Dr. Indra Vir Singh

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Scopus: https://www.scopus.com/authid/detail.uri?authorId=55496646600
Google scholar: https://scholar.google.com/citations?hl=en&user=mgZmcSkAAAAJ

Research Interests

- Fracture Mechanics, Fatigue, Damage, Mechanical Behavior of Materials, Failure Analysis
- Finite Element Analysis, Isogeometric Analysis, XFEM, XIGA, Meshfree Methods
- Multi-scale Modeling, Phase Field Modeling, Constitutive Modeling

Educational Qualifications

S.No.	Class/Degree	School/College/University	Year
1.	B.Sc. Engg. (Mechanical)	A.M.U. Aligarh	1996
2.	M.Tech. (Applied Mechanics)	I.I.T. Delhi	1998
3.	Ph.D. (Mechanical)	BITS, Pilani	2004

Professional Experience

S.No.	Position Held	College/University	Responsibility	From	To
1.	Research Associate	IIT Delhi, India	Research	02,1999	05/1999
2.	Lecturer	BITS, Pilani, India	Teaching/Research	05/1999	07/2005
3.	Postdoctoral Researcher	Shinshu University Nagano, Japan	Research	09/2005	03/2007
4.	Assistant Professor	IIT Roorkee, India	Teaching/Research	04/2007	10/2012
5.	Associate Professor	IIT Roorkee, India	Teaching/Research	10/2012	12/2018
6.	Professor	IIT Roorkee, India	Teaching/Research	12/2018	Till Date

Publications

	Published/Accepted	In-Review	Total
Journals	107	2	109
Conference/Symposium	101	---	101
Total	208	2	210

Thesis/Dissertation Guidance

	Completed/Submitted	In-Progress	Total
Ph.D.	11	09	20
M. Tech.	49	2	51

Membership

- Life Member, Indian Society for Applied Mechanics (ISAM)
- Life Member, Indian Association for Computational Mechanics (IndACM)
- Life Member, Indian Society of Theoretical and Applied Mechanics (ISTAM)

Honors, Awards and Fellowships

- Selected for Marquis's Who's Who in the World, 2005, 2007, 2008, 2009, 2010, 2011, 2012.
- Sir Rajendra Nath Mookherjee Memorial Best Paper Award by Institution of Engineers, 2007.
- Ministry of Human Resource Development, New Delhi, GATE Fellowship, 1997-1998.
- Merit Scholarship during Bachelor Degree Course, 1993-1996.
- Merit Scholarship from Class IX to XII.

Foreign Visits

- **Japan** (Shinshu University, Nagano), **Postdoctoral Researcher** from **September 2005 – March, 2007**.
- **USA** (Los Angeles, California) to present a paper in 7th World Class Congress on Computational Mechanics, **July 16 – 22**, **2006.**
- **Canada** (Vancouver) to chair a session in 9th International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics (37th ASTM National Symposium on Fatigue and Fracture Mechanics), **May 20 – 22, 2009.**
- **South Korea**, Korea Railroad Research Institute, Uiwang City, **June 22 – July 21, 2009**.
- **Germany** (Aachen) to present a paper in ECCOMAS Thematic Conference on the XFEM, **September 28 – 30**, **2009**.
- **South Korea**, Korea Railroad Research Institute, Uiwang City, **June 14 – July 03, 2010**.
- **Portugal** (University of Aveiro), Indo-Portugal joint research project, **June 14 – 21**, **2011.**
- **UK** (Cardiff University), to present a paper in 2nd International Conference on Extended Finite Element Method, **June 29 – July 01**, **2011.**
- **Singapore** (National Technological University), to present paper in Eleventh Asia-Pacific Conference on Engineering Plasticity and Its Applications (AEPA2012), **December 5-7**, **2012**.
- **Germany** (Ulm), International Forum for Testing Materials, Zwick, Ulm, **October 14-17, 2013**.
- **France** (Ensta Paris Tech), to present paper in Multi-physics Modeling of Solids (MPMS), An International Colloquium, Paris, France, **October 6-8**, **2014**.
- **Australia**, Deakin University, Warun Ponds Campus, Geelong, Australia, **June 15-19**, **2015**.
- **Singapore,** ICMAE Conference, **December 12-14, 2015.**
- **Japan**, Kyshu University, Fukuoka Japan, **October 22-24, 2016**.
- **Dubai,** BITS Dubai, November 28-29, **2017.**

Invited Lectures

- Meshfree Methods in Engineering, BARC Mumbai, India, June 30 **–** July 1, **2007**.
- Meshfree Methods, Short Term Course on "Computational Fluid Dynamics" by Dr. B.K. Gandhi and Dr. K. M. Singh, IIT Roorkee, June 23, **2008**.
- Handling of Strong Discontinuities by Element Free Galerkin Method, Korea Railroad Research Institute, Uiwang City, South Korea, July 2, **2009**.

- Two-dimensional Finite Element Analysis, Short Term Course on "Computer Aided Design" by Dr. P. M. Pathak and Dr. B. K. Mishra, IIT Roorkee, December 22, **2009**.
- Meshfree Methods in Heat Transfer, BARC Mumbai, India, March 4–5, **2010.**
- Modeling and Simulation of Strong Discontinuities by XFEM**,** Korea Railroad Research Institute, Uiwang City, South Korea, June 28, **2010**.
- Fracture Mechanics Simulations using Meshfree Method, Meshfree Conference, IISc Bangalore, India, January 10–11, **2011**.
- Numerical Simulations of Fracture Mechanics Problems using Meshfree Methods, University of Aveiro, Portugal, June 20, **2011**.
- Finite Element Methods: Fundamentals, DEAL, Dehradun, June 5-6, **2012**.
- Three-Dimensional Fracture Mechanics Simulations Using Extended Finite Element Method, *Fourth International Conference on Structural Stability and Dynamics (ICSSD)*, MNIT, Jaipur, India, Vol. 2, pp. 863–877, January 4–6, **2012**.
- Finite Element Methods for Solid Mechanics Problems, MNIT, Jaipur, June 4-5, **2013**.
- Composites: Introduction, Mechanics and Failure Analysis, MNIT, Jaipur, June 14, **2013**.
- Introduction to Meshfree Methods and Extended Finite Element Methods, IIT Mandi, July 4, **2013**.
- Introduction to Finite Element Methods, GNDEC, Ludhiana, TEQIP sponsored STC, July 22, **2013**.
- Finite Element Analysis, DCRUST, Murthal, TEQIP sponsored STC, September 25, **2013.**
- Finite Element Methods and Its Applications, DEAL, Dehradun, December 16, **2013.**
- Finite Element Methods, DTU, Delhi, June 10, **2014.**
- Introduction to Meshfree, XFEM and Isogeometric Analysis, IIT Mandi, HP, June 27, **2014**.
- Meshfree Methods and Applications, NIT Patna, March 23-34, **2015**.
- Numerical Simulations of Fracture Mechanics Problems by XFEM, IISc Bangalore, May 29, **2015.**
- Advanced Numerical Simulations for Fatigue-fracture problems, Deakin University, Australia, June 18, **2015**.
- **Japan**, Invited talk in Mathematical Analysis of Continuum Mechanics and Industrial Applications II (CoMFos16), Kyshu University, Fukuoka Japan, **October 22-24, 2016**.
- Finite Element Method for Engineers and Researchers, IIT Mandi, HP, June 22, **2018**.

Special Issues

- Chief Editor for Recent Advances in Computational Mechanics (RACM), Advances in Mechanical Engineering, Sage Publications, http://ade.sagepub.com/content/5/158572
- Guest Editor for Special Issue on Advances in Mechanical Problems of Functionally Graded Materials and Structures, http://www.mdpi.com/journal/materials/special_issues/AMPFGMS

Session Chair

- Chaired a Session in Interquadrennial Conference of the International Congress of Fracture **(IQICF)**, IISc Bangalore, India, August 3–7, **2008**.
- Chaired a Session in Ninth International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics (37th ASTM National Symposium on Fatigue and Fracture Mechanics), Vancouver, Canada, May 20–22, **2009.**
- Chaired a session in Meshfree Conference, IISc Bangalore, India, January 10–11, **2011**.

- Chaired a session in Fourth International Conference on Structural Stability and Dynamics (ICSSD 2012), MNIT Jaipur, India, January 4–6, **2012**.
- Chaired a session in *International Conference on Recent Advances in Material and Manufacturing Technologies (IMMT-2017)*, BITS Dubai Campus, Dubai, November 28–29, **2017.**

Short Term Course Organized

- Organized a short term course (under QIP scheme) on "Design and Analysis using FEM, XFEM and Meshfree Methods" July 12 **–** 16, **2010**.
- Organized a short term course on "Simulation and Design using Extended Finite Element Method (XFEM)*"* December 13 **–** 17, **2010**.
- Organized a short term course on "Modeling and Simulations using Meshfree Methods*"* May 23 **–** 27, **2011**.
- Organized a short term course on "Numerical Simulations Using FEM, XFEM and Meshfree Methods*"* December 24 **–** 28, **2012**.
- Organized a short term course on "Fatigue and Fracture of Advanced Materials*"* July 20 **–** 23, **2013**.
- Organized a short term course (under QIP scheme) on "Modeling and Simulations using Finite Element Methods" January 7 **–** 11, **2014**.
- Organized one-day workshop (under QIP scheme) on "Failure Analysis and Life Assessment", March 14, **2015**.
- Organized a short term course (under QIP scheme) on "Finite Element Methods for Engineering Applications" June 12 **–** 16, **2017**.

Monographs/Book Chapters

- Akhilendra Singh and Indra Vir Singh, Element Free Galerkin Methods for Heat Transfer: Fundamentals and Formulations, Lambert Academic Publisher, Germany, **July 2010**.
- Indra Vir Singh and Gagandeep Bhardwaj, Book chapter on "Fatigue Crack Growth Analysis of an Interfacial Crack in Heterogonous Material Using XIGA" in *Mathematical Analysis of Continuum Mechanics and Industrial Applications II, Proceedings of the International Conference (CoMFoS16)*, Springer Publisher, Singapore, pp. 15-26, **2017**. https://doi.org/10.1007/978-981-10-6283-4

Sponsored Research Projects

S.N.	Title	Sponsoring Agency	PI or Co-PI	Status
1.	Development of Elasto-Plastic Element Free Galerkin Code	BRNS, DAE, Mumbai, India	PI	Completed (04/2008 - 12/2011
2.	Thermo-mechanical Simulations of Elasto-Plastic Fracture Mechanics Problems Using XFEM and Meshless Methods	Indo-Portugal Joint Research Project, DST, New Delhi	PI	Completed (01/2011 - 12/2013)
3.	Development of XFEM Software for the Simulation of Fracture and Ductile Crack Tearing in Nuclear Components	BARC, Mumbai, India	PI	Completed (01/2011 - 08/2013)
4.	Mechanical Behavior of Ultrafine Grained Zr and Zr-Nb alloys Processed by Cryorolling (Experimental & Simulation Studies)	BRNS, DAE, Mumbai, India,	Co-PI	Completed (07/2011 - 06/2014)

5.	Development of Meshfree Codes for the Simulation of Damage in Metallic Materials Used in Nuclear Industries	BARC, Mumbai, India	PI	Completed (04/2012 - 09/2015)
6.	Prediction of Graphite Failure Strength using RVE Approach and XFEM	BRNS, DAE, Mumbai, India	PI	Completed (08/2014 - 08/2017)
7.	Failure Analysis of Engineering Components of Intricate Shape using Extended Isogeometric Analysis	DST, New Delhi, India	PI	Completed (09/2014 - 09/2017)
8.	Simulation of High Temperature Elasto-plastic Fatigue Crack Growth using XFEM	DMRL, DRDO, Hyderabad, India	PI	Completed (11/2014 - 11/2018)
9.	Multiscale Simulation Framework for Defect Formation Studies in Electronic Materials and Devices	Indo-Korea Joint Research Proposal	PI	In-progress (06/2018 - 06/2021)
10.	Development of Stochastic Multiscale Framework Based on Microstructural Features for Predicting the Bulk Response of Heterogeneous Materials	CSIR, New Delhi	PI	In-progress (07/2018 - 07/2021)
11.	Numerical Crack Growth Studies in Hydrided Pressure Tube of PHWR	AERB, Mumbai	PI	In-progress (06/2018 - 06/2020)
12.	Development of XFEM based Damage Tolerance Philosophy for the Remaining Life Assessment of Aeroengine Components	AR&DB, New Delhi	PI	In-progress (10/2018 - 10/2021)

Consultancy Projects

S.N.	Title	Sponsoring Agency	PI or Co-PI	Status
1.	Design Vetting of Erection Base for Rotor of 800 MW Turbogenerator Used for Rotor Insertion into Stator	BHEL, Haridwar	Co-PI	Completed (11/2007 - 11/2008)
2.	Design Development of Fixture for Road Transport of Stator of 800 MW Turbo-generator	BHEL, Haridwar	Co-PI	Completed (11/2007 - 11/2008)
3.	Design Analysis and Weight Optimization of Cast Steel Bogies of Freight Stock on Indian Railways	Ministry of Railway, RDSO, Lucknow, India	Co-PI	Completed (11/2011 - 03/2013)
4.	Design of Critical Weld Joints of Coal Wagon BOXN25 ((new design with stainless steel)	Ministry of Railway, RDSO, Lucknow, India	Co-PI	Completed (07/2010 - 06/2014)
5.	The Study of Tensile and Impact Behaviour of Reduced Activation Ferritic-Martensitic Steel	BARC, Mumbai, India	PI	Completed (02/2015 - 02/2017)

Ph.D. Guidance

S.N.	Name of R/S	Thesis Title	Co-guide (if any)	Funding (FT or PT)	Month & Year of Completion
1.	Deepak Sharma	*Development of XFEM based Damage Tolerance Philosophy for the Remaining Life Assessment of Aeroengine Components*	---	MHRD (FT)	In-Progress
2.	Jaymalya Jena	Modeling and Simulation of Electronic Materials	Dr. Vidit Gaur	DST (FT)	In-Progress
3.	Neha	*Continuum Modeling of Quantum Dots using XFEM*	Prof. B. K. Mishra	MHRD (FT)	In-Progress
4.	Anjali Jha	*Numerical Crack Growth Studies in Hydrided Pressure Tube of PHWR*	Prof. B. K. Mishra	AERB, Mumbai (FT)	In-Progress
5.	Vinay Kumar Yadav	*An experimental Investigation of Fracture and Fatigue Behavior of 2024 Al Alloy*	Dr. Vidit Gaur	MHRD (FT)	In-Progress
6.	Subrato Sarkar	*Failure Analysis using Gradient Damage Mechanics with implementation through Isogeometric Analysis*	Prof. B. K. Mishra	MHRD (FT)	In-Progress
7.	Vibhuti Bhushan Pandey	*Crack Initiation and Growth using Damage Mechanics under Creep Fatigue Environment*	Prof. B. K. Mishra	DRDO (FT)	In-Progress
8.	Sanjay Samant	*A Study of Mechanical, Fracture and Fatigue Behavior of Modified 9Cr-1Mo Steel*	Dr. R. N. Singh	QIP (FT)	In-Progress
9.	Manish Kumar	*Creep-Fatigue Simulations at Elevated Temperature using FEM/XFEM*	---	MHRD (FT)	In-Progress
10.	Sunil Kumar Singh	*Failure Analysis of Engineering Structures Using NURBS/T-Spline Based XIGA*	---	DST (FT)	In-Progress
11.	Manik Bansal	*Numerical Prediction of Failure Strength of Graphite using RVE based Multiscale XFEM*	Dr. Kamal Sharma	DAE (FT)	September, 2019
12.	Rangoli Goyal	*Numerical Simulation of Some Problems in Mechanics using Advanced FE Techniques*	Prof. Rama Bhargava	DST (FT)	April, 2018
13.	Amit Shedbale	*Simulation of Indentation, Damage and Crack Growth Using Coupled FE-EFG Approach*	---	MHRD (FT)	April, 2017
14.	Gagandeep Bhardwaj	*Fatigue Crack Growth Simulations using Extended Isogeometric Analysis*	---	MHRD (FT)	April, 2016

15.	Sachin Kumar	*Crack Growth Simulations in Ductile Materials using XFEM/Coupled FE-EFGM*	Prof. B. K. Mishra	MHRD (FT)	August, 2015
16.	Sunkulp Goel	*Mechanical Behaviour of UFG Zircaalloy-2 Processed by Cryorolling: Experiment and Simulation*	Prof. R. Jayaganthan	DST (FT)	August, 2015
17.	Kamal Sharma	*Numerical Simulation of Crack Growth Problems Using EFGM/XFEM*	Prof. B. K. Mishra	BARC (PT)	April, 2015
18.	Vineet Kumar	*An Investigation of Mechanical and Fracture Behavior of Ultrafine Grained 6082 Al alloy*	Prof. B. K. Mishra	MHRD (FT)	January, 2015
19.	Somnath Bhattacharya	*Numerical Simulation of Fatigue Failure in Functionally Graded Materials using XFEM*	Prof. B. K. Mishra	MHRD (FT)	July, 2012
20.	Rajesh K. Sharma	*Element Free Galerkin Method for Fluid Flow, Heat and Mass Transfer in Porous Medium*	Prof. Rama Bhargava	MHRD (FT)	October, 2011
21.	Mohit Pant	*Meshfree Simulation of Fracture Mechanics Problems under Thermo-Mechanical Loading*	Prof. B. K. Mishra	MHRD (FT)	Dec, 2010

Past PhD Scholars

S.No.	Name	Institute/University	Position
1.	Mohit Pant	NIT Hamirpur, HP	Assistant Professor
2.	Rajesh K. Sharma	NIT Hamirpur, HP	Assistant Professor
3.	Somnath Bhattacharya	NIT Raipur, Chhatisgarh	Assistant Professor
4.	Vineet Kumar	G.B. Pant Govt. Engg. College, New Delhi	Assistant Professor
5.	Kamal Sharma	Bhabha Atomic Research Center, Mumbai	Scientist-F
6.	Sunkulp Goel	Nanjing University of Science and Technology, Nanjing, China	Assistant Professor
7.	Sachin Kumar	IIT Ropar, Punjab	Assistant Professor
8.	Gagandeep Bhardwaj	Thapar University, Patiala	Assistant Professor
9.	Amit Shedbale	IIT BHU, Varanasi	Assistant Professor
10.	Rangoli Goyal	GD Goenka University, Gurgaon	Assistant Professor

M.Tech. Guidance

S. N.	Title	Month & Year Awarded	Name of The Scholar	Co-supervisor (if any)
1	*Effect of Ageing on Mechanical and Fatigue Behaviour of 2014 Aluminium Alloy*	June 2019	Roshan Kumar	Prof. B. K. Mishra

2	*Effect of Cryorolling on Mechanical and Fatigue Crack Growth Behavior of Al Alloy 6351*	June 2019	Gynendra Saini	Prof. B. K. Mishra
3	*Modelling of Crack in Preesure Vessels BY IGA Using Thin Shell Theory*	June 2018	Rijul Singla	Prof. B. K. Mishra Dr. Xiaoying Zhuang
4	*Crack Growth Modeling Using XIGA*	June, 2017	Lalit Mohan	Prof. B. K. Mishra
5	*Effect of Hot Rolling on Fracture and Fatigue Behavior of P92 Steel*	June, 2017	Amit	Dr. R. K. Singh
6	*Fracture Analysis of Piezoelectric Material by XFEM*	June, 2016	Mohit Goel	Prof. B. K. Mishra
7	*Elasto-plastic Crack Growth Simulation using XFEM*	June, 2015	Aakash Bhuwal	Prof. B. K. Mishra
8	*Modeling and Simulation of Nonlinear Problems Using XFEM*	June, 2015	Amit Kumar Sharma	Prof. B. K. Mishra
9	*Modelling and Simulation of Nuclear Graphite using XFEM*	June, 2015	Rajat Pratap	Prof. B. K. Mishra
10	*Modelling and Simulation of Solid Mechanics Problems using Isogeometric Analysis*	June, 2015	Kirti Sharma	Prof. B. K. Mishra
11	*Modeling and Finite Element Simulation of Smart Structures*	June, 2015	Tarun Sachdeva	---
12	*Mechanical Behavior of Aluminum Alloys: Experimental Study & Simulation*	June, 2014	Rajwinder Singh	Prof. R. Jayaganthan
13	*Experimental Investigation and Numerical Simulation of Accumulative Roll Bonded 5080 Aluminium Alloy*	June, 2014	Shantanu Kumar Das	Prof. B. K. Mishra
14	*Nonlinear Simulation of Solid Mechanics Problems Using EFGM/XFEM*	June, 2014	Suneel Kumar Sharma	Prof. B. K. Mishra
15	*Numerical Simulation of Cracked Plate Using Isogeometric Analysis*	June, 2014	Virender Kumar	Prof. B. K. Mishra
16	*Multiscale Modelling of Nuclear Graphite Using XFEM*	June, 2014	Yogesh Bisht	Prof. B. K. Mishra
17	*Crack Growth Simulation in Laminated Composite Using FEM*	Dec., 2013	Amit Kumar	---
18	*Extended Isogeometric Finite Element for the Simulation of Fracture Mechanics Problems*	Dec., 2013	Subrato Sarkar	Prof. B. K. Mishra
19	*Numerical Analysis of Nonlinear Solid Mechanics Problems Using XFEM*	June, 2013	Amit Shedbale	Prof. B. K. Mishra
20	*Numerical Simulation of Contact Problems Using XFEM/EFGM*	June, 2013	Azher Jameel	Prof. B. K. Mishra
21	*Crack Growth Analysis and Weight Optimization of Railway Casnub Bogie By Using FEM*	June, 2013	Sushil Kumar Maurya	Prof. B. K. Mishra
22	*3-D Simulation of Interpenetrating Phase Composites By FEM/EFGM*	June, 2013	Pramod Kumar	Prof. B. K. Mishra
23	*Numerical Simulation of Branched and Intersecting Cracks in the Presence of Multiple Discontinuities Using XFEM*	June, 2013	Vivek Kumar Sharma	Prof. B. K. Mishra
24	*Elasto-plastic Fracture and Fatigue Simulation Using FEM/XFEM*	June, 2013	Kumar Gaurav	Prof. R. Jayaganthan
25	*Experimental and Numerical Simulation of Ultrafine Grained Zr-alloys*	June, 2013	A. Raja	Prof. R. Jayaganthan

26	*Failure Analysis of Interpenetrating Phase Composites by Meshfree Methods*	June, 2012	Ankit Agarwal	Prof. B. K. Mishra
27	*Multi-scale modeling and simulation of 3D-Braided Composites Using FEM/XFEM*	June, 2012	Anil Kumar Sahoo	Prof. B. K. Mishra
28	*Numerical Simulation of Elasto-Plastic Large Deformation Problems Using FEM/EFGM*	June, 2012	Rajesh Kumar	Prof. B. K. Mishra
29	*An Isogeometric Approach for the Simulation of Solid Mechanics Problems*	June, 2012	Pravin Kumar	Prof. B. K. Mishra
30	*Process Modeling of ECH with FEM*	June, 2012	Ravi Sewak	Prof. P. K. Jain
31	*Numerical simulation of 3-D cracks using XFEM*	June, 2011	Saurabh Kumar Yadav	---
32	*Numerical simulation of 3-D fracture mechanics problems using EFGM*	June, 2011	Mangesh Brahamnkar	Prof. B. K. Mishra
33	*Numerical simulation of 2-D fracture mechanics problems using XFEM*	June, 2011	Roshan U. Patil	Prof. B. K. Mishra
34	*Mechanical behavior of ultrafine grained aluminium 2014 alloy*	June, 2011	Anurag Tiwari	Prof. R. Jayaganthan
35	*Mechanical properties and fracture studies of UFG 7075 Al alloy under different loads (Experimental and Simulation Studies)*	June, 2010	Prosenjit Das	Prof. R. Jayaganthan
36	*Numerical simulation of fatigue crack problems using element free Galerkin method*	June, 2010	Sumit Vispute	Prof. B. K. Mishra
37	*The simulation of multiple cracks in welded structure using element free Galerkin method*	June, 2010	Gurwinder Singh	Prof. V. H. Saran
38	*Fracture studies of UFG Al-alloys*	June, 2010	Lalit Kralia	Prof. P. M. Pathak
39	*Development and characterization of Diopside ($CaMgSi_2O_6$) - Jadeite ($NaAlSi_2O_6$) based Glass-Ceramics*	June, 2010	Rinkel	Prof. R. Jayaganthan, Dr. R. Conradt
40	*Investigation of elasto-plastic fracture behaviour using EFGM*	June, 2009	Bandaru Aswani Kumar	Prof. V. H. Saran
41	*The numerical simulation of bi-material problems using meshfree methods*	June, 2009	Ch. Raghuveer	Prof. B. K. Mishra
42	*Finite element simulation for the optimization of parameters in continuous casting of slabs*	June, 2009	Rajeev Kumar	Prof. P. K. Jha
43	*XFEM simulation of 2-D fracture mechanics problems*	June, 2009	Sumit Kumar	----
44	*Vibration analysis of single walled carbon nanotube (SWCNT) based mass sensor*	June, 2008	Ashok Boda	Prof. S. P. Harsha
45	*Evaluation of the mechanical properties of carbon nanotube composites by finite element analysis*	June, 2008	Gorla Lokeshwari	Prof. S. P. Harsha
46	*Analysis of edge crack problem using meshfree method*	June, 2008	Ravi Aher	---
47	*Application of meshless element free Galerkin method to three-dimensional heat transfer problems*	May, 2003	Amit Umdekar	---
48	*Solution of heat transfer problems using meshless EFG method*	May, 2003	Avinash Masurkar	---
49	*Parallelization of meshless element free Galerkin method in fluid flow problems*	May, 2003	Parul Jain	---

B.Tech. Project Guidance

S. No.	Students Name	Project Title	Co-guide (if any)	Month & Year of Completion
1.	Dipanshu Mittal, Chava Sai Suhas Rayadu	*ABAQUS implementation of XFEM to simulate fatigue crack growth*	---	May 2018
2.	Ankit Rathore, Suyash Patel, Ajay Meena	*Fixture and Specimen Design for Biaxial Load Testing*	---	May, 2014
3.	Prashant Kumar, Rahul Rajpoot, Pranav Bajpai	*Modeling and Simulation of Indian Railway BOXNHL Wagon*	---	May, 2014
4.	Ravneet Singh, Rumanuddin Qureshi, Basvoju Abhinay	*Multi Scale Modeling and Simulation of 3D Braided Fibre Reinforced Composites Without and With CNT's*	---	May, 2013
5.	Md. Asim Ali, Abhinav Kesri, Sarvesh Sonwani	*Modeling and Simulation of Natural Fibre Composites*	---	May, 2013
6.	Manpreet Singh, Nirbhay Agarwal, Raman Goyal	*Study and Testing of Mechanical Behaviour of Forged Aluminum 6082 Alloy*	---	May, 2013
7.	Ayush Bansal, Keshav Sehgal, Mayank Doda	*Modelling, Simulation and Weldment Optimization of Indian Railway Wagon*	---	May, 2013
8.	Atul Kumar Bansal, Suresh Kumar Meena Vivek Kumar	*Experimental Analysis and Simulation of Fracture and Fatigue in 6082 Aluminum Alloy*	---	May, 2012
9.	Apoorv Sharma, Nitin Jain	*Failure Analysis of Low Alloy High Strength Steels by Finite Element Method*	Dr. V. K. Tiwari	May, 2010
10.	Sudheer Chaudhary and Vidit Gaur	*A Numerical Study-Thermal Cracking in Disc Brakes*	---	May, 2010

Journal Publications

1. V.B. Pandey, **I.V. Singh**, B.K. Mishra, A Stress Triaxiality Based Modified Liu-Murakami Creep Damage Model for Creep Crack Growth Life Prediction in Different Specimens, *International Journal of Fracture* (In-press). (SCI, IF=2.884) https://doi.org/10.1007/s10704-019-00412-7
2. M. Kumar, **I.V. Singh**, Numerical Investigation of Creep Crack Growth in Plastically Graded Materials using C(t) and XFEM, *Engineering Fracture Mechanics* (In-press). (SCI, IF=2.908) https://doi.org/10.1016/j.engfracmech.2019.106820
3. Subrato Sarkar, **I.V. Singh**, B.K. Mishra, Adaptive mesh refinement schemes for the localizing gradient damage method based on biquadratic-bilinear coupled-field elements, *Engineering Fracture Mechanics*, Vol. 223, pp. 106790, **2020**. (SCI, IF=2.908) https://doi.org/10.1016/j.engfracmech.2019.106790
4. S.K. Singh, **I.V. Singh**, B.K. Mishra, G. Bhardwaj, Analysis of Cracked Functionally Graded Material Plates using XIGA based on Generalized Higher-Order Shear Deformation Theory, *Composite Structures*, Vol. 225, pp. 111038, **2019**. (SCI, IF= 4.829) https://doi.org/10.1016/j.compstruct.2019.111038
5. M. Kumar, **I.V. Singh**, B.K. Mishra, Fatigue Crack Growth Simulations of Plastically Graded Materials using XFEM and J-Integral Decomposition Approach, *Engineering Fracture Mechanics*, Vol. 216, pp. 106470, **2019**. (SCI, IF=2.908) https://doi.org/10.1016/j.engfracmech.2019.05.002

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