Kumar, Utkarsh Deep and P M Dixit, Simulation and Analysis of Ballistic Impact using Continuum Damage Mechanics (CDM) Model
2017	Procedia Engineering, Volume 173, pp 1215-1222, 2017	Manoj Kumar and P M Dixit, Simulation of Fracture in The Taylor Test Using Continuum Damage Mechanics Model.

2015	International Journal of Damage Mechanics (IJDM). vol. 24 (7) pp. 1070-1085, Sep. 2015	Manoj Kumar and P M Dixit, A Non-linear Ductile Damage Growth Law.
2015	Applied Mechanics and Materials, vol. 784, pp. 369-376, Aug. 2015	Manoj Kumar and P M Dixit, Effect of Crack Closure Parameter and Negative Triaxiality on Damage Growth in Upsetting.

Conference Publications :

Year	Conference	Publication
2022	IOP Conference Series: Materials Science and Engineering	Performance of Dye-Sensitized Solar Cell using Hamelia Patens leaves as natural dye
2022	International Conference on Materials Science and Engineering (ICMSE 2022) NIT JALANDHAR 11/06/2022 - 12/06/2022	Performance of Dye-Sensitized Solar Cell using Hamelia Patens leaves as natural dye
2022	International Conference on Materials Science and Engineering (ICMSE 2022) NIT JALANDHAR 11/06/2022 - 12/06/2022	Finite Element Analysis of Impression Creep on P91
2022	International Conference on Advances in Mechanical Engineering (ICAME-2020), 10-11 January, 2020, VNIT Nagpur, India	Numerical analysis of origami-ending crash tubes
2022	International Conference on Materials Science and Engineering (ICMSE 2022) NIT JALANDHAR 11/06/2022 - 12/06/2022	Performance of Dye-Sensitized Solar Cell using Hamelia Patens leaves as natural dye
2022	International Conference on Materials Science and Engineering (ICMSE 2022) NIT JALANDHAR 11/06/2022 - 12/06/2022	Impact of ogival nosed Projectiles on Al 1100 H-12 thin Plates : Numerical Study
2020	International Conference on Advances in Mechanical Engineering (ICAME-2020), 10-11 January, 2020, VNIT Nagpur, India	Finite Element Analysis of Ballistic Impact on monolithic and multi layered target plate with and without air gap.
2019	7th International Congress on Computational Mechanics and Simulation, 11-13 December 2019, IIT Mandi, India.	FEM anal- ysis of static and low cycle fatigue of carbon-epoxy laminates double cantilever beam (DCB).
2019	7th International Congress on Computational Mechanics and Simulation, 11-13 December 2019, IIT Mandi, India.	Finite Element Method Analysis of Ballistic Impact on Aluminium Plate.
2018	The Second International Conference on Structural Integrity and Exhibition (SICE 2018); HYDERABAD, INDIA JULY 25-27, 2018	Dipankar Bora, , Sachin S. Gautam and Manoj Kumar ; "Ductile Fracture in Tube Impact Problem Using A Lode Angle Dependent Failure Criterion "
2018	Second Quadrennial International Conference on Structural Integrity (ICONS 2018), IIT Madras, Chennai, India, December 14th - 17th, 2018	Kumar M., and Gautam S. S., Parametric study of ballistic impact using continuum damage mechanics (CDM) model, Second Quadrennial International Conference on Structural Integrity
2018	8th International Conference on Meterials Processing and Characterization, 16th-18th March 2018, Bachupally, Hyderabad, Telangana, India.	Dipankar Bora, Manoj Kumar, Sachin S. Gautam, Ductile fracture at high velocity impact of cylindrical tubes
2018	Second Quadrennial International Conference on Structural Integrity (ICONS 2018), IIT Madras, Chennai, India, December 14th - 17th, 2018	Kumar M., and Gautam S. S., Parametric study of ballistic impact using continuum damage mechanics (CDM) model
2018	1st International Conference on Future Learning Aspects of Mechanical Engineering (FLAME - 2018), Amity University, Noida, October 3rd - 5th , 2018, (submitted) .	Bora D., Kumar M., and Gautam S. S., Simulation of ductile fracture at high velocity impact of cylindrical tubes

2018	19th ISME conference on advances in mechanical engineering, Dec 20-22, 2018, NIT Jalandhar, Punjab	Manoj Kumar, Janmeet Singh Manku, and Pramod Kumar, Simulation of effect of velocity at the tool interface in Orthogonal Metal Cutting using Continuum Damage Mechanics (CDM) Model
2018	19th ISME conference on advances in mechanical engineering, Dec 20-22, 2018, NIT Jalandhar, Punjab	Jitendra basrani, Pramod kumar and Manoj Kumar, Energy recovered from bicycle with the help of flywheel
2017	3rd Indian Conference on Applied Mechanics (INCAM 2017), MNNIT Allahabad	Manoj Kumar, Utkarsh Deep and P M Dixit, Effect of Projectile shape of Ballistic Impact using Continuum Damage Mechanics (CDM) Model
2017	3rd Indian Conference on Applied Mechanics (INCAM 2017), MNNIT Allahabad	Manoj Kumar, Janmeet Singh Manku and P M Dixit, Simulation of effect of friction at the tool interface in Orthogonal Metal Cutting using Continuum Damage Mechanics (CDM) Model
2016	11th International Symposium on Plasticity and Impact Mechanics (IMPLAST 2016), Dec. 2016, IIT Delhi	Manoj Kumar and P M Dixit, Simulation of Fracture in The Taylor Test Using Continuum Damage Mechanics Model.
2016	11th International Symposium on Plasticity and Impact Mechanics (IMPLAST 2016), Dec. 2016, IIT Delhi	Manoj Kumar, Utkarsh Deep and P M Dixit, Simulation and Analysis of Ballistic Impact using Continuum Damage Mechanics (CDM) Model.
2015	XIII International Conference on Computational Plasticity. Fundamentals and Applications (COMPLAS XIII), 1-3 Sep. 2015, Barcelona - Spain	Manoj Kumar and P M Dixit, Simulation of Damage Growth in Pre-Notched Cylindrical Test Specimens Using Continuum Damage Mechanics Model
2015	Second International Conference on Damage Mechanics (ICDM2 2015), July 8-11, 2015, Troyes, France.	Manoj Kumar and P M Dixit, Effect of Crack Closure Parameter and Negative Triaxiality on Damage Growth in Upsetting
2014	5th International Congress On Computational Mechanics And Simulation (ICCMS), 10th – 13th December 2014, Chennai, India.	Manoj Kumar and P M Dixit, Analysis of Damage in Steel Cylindrical Test Specimen

Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISSN No.	Year
Lecture Notes in Mechanical Engineering book series (LNME)	" Finite Element Analysis of Ballistic Impact on Monolithic and Multi-layered Target Plate with and Without Air Gap"	Springer Nature, Advances in Mechanical Engineering (Lecture Notes in Mechanical Engineering book series (LNME)) Series ISSN 2020:591-599	Rohit Kumar , Manoj Kumar , and Pramod Kumar	ISSN 2020:591-599	2020
Mechanical Engineering	Advances in Engineering Design	Springer Nature Singapore Pte Ltd.	Manoj Kumar, Dipankar Bora and Sachin Singh Gautam	978-981-13-6468-6	2019

Events Organized :

Category	Type	Title	Venue	From	To	Designation
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Faculty Development Program cum Short Term Course	International	FEM and Modal Analysis in Engineering” (FEMMAE-22)	NIT Jalandhar	11/03/22	15/03/22	Organiser
International Conference	International	International Conference on Materials Science and Engineering” (ICMSE-2022) International Conference	NIT Jalandhar	11/06/22	12/06/22	Organising Secretary
Faculty Development Program cum Short Term Course	International	FEM and Modal Analysis in Engineering” (FEMMAE-19)	NIT Jalandhar	24/12/19	28/12/19	Organiser
Faculty Development Program cum Short Term Course	International	Training and Practice on MATLAB for Engineering Solutions ” (TPMES-20	Dr. B. R. Ambedkar National Institute of Technology Jalandhar,	26/11/20	30/11/20	Organiser
Conference	National	19th ISME Conference on Advances in Mechanical Engineering		20/12/2020	22/12/2020	Organiser
International Conference	International	First International Conference on Materials Science & Engineering	NIT Jalandhar	11/06/19	12/06/19	Organiser
Workshop	National	Introduction to MATLAB for Engineers	NIT Jalandhar	26/06/2020	26/06/2020	Organiser
Conference	National	INDIAN SOCIETY FOR TECHNICAL EDUCATION FACULTY SECTION CONVENTION-2022	Dr B R Ambedkar National Institute of Technology	30/09/22	30/09/22	Organising Secretary
Workshop	National	CAD CAM Training for NIT Jalandhar student	NIT Jalandhar	21/02/20	08/03/20	Organiser

Professional Affiliations :

Designation	Organization
Scientist SC	ISRO Satellite Centre (ISAC) , Bangalore
Associate software developer	Accenture PVT INDIA
Physics Faculty	FIITJEE Limited, Delhi
Student Tutor-ESO202 (Mechanics of Solids) 2012	Indian Institute of Technology Kanpur

Student Tutor-ESO202 (Mechanics of Solids) 2013	Indian Institute of Technology Kanpur
Project Scientist 2015-2016	Indian Institute of Technology Kanpur
Assistant Professor (Guest) Aug 2016-Dec 2017	Motilal Nehru National Institute of Technology Allahabad
Assistant Professor (Jan-2018 to Till Now)	Dr. B. R. Ambedkar National Institute of Technology Jalandhar,
Teaching Assistant, Department of Mechanical Engineering (July 2010- July 2015)	Indian Institute of Technology Kanpur

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Kottedda Tarun Kumar	Fabrication and Characterization of Metal Matrix Nano Composites	Going On	July 2021	Dr. Pramod Kumar
SHIV NARAYAN PRAJAPATI	Finite Element Analysis of Biodegradable component machined by 3D Photochemical Machining (PCM) Technology	Going On	July 2021	Dr. Pramod Kumar
Mr. Pradeep Kumar Singh	Investigation of Hypervelocity Impact Behavior of Projectile on Metal Plates	Going On	July 2019	
Sumit Chopra	Engineering failure analysis	Going On	Jan 2022	Dr. Pramod Kumar
Mr. Jitendra Basrani	Fatigue and High Strain Characterization of Hybrid Composite materials	Going On	Dec. 2018	Dr. Pramod Kumar
Mr. Sanjay Kumar	Experimental, Modelling & Simulation of Friction Stir Additive Manufacturing (FSAM)	Going On	Dec 2020	Dr. Pramod Kumar

PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Aastik Bhatnagar	Finite Element Analysis of Ballistic Performance of Kevlar/Epoxy and Cfrp For Various Fiber Orientations	Completed	2022	Dr. Nitin Sharma
VARDAN	Performance of Dye-Sensitized Solar Cells Using Tradescantia Pallida And Hamelia Patens As Natural Dyes	Completed	2022	Dr Sangeeta Garg, Chemical Engineering
Raghvendra Singh	Assessment of A Predictive Model For Indentation In Cylinder-Flat Contact Using Finite Element Analysis	Completed	2022	Dr. Pramod Kumar
Sunny Sihag	Aeroelastic Simulation of NREL Phase VI Wind Turbine By Using Fluid-Structure Interaction	Completed	2022	Dr. Anurag Tiwari, Chemical Engineering
Suman Kumar	Investigation of Effect of Strain Rate On Hybrid Glass Fibre Composite Reinforced With Natural Fiber	Completed	2022	Dr. Pramod Kumar
Nidhi Kumari	Finite Element Simulations of Ballistic Impact On Metallic Targets Subjected To Oblique Projectiles.	Completed	2022	
Haris Farooq	Simulation of Origami-engineering.	Completed	2022	
GAJULA PAVAN THIRUMALA GOPI	Numerical Simulation of Dynamic Behaviour of GFRP Under Strain Rate by Using ABAQUS/Explicit	Completed	2021	Dr Anand Vaz

MUDDU RAHUL BHARADWAJ	Numerical Simulation of Ballistic Impact Response On Composite Materials For Different Shapes of Projectiles.	Completed	2021	
PUNEET KUNDAN	Mechanical Behavior of Rubberized Concrete Composites: An Experimental Study (Co-Supervisor: Dr. Sumit Sharma)	Completed	2021	Dr. Sumit Sharma
RAJNISH KUMAR	Finite Element Analysis of Impression Creep Behavior of Boron Modified P91 Steel (Co-Supervisor: Dr.Raman Bedi)	Completed	2021	Dr Raman Bedi
SAMIKSHA GUNWANTRA O GUDADHE	Simulation Of Crack Propagation Using XFEM. (FEA Analyst CAE Durability at CNH	Completed	2021	
SAUMYA SUYAL	Design And Development of A Three-Link Serial Manipulator In Its Trajectory and Force Control Mode (With Dr Joseph Anand Vaz).	Completed	2021	Dr Anand Vaz
PALAK BHAGORIA	Finite Element Analysis of Ballistic Impact On Multi-Layered Dissimilar Metal Targets.	Completed	2021	
RAJNISH KUMAR	Finite Element Analysis of Impression Creep Behavior of Boron Modified P91 Steel (Co-Supervisor: Dr.Raman Bedi)	Completed	2021	Dr Raman Bedi
PAVAN KUMAR MEENA	Finite Element Analysis of Sus304 Steel Weld Joints Using Prescribed Temperature Approach.	Completed	2020	Dr Dinesh K Shukla
ROHIT KUMAR	Finite Element Analysis of High Velocity Impact On Multi-Layered Metal Targets Using Various Projectile Shapes.	Completed	2020	
AJAY KUMAR DIWAKAR	Modelling And Analysis Of Composite Material Using Material Studio And ABAQUS.	Completed	2019	Dr. Sumit Sharma
ARVIND	Finite Element Analysis Of Carbon-Epoxy Composite Under Static And Fatigue Loading.	Completed	2019	Dr Raman Bedi
SOHEL ANSARI	Finite Element Analysis of Ballistic Impact On Metal.	Completed	2019	Dr. Pramod Kumar

Admin. Responsibilities :

Position Held	Organization	From	To
Member, Institute library committee	NIT Jalandhar	13-02-18	20-02-20
Institute Coordinator, Alumni Association	NIT Jalandhar	13-02-19	Present
Faculty Advisor of Team Daksh	NIT Jalandhar	01-05-18	Present
Member of TENKERING LAB	NIT Jalandhar	01-05-19	Present
Team Member of NIRF	NIT Jalandhar	01-03-18	Present
B.TECH Batch Coordinator of 2015-2019; 2019-2023	NIT Jalandhar	01-02-18	Present
Associate Lab In-charge, CAD/CAM Lab, Dept of Mechanical Engineering	NIT Jalandhar	01-02-18	Present
Warden, Hostel-7 and &E	NIT Jalandhar	13-02-2018	17-10-2018
Member, Academic Committee	NIT Jalandhar	30-06-2020	Present

Award and Honours :

Title	Activity	Given by	Year
BEST PAPER AWARD	For presenting a Research Paper on “Numerical investigation on ballistic resistance of aluminium plate by different shaped steel projectiles" at Maulana Azad National Institute of Technology, Bhopal in the International Conference	Maulana Azad National Institute of Technology, Bhopal in the International Conference on “Latest Trends in Civil, Mechanical and Electrical Engineering” (LTCMEE- 2021), April 12-13, 2021.	2021
Institute Fellowship	For Phd Programme	Department of Mechanical Engineering of IIT Kanpur.	2010-2016
Gold Medal	Academic excellence in M. Tech.	MNNIT, Allahabad.	2010
Ratan Prakash Memorial Gold Medal	Academic excellence in M. Tech.	MNNIT, Allahabad.	2010
Institute Fellowship	For M.Tech Programme	Department of Mechanical Engineering, MNNIT, Allahabad.	2008-2010
Best Student	B. Tech.	RVCE, Bangalore	2007