Dr. Indra Vir Singh

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IITR: https://www.iitr.ac.in/~ME/Indra_Vir_Singh
Web of Science: https://www.webofscience.com/wos/author/record/2216771
Scopus: https://www.scopus.com/authid/detail.uri?authorId=57204061377
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Google scholar: https://scholar.google.com/citations?hl=en&user=mgZmcSkAAAAJ

Research Interests

Fracture Mechanics, Fatigue Crack Growth, Damage Mechanics, Mechanical Behavior of Materials, Composites, Failure Analysis, Machine Learning, Microstructure Modeling, Multiscale and Multi-physics Modeling, Finite Element Methods, XFEM, Isogeometric Analysis, XIGA, Meshfree Methods, Phase Field Models

Educational Qualifications

S.No.	Class/Degree	School/College/University	Year
1.	B.Sc. Engg. (Mechanical)	AMU Aligarh	1996
2.	M.Tech. (Applied Mechanics)	IIT 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	145	3	148
Conference/Symposium	112	---	112
Total	257	3	260

Thesis/Dissertation Guidance

	Completed/Submitted	In-Progress	Total
Ph.D.	17	10	27
M.Tech.	52	2	54

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

- Top 2% Scientists in the World in Mechanical Engineering by Standford University, USA, 2020, 2021, 2022.
- Excellence in Academic and Research Award by Institution of Engineers, 2019.
- Best Paper Award in ICMAE Conference, Singapore, December 12-14, 2015.
- Sir Rajendra Nath Mookherjee Memorial Award by Institution of Engineers, 2007.
- Selected for Marquis's Who's Who in World from 2005 to till date.
- MHRD Fellowship in M.Tech.
- Merit Scholarship in B.Tech.

International Collaborations

- Prof. Timon Rabczuk, Chair of Computational Mechanics, Bauhaus University Weimar, Marienstrasse 15, 99423 Weimar, Germany.
- Prof. Stephane Bordas, University of Luxembourg and School of Engineering, Cardiff University, UK.
- Dr. Tinh Q. Bui, Associate Professor, Hirose & Bui Lab, Department of Civil and Environmental Engineering, Tokyo Institute of Technology, Ookayama, Meguro-ku, Tokyo, Japan.
- Dr. Xiaoying Zhuang, Associate Professor, Group Leader, Institute of Continuum Mechanics, Leibniz University Hannover, Germany.
- Prof. Y.E. Pak, State University of New York (SUNY), South Korea.

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.**
- **South Korea, Sunkynkwan University,** Suwon, Korea, March 27-30, **2019.**

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**.
- 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**.
- Introduction to Extended Finite Element Method (XFEM), Isogeometric Finite Element Method, Meshfree Methods. Formulation and Implementation of these methods to Engineering Applications, IIT Mandi, HP, June 22, **2019**.
- Numerical Methods in Engineering: Advances and Applications (8 lectures), AKIN Program of IIT Ropar, IIT Ropar, July 5-7, **2021**.
- Introduction to XFEM and its Application for Solving Engineering Problems, ATAL Faculty Development Program, IIT Ropar, October 12, **2022**.
- Isogeometric FEM and its Applications in a course on "Finite Element Modeling for Engineering Problems", Kaushal Vikas Nigam Scheme (Himachal Government), IIT Mandi, December 9, **2022.**

Special Issues

- Chief Editor for Recent Advances in Computational Mechanics (RACM), Advances in Mechanical Engineering, Sage Publications, https://doi.org/10.1155/2013/158572
- Guest Editor for Special Issue on Advances in Mechanical Problems of Functionally Graded Materials and Structures, https://doi.org/10.3390/books978-3-03921-659-8

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, **Indra Vir Singh**, Element Free Galerkin Methods for Heat Transfer: Fundamentals and Formulations, Lambert Academic Publisher, Germany, **July 2010**.
- ❖ **Indra Vir Singh**, Gagandeep Bhardwaj, Fatigue Crack Growth Analysis of an Interfacial Crack in Heterogonous Material Using XIGA, *Mathematical Analysis of Continuum Mechanics and Industrial Applications II, Proceedings of the International Conference (CoMFoS16)*, Springer Publisher, Singapore, pp. 15-26, **2017**.
- ❖ V.B. Pandey, **I.V. Singh**, B.K. Mishra, Complete Creep Life Prediction Using Continuum Damage Mechanics and XFEM, *Recent Advances in Computational Mechanics and Simulations*, *Lecture Notes in Mechanical Engineering*, Springer, Singapore, **2021**.
- ❖ A. Jha, **I.V. Singh**, B.K. Mishra, R. Singh, R.N. Singh, Numerical Study of Coupled Elasto-Plastic Hydrogen Diffusion at Crack Tip Using XFEM, *Recent Advances in Computational Mechanics and Simulations, Lecture Notes in Mechanical Engineering*, Springer, Singapore, 2021,
- ❖ Neha Duhan, B.K. Mishra, **I.V. Singh**, Electro-Elastic Analysis of Edge Dislocation Dipole in GaN Using XFEM, *Recent Advances in Computational and Experimental Mechanics*, Vol. 1, pp. 141-151, **2022**.
- ❖ Vinay Kumar Yadav, Vidit Gaur, **I.V. Singh**, Low Cycle Fatigue Analysis of High-Strength Aluminum Alloy 2024, *Recent Advances in Computational and Experimental Mechanics*, Vol. 1, pp. 211-223, **2022**.

Sponsored Research Projects

S.N.	Title	Sponsoring Agency	Amount (lakhs)	PI or Co-PI	Status
1.	Development of Elasto-Plastic Element Free Galerkin Code	BRNS, DAE, Mumbai	17.24	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	4.57	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	23.0	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	48.15	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	22.0	PI	Completed (04/2012 - 09/2015)
6.	Prediction of Graphite Failure Strength using RVE Approach and XFEM	BRNS, DAE, Mumbai	24.58	PI	Completed (08/2014 - 08/2017)
7.	Failure Analysis of Engineering Components of Intricate Shape using Extended Isogeometric Analysis	DST, New Delhi	19.50	PI	Completed (09/2014 - 09/2017)
8.	Simulation of High Temperature Elasto-plastic Fatigue Crack Growth using XFEM	DMRL, DRDO, Hyderabad	29.78	PI	Completed (11/2014 - 11/2018)
9.	The Study of Tensile and Impact Behaviour of Reduced Activation Ferritic-Martensitic Steel	BARC, Mumbai	44.94	PI	Completed (02/2015 - 02/2017)
10.	Development of Stochastic Multiscale Framework Based on Microstructural Features for Predicting the Bulk Response of Heterogeneous Materials	CSIR, New Delhi	18.31	PI	Completed (07/2018 - 07/2021)
11.	Development of XFEM based Damage Tolerance Philosophy for the Remaining Life Assessment of Aeroengine Components	AR&DB, New Delhi	17.73	PI	Completed (10/2018 - 12/2021)
12.	Numerical Crack Growth Studies in Hydrided Pressure Tube of PHWR	AERB, Mumbai	25.33	PI	Completed (06/2018 - 12/2021)
13.	Multiscale Simulation Framework for Defect Formation Studies in Electronic Materials and Devices	Indo-Korea Joint Research Proposal	37.93	PI	Completed (06/2018 - 12/2022)
14.	Microstructure based Three-dimensional Elasto-plastic Fatigue Crack Growth Simulations using XFEM	DMRL, DRDO, Hyderabad	49.99	PI	Completed (07/2020 - 12/2022)
15.	Investigation of Creep and High Temperature Fatigue Behavior of Additively Manufactured Ti-6Al-4V Alloys	AR&DB, New Delhi	46.97	Co-PI	In-progress (06/2020 - 06/2023)
16.	Fatigue Design of Welded Joints in Military Bridges: Experiments and Simulations	ARMREB, New Delhi	125.19	PI	In-progress (07/2022 - 06/2025)
17.	Effect of Sequence of Loading on the Fatigue Life of GFRP Composites	AR&DB, New Delhi	140.37	PI	In-progress (04/2023 - 04/2026)
18.	Modelling of Creep and Rolled Joint Leak Tightness in Pressure Tubes	BARC, Mumbai	47.48	PI	In-progress (04/2023 - 04/2026)

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.	Opinion on Spring Nomenclature	Exedy India Ltd., Greater Noida UP	PI	Completed (06/2019-07/2019)
6.	Fatigue Study of Steel Bars	M/s Capacite Infraprojects Ltd., NFS Project, Delhi	PI	Completed (01/2021 – 03/2021)
7.	Tensile and Fatigue Study of Steel Reducer Couplers	M/s Capacite Infraprojects Ltd., BSNL Project, Bangalore	PI	Completed (01/2021 – 02/2021)
8.	Performance Testing of 15.7 mm Strand	M/s SP Singla Constructions Pvt. Ltd., Patna	PI	Completed (11/2020 – 10/2021)
9.	Tensile, Cyclic and Fatigue Study of Rebar Couplers	RM Engineers, Palwal, Haryana	PI	Completed (11/2022 – 01/2023)

Ph.D. Guidance

S.N.	Name of R/S	Thesis Title	Co-guide (if any)	Funding (FT/ PT)	Month & Year of Completion
1.	Lokesh Nair	Development of Metal Matrix Composites for Design Against Fatigue	Prof. P.K. Jha	QIP (FT)	In-Progress
2.	Reetesh Kumar Tiwari	Experimental Investigation of Welded Joints Under Fatigue Loading	---	ARMREB (FT)	In-Progress
3.	Ankur	Numerical Modeling of GFRP Composites under Fatigue Loading	---	MHRD (FT)	In-Progress
4.	Ateeb Ahmad Khan	Mechanical and Fatigue Behavior of Bi-directional GFRP composites	---	QIP (FT)	In-Progress
5.	Sandipan Baruah	Evaluation of Residual Stress in Welded Joints	---	MHRD (FT)	In-Progress
6.	Manoj Singh Bisht	Fatigue Crack Growth Studies of Additively Manufactured Al-Si10Mg Alloy	Dr. Vidit Gaur	MHRD (FT)	In-Progress
7.	Deepak Sharma	Stochastic Simulation of Fatigue Life Scatter in Polycrystalline Materials	---	AR&DB (FT)	In-Progress
8.	Neha Duhan	*Simulations of Dislocations in Semiconductor Materials using XFEM*	Prof. B.K. Mishra	MHRD (FT)	In-Progress
9.	Anjali Jha	*Numerical Crack Growth Studies in Hydrided Pressure Tube of PHWR*	Prof. B.K. Mishra	AERB (FT)	In-Progress
10.	Vinay Kumar Yadav	*An Experimental Investigation of Fracture and Fatigue Behavior of 2024 Al Alloy*	Dr. Vidit Gaur	MHRD (FT)	In-Progress

11.	Jaymalya Jena	A Numerical Study of Cracked Semipermeable Piezoelectric Materials Using XFEM	Dr. Vidit Gaur	DST (FT)	Submitted
12.	Subrato Sarkar	*Failure Analysis using Gradient Damage Mechanics with implementation through Isogeometric Analysis*	Prof. B.K. Mishra	MHRD (FT)	October, 2021
13.	Sanjay Samant	*A Study of Mechanical, Fracture and Fatigue Behavior of Modified 9Cr-1Mo Steel*	Dr. R.N. Singh (BARC)	QIP (FT)	April, 2021
14.	Vibhuti Bhushan Pandey	*Crack Initiation and Growth using Damage Mechanics under Creep Fatigue Environment*	Prof. B.K. Mishra	DRDO (FT)	January, 2021
15.	Manish Kumar	*Fatigue and Creep Crack Growth Analysis using XFEM*	---	MHRD (FT)	September, 2020
16.	Sunil Kumar Singh	*Numerical Simulations of Fracture Mechanics Problems using XIGA*	---	DST (FT)	April, 2020
17.	Manik Bansal	*A Computationally Efficient XFEM Based Stochastic Multiscale Framework for the Analysis of Heterogeneous Materials*	Dr. Kamal Sharma	DAE (FT)	September, 2019
18.	Rangoli Goyal	*Numerical Simulation of Some Problems in Mechanics using Advanced FE Techniques*	Prof. Rama Bhargava	DST (FT)	April, 2018
19.	Amit Shedbale	*Simulation of Indentation, Damage and Crack Growth Using Coupled FE-EFG Approach*	---	MHRD (FT)	April, 2017
20.	Gagandeep Bhardwaj	*Fatigue Crack Growth Simulations using Extended Isogeometric Analysis*	---	MHRD (FT)	April, 2016
21.	Sachin Kumar	*Crack Growth Simulations in Ductile Materials using XFEM/Coupled FE-EFGM*	Prof. B.K. Mishra	MHRD (FT)	August, 2015
22.	Sunkulp Goel	*Mechanical Behaviour of UFG Zircaalloy-2 Processed by Cryorolling: Experiment and Simulation*	Prof. R. Jayaganthan	DST (FT)	August, 2015
23.	Kamal Sharma	*Numerical Simulation of Crack Growth Problems Using EFGM/XFEM*	Prof. B.K. Mishra	BARC (PT)	April, 2015
24.	Vineet Kumar	*An Investigation of Mechanical and Fracture Behavior of Ultrafine Grained 6082 Al alloy*	Prof. B.K. Mishra	MHRD (FT)	January, 2015
25.	Somnath Bhattacharya	*Numerical Simulation of Fatigue Failure in Functionally Graded Materials using XFEM*	Prof. B.K. Mishra	MHRD (FT)	July, 2012
26.	Rajesh K. Sharma	*Element Free Galerkin Method for Fluid Flow, Heat and Mass Transfer in Porous Medium*	Prof. Rama Bhargava	MHRD (FT)	October, 2011
27.	Mohit Pant	*Meshfree Simulation of Fracture Mechanics Problems under Thermo-Mechanical Loading*	Prof. B.K. Mishra	MHRD (FT)	December, 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	Associate 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
11.	Manik Bansal	University of Pittsburgh, USA	Postdoctoral Researcher
12.	Sanjay Samant	G.B. Pant Engg. College, Pauri	Assistant Professor
13.	Sunil Kumar Singh	IIT Patna, Bihar	Assistant Professor
14.	Manish Kumar	University of Udine, Udine, Italy	Assistant Professor
15.	Vibhuti Bhushan Pandey	University of California, USA	Postdoctoral Researcher
16.	Subrato Sarkar	Rensselaer Polytechnic, USA	Postdoctoral Researcher

M.Tech. Guidance

S. N.	Title	Month & Year Awarded	Name of The Scholar	Co-supervisor (if any)
1	Estimation of Leak Tightness in the Rolled Joined Pressure Tube–End Fitting Assembly used in PHWR	June 2022	Puneet Kumar Singh	---
2	Delamination of Laminated Composite under Compressive Force	June 2020	Asif Iqbal	Prof. B. K. Mishra
3	Crack Growth Studies in Pressure Tubes	June 2020	Amit Sharma	Prof. B. K. Mishra
4	Effect of Ageing on Mechanical and Fatigue Behaviour of 2014 Aluminium Alloy	June 2019	Roshan Kumar	Prof. B. K. Mishra
5	Effect of Cryorolling on Mechanical and Fatigue Crack Growth Behavior of Al Alloy 6351	June 2019	Gynendra Saini	Prof. B. K. Mishra
6	Modelling of Crack in Preesure Vessels BY IGA Using Thin Shell Theory	June 2018	Rijul Singla	Prof. B. K. Mishra Dr. Xiaoying Zhuang
7	Crack Growth Modeling Using XIGA	June, 2017	Lalit Mohan	Prof. B. K. Mishra
8	Effect of Hot Rolling on Fracture and Fatigue Behavior of P92 Steel	June, 2017	Amit	Dr. R. K. Singh
9	Fracture Analysis of Piezoelectric Material by XFEM	June, 2016	Mohit Goel	Prof. B. K. Mishra
10	Elasto-plastic Crack Growth Simulation using XFEM	June, 2015	Aakash Bhuwal	Prof. B. K. Mishra

11	Modeling and Simulation of Nonlinear Problems Using XFEM	June, 2015	Amit Kumar Sharma	Prof. B. K. Mishra
12	Modelling and Simulation of Nuclear Graphite using XFEM	June, 2015	Rajat Pratap	Prof. B. K. Mishra
13	Modelling and Simulation of Solid Mechanics Problems using Isogeometric Analysis	June, 2015	Kirti Sharma	Prof. B. K. Mishra
14	Modeling and Finite Element Simulation of Smart Structures	June, 2015	Tarun Sachdeva	---
15	Mechanical Behavior of Aluminum Alloys: Experimental Study & Simulation	June, 2014	Rajwinder Singh	Prof. R. Jayaganthan
16	Experimental Investigation and Numerical Simulation of Accumulative Roll Bonded 5080 Aluminium Alloy	June, 2014	Shantanu Kumar Das	Prof. B. K. Mishra
17	Nonlinear Simulation of Solid Mechanics Problems Using EFGM/XFEM	June, 2014	Suneel Kumar Sharma	Prof. B. K. Mishra
18	Numerical Simulation of Cracked Plate Using Isogeometric Analysis	June, 2014	Virender Kumar	Prof. B. K. Mishra
19	Multiscale Modelling of Nuclear Graphite Using XFEM	June, 2014	Yogesh Bisht	Prof. B. K. Mishra
20	Crack Growth Simulation in Laminated Composite Using FEM	Dec., 2013	Amit Kumar	---
21	Extended Isogeometric Finite Element for the Simulation of Fracture Mechanics Problems	Dec., 2013	Subrato Sarkar	Prof. B. K. Mishra
22	Numerical Analysis of Nonlinear Solid Mechanics Problems Using XFEM	June, 2013	Amit Shedbale	Prof. B. K. Mishra
23	Numerical Simulation of Contact Problems Using XFEM/EFGM	June, 2013	Azher Jameel	Prof. B. K. Mishra
24	Crack Growth Analysis and Weight Optimization of Railway Casnub Bogie By Using FEM	June, 2013	Sushil Kumar Maurya	Prof. B. K. Mishra
25	3-D Simulation of Interpenetrating Phase Composites By FEM/EFGM	June, 2013	Pramod Kumar	Prof. B. K. Mishra
26	Numerical Simulation of Branched and Intersecting Cracks in the Presence of Multiple Discontinuities Using XFEM	June, 2013	Vivek Kumar Sharma	Prof. B. K. Mishra
27	Elasto-plastic Fracture and Fatigue Simulation Using FEM/XFEM	June, 2013	Kumar Gaurav	Prof. R. Jayaganthan
28	Experimental and Numerical Simulation of Ultrafine Grained Zr-alloys	June, 2013	A. Raja	Prof. R. Jayaganthan
29	Failure Analysis of Interpenetrating Phase Composites by Meshfree Methods	June, 2012	Ankit Agarwal	Prof. B. K. Mishra
30	Multi-scale modeling and simulation of 3D-Braided Composites Using FEM/XFEM	June, 2012	Anil Kumar Sahoo	Prof. B. K. Mishra
31	Numerical Simulation of Elasto-Plastic Large Deformation Problems Using FEM/EFGM	June, 2012	Rajesh Kumar	Prof. B. K. Mishra
32	An Isogeometric Approach for the Simulation of Solid Mechanics Problems	June, 2012	Pravin Kumar	Prof. B. K. Mishra
33	Process Modeling of ECH with FEM	June, 2012	Ravi Sewak	Prof. P. K. Jain
34	Numerical simulation of 3-D cracks using XFEM	June, 2011	Saurabh Kumar Yadav	---

35	Numerical simulation of 3-D fracture mechanics problems using EFGM	June, 2011	Mangesh Brahamnkar	Prof. B. K. Mishra
36	Numerical simulation of 2-D fracture mechanics problems using XFEM	June, 2011	Roshan U. Patil	Prof. B. K. Mishra
37	Mechanical behavior of ultrafine grained aluminium 2014 alloy	June, 2011	Anurag Tiwari	Prof. R. Jayaganthan
38	Mechanical properties and fracture studies of UFG 7075 Al alloy under different loads (Experimental and Simulation Studies)	June, 2010	Prosenjit Das	Prof. R. Jayaganthan
39	Numerical simulation of fatigue crack problems using element free Galerkin method	June, 2010	Sumit Vispute	Prof. B. K. Mishra
40	The simulation of multiple cracks in welded structure using element free Galerkin method	June, 2010	Gurwinder Singh	Prof. V. H. Saran
41	Fracture studies of UFG Al-alloys	June, 2010	Lalit Kralia	Prof. P. M. Pathak
42	Development and characterization of Diopside ($CaMgSi_2O_6$) - Jadeite ($NaAlSi_2O_6$) based Glass-Ceramics	June, 2010	Rinkel	Prof. R. Jayaganthan, Dr. R. Conradt
43	Investigation of elasto-plastic fracture behaviour using EFGM	June, 2009	Bandaru Aswani Kumar	Prof. V. H. Saran
44	The numerical simulation of bi-material problems using meshfree methods	June, 2009	Ch. Raghuveer	Prof. B. K. Mishra
45	Finite element simulation for the optimization of parameters in continuous casting of slabs	June, 2009	Rajeev Kumar	Prof. P. K. Jha
46	XFEM simulation of 2-D fracture mechanics problems	June, 2009	Sumit Kumar	----
47	Vibration analysis of single walled carbon nanotube (SWCNT) based mass sensor	June, 2008	Ashok Boda	Prof. S. P. Harsha
48	Evaluation of the mechanical properties of carbon nanotube composites by finite element analysis	June, 2008	Gorla Lokeshwari	Prof. S. P. Harsha
49	Analysis of edge crack problem using meshfree method	June, 2008	Ravi Aher	---
50	Application of meshless element free Galerkin method to three-dimensional heat transfer problems	May, 2003	Amit Umdekar	---
51	Solution of heat transfer problems using meshless EFG method	May, 2003	Avinash Masurkar	---
52	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	Month & Year of Completion
1.	Amogh Tandon, Isshita	Development of Finite Element and Machine Learning Based Computational Model for Predicting Material Properties of Porous Additively Manufactured Materials	June, 2022
2.	Lohit Malik Ritvik Bansal Gurtej Singh Saini	Study and Analysis of Mechanical Properties of Wind Turbine Blade using Machine Learning Techniques	June, 2021

1.	Nishendra Singh	Finite Element Analysis to Study the Effect of Reconstructive Surgery on Anterior Cruciate Ligament	June 2020
2.	Tryaksh Gupta	Crack Growth Study Under Spectrum Fatigue Loading Using XFEM	June 2020
3.	Rishit Mehta	Finite Element Modelling and Simulation of Mandibular Distraction Procedure using Shape Memory Alloy	June, 2020
4.	Harshit Singh	Creep Crack growth Study using User Developed Subroutines in Abaqus	June, 2019
5.	Dipanshu Mittal, Chava Sai Suhas Rayadu	ABAQUS implementation of XFEM to simulate fatigue crack growth	May 2018
6.	Ankit Rathore, Suyash Patel, Ajay Meena	Fixture and Specimen Design for Biaxial Load Testing	May, 2014
7.	Prashant Kumar, Rahul Rajpoot, Pranav Bajpai	Modeling and Simulation of Indian Railway BOXNHL Wagon	May, 2014
8.	Ravneet Singh, Rumanuddin Qureshi, Basvoju Abhinay	Multi Scale Modeling and Simulation of 3D Braided Fibre Reinforced Composites Without and With CNT's	May, 2013
9.	Md. Asim Ali, Abhinav Kesri, Sarvesh Sonwani	Modeling and Simulation of Natural Fibre Composites	May, 2013
10.	Manpreet Singh, Nirbhay Agarwal, Raman Goyal	Study and Testing of Mechanical Behaviour of Forged Aluminum 6082 Alloy	May, 2013
11.	Ayush Bansal, Keshav Sehgal, Mayank Doda	Modelling, Simulation and Weldment Optimization of Indian Railway Wagon	May, 2013
12.	Atul Kumar Bansal, Suresh Kumar Meena, Vivek Kumar	Experimental Analysis and Simulation of Fracture and Fatigue in 6082 Aluminum Alloy	May, 2012
13.	Apoorv Sharma, Nitin Jain	Failure Analysis of Low Alloy High Strength Steels by Finite Element Method	May, 2010
14.	Sudheer Chaudhary, Vidit Gaur	A Numerical Study-Thermal Cracking in Disc Brakes	May, 2010

Journal Publications

1. Neha Duhan, B.K. Mishra, **I.V. Singh**, XFEM for Multiphysics Analysis of Edge Dislocations with Nonuniform Misfit Strain: A Novel Enrichment Implementation, *Computer Methods in Applied Mechanics and Engineering*, **2023**. (SCI, IF=6.756).
2. Jayamalya Jena, **I.V. Singh**, Vidit Gaur, XFEM for Semipermeable Crack in Piezoelectric Material with Maxwell Stress, *Engineering Fracture Mechanics*, Vol. 285, Article 109281, **2023**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2023.109281
3. V.K. Yadav, Vidit Gaur, **I.V. Singh**, Corrosion-Fatigue Behavior of Welded Aluminum Alloy 2024-T3, *International Journal of Fatigue*, Vol. 173, Article 107675, **2023**. (SCI, IF=5.489) https://doi.org/10.1016/j.ijfatigue.2023.107675
4. Alok Negi, **I.V. Singh**, Imad Barsoum, A gradient-enhanced damage model for anisotropic brittle fracture with interfacial damage in polycrystalline materials, *Engineering Fracture Mechanics*, Vol. 280, Article 109093, **2023**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2023.109093

5. V.B. Pandey, **I.V. Singh**, B.K. Mishra, A New Creep-Fatigue Interaction Damage Model and CDM-XFEM framework for Creep-Fatigue Crack Growth Simulations, *Theoretical and Applied Fracture Mechanics*, Vol. 124, Article 103740, **2023**. (SCIE, IF=4.374) https://doi.org/10.1016/j.tafmec.2022.103740
6. Manoj Singh Bisht, Vidit Gaur, **I.V. Singh**, On mechanical properties of SLM Al–Si alloy: Role of heat treatment-induced evolution of silicon morphology, *Materials Science and Engineering A,* Vol. 858, Article 144157, **2022**. (SCI, IF=6.044) https://doi.org/10.1016/j.msea.2022.144157
7. J. Jena, **I.V. Singh**, V. Gaur, A Numerical Study of Semipermeable Cracks in Magneto-Electro-Elastic Material using XFEM, *Engineering Fracture Mechanics*, Vol. 275, Article 108817, **2022**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2022.108817
8. Anjali Jha, Subrato Sarkar, **I.V. Singh**, B.K. Mishra, Ritu Singh, R.N. Singh, A Study on the Effect of Residual Stresses on Hydride Assisted Crack in Zr-2.5Nb Pressure Tube Material using XFEM, *Theoretical and Applied Fracture Mechanics*, Vol. 121, Article 103536, **2022**. (SCIE, IF=4.374) https://doi.org/10.1016/j.tafmec.2022.103536
9. Manik Bansal, Subrato Sarkar, **I.V. Singh,** An XFEM-Strain Gradient Damage Model for Efficient Modeling of Materials with Reinforcement Particles, *Engineering Fracture Mechanics*, Vol. 271, Article 108667, **2022**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2022.108667
10. Subrato Sarkar, **I.V. Singh**, B.K. Mishra, A Simple and Efficient Implementation of Localizing Gradient Damage Method in COMSOL for Fracture Simulation, *Engineering Fracture Mechanics*, Vol. 269, Article 108552, **2022**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2022.108552
11. Deepak Sharma, **I.V. Singh**, Jalaj Kumar, A Microstructure Based Elasto-Plastic Polygonal FEM and CDM Approach to Evaluate LCF Life in Titanium Alloys, *International Journal of Mechanical Sciences*, Vol. 225, Article 107356, **2022.** (SCI, IF=6.772) https://doi.org/10.1016/j.ijmecsci.2022.107356
12. Neha Duhan, R.U. Patil, B.K. Mishra, I.V. Singh, Y.E. Pak, Nonlinear Thermo-Elastic Analysis of Edge Dislocations with Internal Heat Generation in Semiconductor Materials, *Mechanics of Materials*, Vol. 169, Article 104322, **2022**. (SCI, IF=4.137) https://doi.org/10.1016/j.mechmat.2022.104322
13. J. Jena, S.K. Singh, V. Gaur, **I.V. Singh**, S. Natarajan, A New Framework based on XFEM to Study the Role of Electrostatic Tractions in Semipermeable Piezoelectric Material, *Engineering Fracture Mechanics*, Vol. 266, Article 108398, **2022**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2022.108398
14. Sandipan Baruah, Subrato Sarkar, **I.V. Singh**, B.K. Mishra, A Computational Framework Based on FEA, ML and GA for Estimation of Welding Residual Stresses, *Finite Elements in Analysis & Design* Vol. 205, Article 103753, **2022**. (SCI, IF=2.618) https://doi.org/10.1016/j.finel.2022.103753
15. Subrato Sarkar, **I.V. Singh**, B.K. Mishra, A Localizing Gradient Plasticity Model for Ductile Fracture, *Computer Methods in Applied Mechanics and Engineering*, Vol. 388, Article 114205, **2022**. (SCI, IF=6.756) https://doi.org/10.1016/j.cma.2021.114205
16. V.K. Yadav, Vidit Gaur, **I.V. Singh**, Combined Effect of Residual and Mean Stresses on Fatigue Behavior of Welded Aluminum 2024 Alloy, *International Journal of Fatigue*, Vol. 155, , Article 106565, **2022**. (SCI, IF=5.489) https://doi.org/10.1016/j.ijfatigue.2021.106565
17. Deepak Sharma, V.B. Pandey, **I.V. Singh**, S. Natarajan, Jalaj Kumar, Shahnawaj Ahmad, A Polygonal FEM and Continuum Damage Mechanics based Framework for Stochastic Simulation of Fatigue Life Scatter in Duplex Microstructure Titanium Alloys, *Mechanics of Materials*, Vol. 163, Article 104071, **2021.** (SCI, IF=4.137) https://doi.org/10.1016/j.mechmat.2021.104071
18. A.S. Shedbale, **I.V. Singh**, B.K. Mishra, Indentation Behavior of Metal Matrix Composites Reinforced with Arbitrary Shape Particle using a Coupled FE-EFG Approach, *Mechanics of Advanced Materials and Structures*, **2021.** (SCIE, IF=4.03) https://doi.org/10.1080/15376494.2021.1931580
19. S.M. Dsouza, Hirshikesh, T.V. Mathew, **I.V. Singh**, S. Natarajan, A Non-Intrusive Stochastic Phase Field Method for Crack Propagation in Functionally Graded Materials, *Acta Mechanica*, Vol. 232, pp. 2555–2574, **2021**. (SCI, IF=2.102) https://doi.org/10.1007/s00707-021-02956-z
20. J. Jena, S.K. Singh, V. Gaur, **I.V. Singh**, S. Natarajan, A New Framework based on XFEM for Cracked Semipermeable Piezoelectric Material, *Engineering Fracture Mechanics*, Vol. 253, Article 107874, **2021**. (SCI, IF=4.898)https://doi.org/10.1016/j.engfracmech.2021.107874
21. Subrato Sarkar, **I.V. Singh**, B.K. Mishra, A Simplified Continuous-Discontinuous Approach for Fracture based on Decoupled Localizing Gradient Damage Method, *Computer Methods in Applied Mechanics and Engineering,* Vol. 383, Article 113893, **2021**. (SCI, IF=6.756) https://doi.org/10.1016/j.cma.2021.113893

22. S.K. Singh, **I.V. Singh**, Extended Isogeometric Analysis for Fracture in Functionally Graded Magneto-Electro-Elastic Material, *Engineering Fracture Mechanics*, **2021**. (SCI, IF=4.406) https://doi.org/10.1016/j.engfracmech.2021.107640
23. V.B. Pandey, **I.V. Singh**, B.K. Mishra, A Strain-based Continuum Damage Model for Low Cycle Fatigue under Different Strain Ratios, *Engineering Fracture Mechanics*, Vol. 242, Article 107479, **2021**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2020.107479
24. Neha Duhan, R.U. Patil, B.K. Mishra, **I.V. Singh**, Y.E. Pak, Thermo-Elastic Analysis of Edge Dislocation using Extended Finite Element Method, *International Journal of Mechanical Sciences*, Vol. 192, Article 106109, **2021.** (SCI, IF=6.772) https://doi.org/10.1016/j.ijmecsci.2020.106109
25. Subrato Sarkar, **I.V. Singh**, B.K. Mishra, A thermo-Mechanical Gradient Enhanced Damage Method for Fracture, *Computational Mechanics*, Vol. 66, pp. 1399–1426, **2020**, (SCI, IF=4.014) https://doi.org/10.1007/s00466-020-01908-z
26. V.B. Pandey, S.S. Samant, **I.V. Singh**, B.K. Mishra, An Improved Methodology based on Continuum Damage Mechanics and Stress Triaxiality to Capture the Constraint Effect during Fatigue Crack Propagation, *International Journal of Fatigue*, Vol. 140, Article 105823, **2020**. (SCI, IF=5.489) https://doi.org/10.1016/j.ijfatigue.2020.105823
27. S.S. Samant, **I.V. Singh**, R.N. Singh, Effect of Thermo-Mechanical Treatment on High Temperature Tensile Properties and Ductile-Brittle Transition Behavior of Modified 9Cr-1Mo Steel, *Metallurgical and Materials Transactions A* **2020.** (SCI, IF=2.050) https://doi.org/10.1007/s11661-020-05846-6
28. Sanjay Samant, V.B. Pandey, **I.V. Singh**, R.N. Singh, Effect of Double Austenitization Treatment on Fatigue Crack Growth and High Cycle Fatigue Behavior of Modified 9Cr-1Mo Steel, *Materials Science and Engineering A*, Vol. 788, Article 139495, **2020**. (SCI, IF=6.044) https://doi.org/10.1016/j.msea.2020.139495
29. S.K. Singh, **I.V. Singh,** Analysis of Cracked Functionally Graded Piezoelectric Material using XIGA, *Engineering Fracture Mechanics* Vol. 230, Article 107015, **2020**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2020.107015
30. V.K. Yadav, V. Gaur, **I.V. Singh**, Effect of post-weld heat treatment on mechanical properties and fatigue crack growth rate in welded AA-2024, *Materials Science and Engineering A,* Vol. 779, pp. 139116, **2020**. (SCI, IF=6.044) https://doi.org/10.1016/j.msea.2020.139116
31. 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*, Vol. 221, pp. 101-121, **2020**. (SCI, IF=2.635) https://doi.org/10.1007/s10704-019-00412-7
32. M. Kumar, **I.V. Singh**, Numerical Investigation of Creep Crack Growth in Plastically Graded Materials using C(t) and XFEM, *Engineering Fracture Mechanics*, Vol. 226, pp. 106820, **2020**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2019.106820
33. 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=4.898) https://doi.org/10.1016/j.engfracmech.2019.106790
34. 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= 6.603) https://doi.org/10.1016/j.compstruct.2019.111038
35. 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=4.406) https://doi.org/10.1016/j.engfracmech.2019.05.002
36. Subrato Sarkar, **I.V. Singh**, B.K. Mishra, A.S. Shedbale, L.H. Poh, A Comparative Study and ABAQUS Implementation of Conventional and Localizing Gradient Enhanced Damage Models, *Finite Elements in Analysis & Design*, Vol. 160, pp. 1-31, **2019.** (SCI, IF=2.618) https://doi.org/10.1016/j.finel.2019.04.001
37. Manik Bansal, **I.V. Singh**, B.K. Mishra, Susanne Claus, S.P.A. Bordas, A Simple and Robust Computational Homogenization Approach for Heterogeneous Particulate Composites, *Computer Methods in Applied Mechanics and Engineering*, Vol. 349, pp. 45–90, **2019**. (SCI, IF=6.756 https://doi.org/10.1016/j.cma.2019.02.001
38. Roshan Patil, B.K. Mishra, **I.V. Singh**, A Multiscale Framework based on Phase Field Method and XFEM to Simulate Fracture in Highly Heterogeneous Materials, *Theoretical and Applied Fracture Mechanics,* Vol. 100, pp. 390-415, **2019**. (SCIE, IF=4.374) https://doi.org/10.1016/j.tafmec.2019.02.002
39. Manik Bansal, **I.V Singh**, B.K. Mishra, S.P.A. Bordas, A Parallel and Efficient Multi-Split XFEM for 3-D Analysis of Heterogeneous Materials, *Computer Methods in Applied Mechanics and Engineering* Vol. 347, pp. 365–401, **2019**. (SCI, IF=6.756) https://doi.org/10.1016/j.cma.2018.12.023
40. V.B. Pandey, **I.V. Singh**, B.K. Mishra, S. Ahmad, A. Venugopal Rao, Vikas Kumar, Creep Crack Simulations Using Continuum Damage Mechanics and XFEM, *International Journal of Damage Mechanics*, Vol. 29, pp. 3-34, **2019**, (SCIE, IF=3.988) https://doi.org/10.1177/1056789517737593

41. S. Kumar, **I.V. Singh**, B.K. Mishra, A. Singh, Kamal Sharma, I.A. Khan, A Homogenized Multigrid XFEM to Predict the Crack Growth Behavior of Ductile Material in the Presence of Microstructural Defects, *Engineering Fracture Mechanics*, Vol. 205, pp. 577-602, **2019**, (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2016.03.051
42. V.B. Pandey, **I.V. Singh**, B.K. Mishra, S. Ahmad, A. Venugopal Rao, Vikas Kumar, A New Framework Based on Continuum Damage Mechanics and XFEM for High Cycle Fatigue Crack Growth Simulations, *Engineering Fracture Mechanics*, Vol. 206, pp. 172-200, **2019.** (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2018.11.021
43. Sanjay Samant, **I.V. Singh**, R.N. Singh, Effect of Tempering and Rolling on Fatigue Crack Growth Behavior of Modified 9Cr-1Mo Steel, *Journal of Materials Engineering and Performance*, Vol. **27**(11), pp. 5898-5912, **2018.** (SCIE, IF=2.036) https://doi.org/10.1007/s11665-018-3700-4
44. Roshan Patil, B.K. Mishra, **I.V. Singh**, T.Q. Bui, A New Multiscale Phase Field Method to Simulate Failure in Composites, *Advances in Engineering Software*, Vol. 126, pp. 9-33, **2018.** (SCIE, IF=4.255) https://doi.org/10.1016/j.advengsoft.2018.08.010
45. Sanjay Samant, **I.V. Singh**, R.N. Singh, Influence of Intermediate Rolling on Mechanical Behavior of Modified 9Cr-1Mo Steel, *Materials Science and Engineering A*, Vol. 738, pp. 135-152, **2018**. (SCI, IF=6.044) https://doi.org/10.1016/j.msea.2018.09.092
46. S.K. Singh, **I.V. Singh**, G. Bhardwaj, B. K. Mishra, A Bézier Extraction based XIGA Approach for Three-Dimensional Crack Simulations, *Advances in Engineering Software*, Vol. 125, pp. 55-93, **2018.** (SCIE, IF=4.255) https://doi.org/10.1016/j.advengsoft.2018.08.014
47. Roshan Patil, B.K. Mishra, **I.V. Singh**, A Local Moving Extended Phase Field Method (LMXPFM) for Failure Analysis of Brittle Materials, *Computer Methods in Applied Mechanics and Engineering*, Vol. 342, pp. 674–709, **2018**. (SCI, IF=6.756) https://doi.org/10.1016/j.cma.2018.08.018
48. M. Kumar, S. Ahmad, **I.V. Singh**, A.V. Rao, J. Kumar, Vikas Kumar, Experimental and Numerical Studies to Estimate Fatigue Crack Growth Behavior of Ni-Based Super Alloy, *Theoretical and Applied Fracture Mechanics*, Vol. 96, pp. 604-616, **2018**. (SCIE, IF=4.374) https://doi.org/10.1016/j.tafmec.2018.07.002
49. M. Kumar, **I.V. Singh**, B.K. Mishra, S. Ahmad, A.V. Rao, Vikas Kumar, Mixed Mode Crack Growth in Elasto-Plastic-Creeping Solids using XFEM, *Engineering Fracture Mechanics*, Vol. 199, pp. 489-517, **2018**. (SCI, IF=4.898) https://doi.org/10.1016/j.engfracmech.2018.05.014
50. S.K. Singh, **I.V. Singh**, B.K. Mishra, G. Bhardwaj, S.K. Singh, Analysis of Cracked Plate Using Higher-Order Shear Deformation Theory: Asymptotic Crack-Tip Fields and XIGA Implementation, *Computer Methods in Applied Mechanics and Engineering*, Vol. 336, pp. 594–639, **2018**. (SCI, IF=6.756) https://doi.org/10.1016/j.cma.2018.03.009
51. Sunkulp Goel, Nikhil Kumar, R. Jayaganthan, **I.V. Singh,** D. Srivastava, Role of shear localization in nanocrystallisation of zircaloy-2 processed by wire rolling at cryo temperature, *Materials Science and Engineering A*, Vol. 718, pp. 111–122, **2018**. (SCI, IF=6.044) https://doi.org/10.1016/j.msea.2018.01.089
52. Roshan Patil, B.K. Mishra, **I.V Singh**, An Adaptive Multiscale Phase Field Method for Brittle Fracture, *Computer Methods in Applied Mechanics and Engineering*, Vol. 329, pp. 254–288, **2018**. (SCI, IF= 6.756) https://doi.org/10.1016/j.cma.2017.09.021
53. A.S. Shedbale, **I.V. Singh**, B.K. Mishra, Heterogeneous and Homogenized Models for Predicting the Indentation Response of Particle Reinforced Metal Matrix Composites, *International Journal of Mechanics and Materials in Design*, Vol. 13, pp. 531-552, **2017**. (SCIE, IF=4.011) https://doi.org/10.1007/s10999-016-9352-3
54. Manik Bansal, **I.V. Singh**, B.K. Mishra, Kamal Sharma, I.A. Khan, A two-scale stochastic framework for predicting failure strength probability of heterogeneous materials, *Composite Structures*, Vol. 179, pp. 294-325, **2017**. (SCI, IF= 6.603) https://doi.org/10.1016/j.compstruct.2017.07.044
55. Manik Bansal, **I.V Singh**, B.K. Mishra, Kamal Sharma, I.A. Khan, A Numerical Prediction of Flexural Strength Probability for NBG-18 Nuclear Grade Graphite using Strength Pair Model, *Journal of Strain Analysis for Engineering Design*, Vol. 52(3), pp. 204–211, **2017**. (SCI, IF=1.935) https://doi.org/10.1177/0309324717698609
56. Himanshu Pathak, Akhilendra Singh, **I.V. Singh**, Numerical Simulation of 3D Thermo-Elastic Fatigue Crack Growth Problems Using Coupled FE-EFG Approach, *Journal of the Institution of Engineers India-Series C*, Vol. 98(3), pp 295–312, **2017**. (IF=1.42) https://doi.org/10.1007/s40032-016-0256-7
57. Xiaofei Hu, Tinh Quoc Bui, Jining Wang, Weian Yao, Lan Hoang That Ton, **Indra Vir Singh**, Satoyuki Tanaka, A new cohesive crack tip symplectic analytical singular element involving plastic zone length for fatigue crack growth prediction under variable amplitude cyclic loading, *European Journal of Mechanics - A/Solids*, Vol. 65, pp. 79-90, **2017**. (SCI, IF=4.873) http://dx.doi.org/10.1016/j.euromechsol.2017.03.008
58. S.K. Singh, **I. V. Singh**, B.K. Mishra, G. Bhardwaj, T.Q. Bui, A Simple, Efficient and Accurate Bézier Extraction based T-spline XIGA for Crack Simulations, *Theoretical and Applied Fracture Mechanics*, Vol. 88, pp. 74-96, **2017**. (SCIE, IF=4.374) http://dx.doi.org/10.1016/j.tafmec.2016.12.002

59. Manik Bansal, **I.V Singh**, B.K. Mishra, Kamal Sharma, I.A. Khan, A Stochastic XFEM Model for the Tensile Strength Prediction of Heterogeneous Graphite based on Microstructural Observations, *Journal of Nuclear Materials*, Vol. 487, pp. 143-157, **2017**. (SCI, IF=3.555) http://dx.doi.org/10.1016/j.jnucmat.2016.12.045
60. Roshan Patil, B.K. Mishra, **I.V Singh**, A New Multiscale XFEM for the Elastic Properties Evaluation of Heterogeneous Materials, *International Journal of Mechanical Sciences*, Vol. 122, pp. 277-287, **2017**. (SCI, IF=6.772) http://dx.doi.org/10.1016/j.ijmecsci.2017.01.028
61. A.S. Shedbale, **I.V. Singh**, B.K. Mishra, Kamal Sharma, Ductile Failure Modeling and Simulations Using Coupled FE-EFG Approach, *International Journal of Fracture*, Vol. 203, pp. 183-209, **2017**. (SCI, IF=2.635) http://dx.doi.org/10.1007/s10704-016-0137-3
62. Vasanth Balakrishnan, P. Roshan, Sunkulp Goel, R. Jayaganthan, **I.V. Singh**, Experimental and XFEM Simulation of Tensile and Fracture Behavior of Al 6061 Alloy Processed by Severe Plastic 6061 Alloy Processed by Severe Plastic Deformation, *Metallography, Microstructure, and Analysis*, Vol. 6, pp. 55-72, **2017**. (IF=1.27) https://doi.org/10.1007/s13632-016-0332-7
63. Himanshu Pathak, Akhilendra Singh, **I.V. Singh**, Three-Dimensional Quasi-Static Interfacial Crack Growth Simulations in Thermo-Mechanical Environment by Coupled FE-EFG Approach, *Theoretical and Applied Fracture Mechanics*, Vol. 86, Part B, pp. 267-283, **2016**. (SCIE, IF=4.374) http://dx.doi.org/10.1016/j.tafmec.2016.08.001
64. G. Bhardwaj, S.K. Singh, **I.V. Singh,** B.K. Mishra, T. Rabczuk, Fatigue Crack Growth Analysis of an Interfacial Crack in Heterogeneous Materials using Homogenized XIGA, *Theoretical and Applied Fracture Mechanics*, Vol. 85, Part B, pp. 294-319, **2016**. (SCIE, IF=4.374) http://dx.doi.org/10.1016/j.tafmec.2016.04.004
65. Sunkulp Goel, Nikhil Kumar, Devasri Fuloria, R. Jayaganthan, **I.V. Singh**, D. Srivastava G.K. Dey, and N. Saibaba, Evaluating Fracture Toughness of Rolled Zircaloy-2 at Different Temperatures using XFEM, *Journal of Materials Engineering and Performance*, Vol. 25(9), pp. 4046-4058, **2016**. (SCIE, IF=2.036) http://dx.doi.org/10.1007/s11665-016-2241-y
66. A.S. Shedbale, **I.V. Singh**, B.K. Mishra, A Coupled FE–EFG Approach for Modeling Crack Growth in Ductile Materials, *Fatigue & Fracture of Engineering Materials and Structures*, Vol. 39(10), pp. 1204-1225, **2016**. (SCIE, IF=3.459) http://dx.doi.org/10.1111/ffe.12423
67. Manish Kumar, **I.V. Singh**, B. K. Mishra, S. Ahmad, A. Venugopal Rao, Vikas Kumar, A Modified Theta Projection Model for Creep Behavior of Metals and Alloys, *Journal of Materials Engineering and Performance*, Vol. 25(9), pp. 3585-3592, **2016**. (SCIE, IF=2.036) http://dx.doi.org/10.1007/s11665-016-2197-y
68. Minh Ngoc Nguyen, Tinh Quoc Bui, Thien Tich Truong, Ngoc Anh Trinh, **Indra Vir Singh**, Tiantang Yu, Duc Hong Doan, Enhanced nodal gradient 3D consecutive-interpolation tetrahedral element (CTH4) for heat transfer analysis, *International Journal of Heat and Mass Transfer*, Vol. 103, pp. 14–27, **2016.** (SCI, IF=5.584) http://dx.doi.org/10.1016/j.ijheatmasstransfer.2016.07.038
69. **I.V. Singh,** A.S. Shedbale, B.K. Mishra, Material Property Evaluation of Particle Reinforced Composites Using Finite Element Approach, *Journal of Composite Materials*, Vol. 50(20), pp. 2757–2771, **2016**. (SCI, IF=2.591) http://dx.doi.org/10.1177/0021998315612539
70. A.S. Shedbale, **I.V. Singh**, B.K. Mishra, K. Sharma, Evaluation of Mechanical Properties using Spherical Ball Indentation and Coupled FE-EFG Approach, *Mechanics of Advanced Materials and Structures*, Vol. 23, pp. 832–843, **2016**. (SCIE, IF= 4.03) http://dx.doi.org/10.1080/15376494.2015.1029171
71. G. Bhardwaj, **I.V. Singh**, B.K. Mishra, Virender Kumar, Numerical Simulations of Cracked Plate using XIGA under Different Loads and Boundary Conditions, *Mechanics of Advanced Materials and Structures*, Vol. 23, pp. 704–714, **2016**. (SCIE, IF= 4.03) http://dx.doi.org/10.1080/15376494.2015.1029159
72. S. Kumar, **I.V. Singh,** B.K. Mishra, A. Singh, New Enrichments in XFEM to Model Dynamic Crack Response of 2-D Elastic Solids, *International Journal of Impact Engineering*, Vol. 87, pp. 198–211. **2015**. (SCI, IF= 4.208) http://dx.doi.org/10.1016/j.ijimpeng.2015.03.005
73. Himanshu Pathak, Akhilendra Singh, **I.V. Singh**, S.K. Yadav, Fatigue Crack Growth Simulations of 3-D Linear Elastic Cracks under Thermal Load by XFEM, *Frontiers of Structural and Civil Engineering*, Vol. 9(4), pp. 359–382, **2015**. (SCIE, IF= 2.370) http://dx.doi.org/10.1007/s11709-015-0304-z
74. Sachin Kumar, A.S. Shedbale, **I.V. Singh**, B.K. Mishra, Elasto-Plastic Fatigue Crack Growth Analysis of Plane Problems in the Presence of Flaws Using XFEM, *Frontiers of Structural and Civil Engineering*, Vol. 9(4), pp. 420–440, **2015**. (SCIE, IF= 2.370) http://dx.doi.org/10.1007/s11709-015-0305-y
75. G. Bhardwaj, **I.V. Singh**, B.K. Mishra, Fatigue Crack Growth in Functionally Graded Material using Homogenized XIGA, *Composite Structures*, Vol. 134, pp. 269–284, **2015**. (SCI, IF=6.603) http://dx.doi.org/10.1016/j.compstruct.2015.08.065
76. Himanshu Pathak, Akhilendra Singh, **I.V. Singh**, M. Brahmankar, Three-Dimensional Stochastic Quasi-Static Fatigue Crack Growth Simulations Using Coupled FE-EFG Approach, *Computers & Structures*, Vol. 160, pp. 1–19, **2015**. (SCI, IF= 4.578) http://dx.doi.org/10.1016/j.compstruc.2015.08.002

77. G. Bhardwaj, **I.V. Singh**, Fatigue Crack Growth Analysis of a Homogeneous Plate in the Presence of Multiple Defects using Extended Isogeometric Analysis, *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, Vol. 37(4), pp. 1065–1082, **2015.** (SCIE, IF= 2.220) http://dx.doi.org/10.1007/s40430-014-0232-1
78. Sunkulp Goel, R. Jayaganthan, **I.V. Singh**, D. Srivastava, G.K. Dey, N. Saibaba, Texture Evolution and Ultrafine Grain Formation in Cross-Cryo-Rolled Zircaloy-2, *Acta Metallurgica Sinica*, Vol. 28, pp. 837–846, **2015**. (SCIE, IF= 3.024) http://dx.doi.org/10.1007/s40195-015-0267-z
79. G. Bhardwaj, **I.V. Singh**, B.K. Mishra, T.Q. Bui, Numerical Simulation of Functionally Graded Cracked Plates using NURBS based XIGA under Different Load and Boundary Conditions, *Composite Structures*, Vol. 126, pp. 347–359, **2015**. (SCI, IF= 6.603) http://dx.doi.org/10.1016/j.compstruct.2015.02.066
80. Sunkulp Goel, Nachiket Keskar, R. Jayaganthan, **I.V. Singh**, D. Srivastava, G.K. Dey, S.K. Jha, N. Saibaba, Texture and Mechanical Behavior of Zircaloy-2 Rolled at Different Temperatures, *Journal of Materials Engineering and Performance*, Vol. 24(2), 618–625, **2015**. (SCIE, IF=2.036) http://dx.doi.org/10.1007/s11665-014-1315-y
81. Sunkulp Goel, Nachiket Keskar, R. Jayaganthan, **I.V. Singh**, D. Srivastava, G.K. Dey, N. Saibaba, Development of Ultrafine Grained Zircaloy-2 by Room Temperature Cross Rolling, *Journal of Materials Engineering and Performance*, Vol. 24, 609–617, **2015**. (SCIE, IF=2.036) http://dx.doi.org/10.1007/s11665-014-1287-y
82. S. Kumar, **I.V. Singh,** B.K. Mishra, A Homogenized XFEM Approach to Simulate Fatigue Crack Growth Problems, *Computers & Structures*, Vol. 150, pp. 1–22, **2015**. (SCI, IF=4.578) http://dx.doi.org/10.1016/j.compstruc.2014.12.008
83. G. Bhardwaj, **I.V. Singh,** B.K. Mishra, Stochastic Fatigue Crack Growth Simulation of Interfacial Crack in Bi-layered FGMs using XIGA, *Computer Methods in Applied Mechanics and Engineering*, Vol. 284, pp. 186–229, **2015**. (SCI, IF= 6.756) http://dx.doi.org/10.1016/j.cma.2014.08.015
84. S. Kumar, **I.V. Singh,** B.K. Mishra, Timon Rabczuk, Modeling and Simulation of Kinked Cracks by Virtual Node XFEM, *Computer Methods in Applied Mechanics and Engineering*, Vol. 283, pp. 1425–1466, **2015**. (SCI, IF= 6.756) http://dx.doi.org/10.1016/j.cma.2014.10.019
85. **I.V. Singh**, G. Bhardwaj, B.K. Mishra, A New Criterion for Modeling Multiple Discontinuities Passing through an Element using XIGA, *Journal of Mechanical Science and Technology*, Vol. 29(3), pp. 1141–1143, **2015**. (SCI, IF= 1.734) http://dx.doi.org/10.1007/s12206-015-0225-8
86. S. Kumar, **I.V. Singh,** B.K. Mishra, A Multigrid Coupled (FE-EFG) Approach to Simulate Fatigue Crack Growth in Heterogeneous Materials, *Theoretical and Applied Fracture Mechanics*, Vol. 72, pp. 121–135, **2014**. (SCIE, IF=4.374) http://dx.doi.org/10.1016/j.tafmec.2014.03.005
87. Kamal Sharma, **I.V. Singh**, B.K. Mishra, S.K. Maurya, Numerical Simulation of Semi-Elliptical Axial Crack in Pipe Bend using XFEM, *Journal of Solid Mechanics*, Vol. 6(2), pp. 208–228, **2014**.
88. S. Kumar, **I.V. Singh,** B.K. Mishra, A Coupled Finite Element and Element-Free Galerkin Approach for the Simulation of Stable Crack Growth in Ductile Materials, *Theoretical and Applied Fracture Mechanics*, Vol. 70, pp. 49–58, **2014.** (SCIE, IF=4.374) http://dx.doi.org/10.1016/j.tafmec.2014.02.006
89. H. Pathak, A. Singh, **I.V. Singh**, Fatigue Crack Growth Simulations of Homogeneous and Bi-material Interfacial Cracks using Element Free Galerkin Method, *Applied Mathematical Modelling*, Vol. 38, pp. 3093–3123, **2014.** (SCIE, IF=5.336) http://dx.doi.org/10.1016/j.apm.2013.11.030
90. S. Kumar, **I.V. Singh,** B.K. Mishra, XFEM Simulation of Stable Crack Growth using *J-R* Curve under Finite Strain Plasticity, *International Journal of Mechanics and Materials in Design*, Vol. 10, pp. 165–177, **2014**. (SCI, IF=4.011) http://dx.doi.org/10.1007/s10999-014-9238-1
91. **I.V. Singh**, B.K. Mishra, M. Brahmankar, V. Bhasin, K. Sharma, I.A. Khan, Numerical Simulations of 3-D Cracks Using Coupled EFGM and FEM, *International Journal for Computational Methods in Engineering Science & Mechanics*, Vol. 15, pp. 227–231, **2014**. (IF=0.819) https://doi.org/10.1080/15502287.2014.882438
92. Vineet Kumar, **I.V. Singh,** B.K. Mishra, R. Jayaganthan, Improved Fracture Toughness of Cryorolled and Room Temperature Rolled 6082 Al Alloys, *Acta Metallurgica Sinica*, Vol. 27, pp. 359–367, **2014.** (SCIE, IF=3.024) http://dx.doi.org/10.1007/s40195-014-0057-z
93. A.K. Sahoo, **I.V. Singh**, B. K. Mishra, XFEM for the Evaluation of Elastic Properties of CNT-Based 3-D Full Five Directional Braided Composites, *Advanced Composite Materials*, Vol. 23, pp. 351–373, **2014**. (SCIE, IF= 2.870) http://dx.doi.org/10.1080/09243046.2013.871173
94. S. Bhattacharya**, I.V. Singh,** B.K. Mishra, Fatigue Life Simulation of Functionally Graded Materials under Cyclic Thermal Load Using XFEM, *International Journal of Mechanical Sciences*, Vol. 82, pp. 41-59, **2014**. (SCI, IF=6.772) http://dx.doi.org/10.1016/j.ijmecsci.2014.03.005
95. Sunkulp Goel, Nachiket Keskar, R. Jayaganthan, **I.V. Singh,** D. Srivastava, G.K. Dey, N. Saibaba**,** Mechanical Behaviour and Microstructural Characterizations of Ultrafine grained Zircaloy-2 processed by Cryorolling, *Materials Science and Engineering A*, Vol. 603, pp. 23-29, **2014**. (SCI, IF=6.044) http://dx.doi.org/10.1016/j.msea.2014.02.025

96. Sunkulp Goel, R. Jayaganthan, **I.V. Singh,** D. Srivastava, G.K. Dey, N. Saibaba**,** Mechanical and microstructural characterizations of ultrafine grained Zircaloy-2 produced by room temperature rolling, *Materials & Design***,** Vol. 55, pp. 612-618**, 2014.** (SCI, IF=7.991) http://dx.doi.org/10.1016/j.matdes.2013.09.039
97. H. Pathak, A. Singh, **I.V. Singh**, Fatigue Crack Growth Simulations of 3-D Problems Using XFEM, *International Journal of Mechanical Sciences*, Vol. 76, pp. 112-131, **2013**. (SCI, IF=6.772) http://dx.doi.org/10.1016/j.ijmecsci.2013.09.001
98. Kamal Sharma, **I.V. Singh**, B.K. Mishra and A.S. Shedbale, The Effect of Inhomogeneities on Edge Crack: A Numerical Study using XFEM, *International Journal for Computational Methods in Engineering Science & Mechanics*, Vol. 14(6), pp. 505-523, **2013.** (IF=0.819) https://doi.org/10.1080/15502287.2013.820227
99. S. Bhattacharya**, I.V. Singh,** B.K. Mishra, Mixed-Mode Fatigue Crack Growth Analysis of Functionally Graded materials by XFEM, *International Journal of Fracture*, Vol. 183, pp. 81-97, **2013**. (SCI, IF=2.635) http://dx.doi.org/10.1007/s10704-013-9877-5
100. Ankit Agarwal, **I.V. Singh** and B. K. Mishra, Evaluation of Elastic Properties of Interpenetrating Phase Composites by Meshfree Method, *Journal of Composite Materials*, Vol. 47(11), pp. 1407-1423, **2013**. (SCI, IF= 2.591) http://dx.doi.org/10.1177/0021998312448494
101. S. Bhattacharya**, I.V. Singh,** B.K. Mishra, T.Q. Bui**,** Fatigue Crack Growth Simulations of Interfacial Cracks in Bi-layered FGMs using XFEM, *Computational Mechanics*, Vol. 52(4), pp.799-814, **2013**. (SCI, IF=4.014) http://dx.doi.org/10.1007/s00466-013-0845-8
102. H. Pathak, A. Singh, **I.V. Singh** and S.K. Yadav, A Simple and Efficient XFEM Approach for 3-D Cracks in Linear Elastic Materials, *International Journal of Fracture*, Vol. 181, pp. 189-208, **2013**. (SCI, IF=2.635) http://dx.doi.org/10.1007/s10704-013-9835-2
103. S. Bhattacharya, **I.V. Singh**, B.K. Mishra, Fatigue Life Estimation of Functionally Graded Materials using XFEM*, Engineering With Computers*, Vol. 29(4), pp. 427-448, **2013.** (SCIE, IF=7.963) http://dx.doi.org/10.1007/s00366-012-0261-2
104. Ankit Agarwal, **I.V. Singh**, B.K. Mishra, Numerical Prediction of Elasto-Plastic Behaviour of Interpenetrating Phase Composites By EFGM, *Composites: Part B*, Vol. 51, pp. 327-336, **2013**. (SCI, IF=9.078) http://dx.doi.org/10.1016/j.compositesb.2013.03.022
105. Mohit Pant, **I.V. Singh** and B.K. Mishra, A Novel Enrichment Criterion for Modeling Kinked Cracks using Element Free Galerkin Method, *International Journal of Mechanical Sciences*, Vol. 68, pp. 140-149, **2013**. (SCI, IF=6.772) http://dx.doi.org/10.1016/j.ijmecsci.2013.01.008
106. H. Pathak, A. Singh, **I.V. Singh**, Fatigue Crack Growth Simulations of Bi-material Interfacial Cracks under Thermo-Elastic Loading by Extended Finite Element Method, *European Journal of Computational Mechanics*, Vol. 22(1), pp. 79–104, **2013**. (SCI, IF=0.63) http://dx.doi.org/10.1080/17797179.2013.766017
107. P. Das, **I.V. Singh**, R. Jayaganthan, Crack Growth Simulation of Bulk and Ultrafine Grained 7075 Al Alloy by XFEM, *International Journal of Materials and Product Technology*, Vol. 44(3/4), pp. 252-276, **2012**. (SCI, IF=0.649) http://dx.doi.org/10.1504/IJMPT.2012.050192
108. P. Das, **I.V. Singh**, R. Jayaganthan, An Experimental Evaluation of Material Properties and Fracture Simulation of Cryorolled 7075 Al Alloy, *Journal of Materials Engineering and Performance*, Vol. 21(7), pp. 1167-1181, **2012**. (SCIE, IF=2.036) http://dx.doi.org/10.1007/s11665-011-0062-6
109. H. Pathak, A. Singh, **I.V. Singh**, Numerical Simulation of Bi-material Interfacial Cracks Using EFGM and XFEM**,** *International Journal of Mechanics and Materials in Design*, Vol. 8, pp. 9-36, **2012**. (SCI, IF=4.011) https://doi.org/10.1007/s10999-011-9173-3
110. **I.V. Singh,** B.K. Mishra, S. Bhattacharya and R.U. Patil, The Numerical Simulation of Fatigue Crack Growth Using Extended Finite Element Method, *International Journal of Fatigue*, Vol. 36, pp. 109-119, **2012**. (SCI, IF=5.489) http://dx.doi.org/10.1016/j.ijfatigue.2011.08.010
111. **I.V. Singh,** B.K. Mishra, S. Bhattacharya, XFEM Simulation of Cracks, Holes and Inclusions in Functionally Graded Materials, *International Journal of Mechanics and Materials in Design*, Vol. 7, pp. 199-218, **2011**. (SCI, IF=4.011) http://dx.doi.org/10.1007/s10999-011-9159-1
112. P. Das, R. Jayaganthan, T. Chowdhury, **I.V. Singh,** Fatigue Behaviour and Crack Growth Rate of Cryorolled Al 7075 Alloy, *Materials Science and Engineering A*, Vol. 528, pp. 7124-7132, **2011**. (SCI, IF=6.044) http://dx.doi.org/10.1016/j.msea.2011.05.021
113. P. Das, R. Jayaganthan, T. Chowdhury, **I.V. Singh**, Improvement of Fracture Toughness (K1c) of 7075 Al Alloy by Cryorolling Process, Materials Science Forum, Vol. 683, pp. 81-94, **2011**. (IF=0.553)
114. Mohit Pant, **I.V. Singh**, B.K. Mishra, Evaluation of Mixed Mode Stress Intensity Factors for Interface Cracks using EFGM, *Applied Mathematical Modelling*, Vol. 35, pp. 3443-3459, **2011**. (SCIE, IF=5.336) http://dx.doi.org/10.1016/j.apm.2011.01.010

115. Mohit Pant, **I.V. Singh**, B.K. Mishra, A Numerical Study of Crack Interactions under Thermo-Mechanical Load Using EFGM, *Journal of Mechanical Science and Technology*, Vol. 25(2), pp. 403-413, **2011**. (SCI, IF= 1.734) http://dx.doi.org/10.1007/s12206-010-1217-3
116. P. Das, R. Jayaganthan, **I.V. Singh**, Tensile and Impact-Toughness Behaviour of Cryorolled Al 7075 Alloy, *Materials & Design*, Vol. 32(3), pp. 1298-1305**, 2011.** (SCI, IF=7.991) http://dx.doi.org/10.1016/j.matdes.2010.09.026
117. **I.V. Singh**, B.K. Mishra, Mohit Pant, An Enrichment based New Criterion for the Simulation of Multiple Interacting Cracks using Element Free Galerkin Method, *International Journal of Fracture*, Vol. 167, pp. 157-171, **2011**. (SCI, IF=2.635) https://doi.org/10.1007/s10704-010-9536-z
118. Mohit Pant, **I.V. Singh**, B.K. Mishra, Numerical Simulation of Thermo-Elastic Fracture Problems using Element Free Galerkin Method, *International Journal of Mechanical Sciences*, Vol. 52, pp. 1745-1755, **2010**. (SCI, IF=6.772) https://doi.org/10.1016/j.ijmecsci.2010.09.008
119. Rajesh Sharma, Rama Bhargava, **I.V. Singh**, Combined Effect of Magnetic Field and Heat Absorption on Unsteady Free Convection and Heat Transfer Flow in a Micropolar Fluid Past a Semi-infinite Moving Plate with Viscous Dissipation using Element Free Galerkin Method" Applied Mathematics and Computation, Vol. 217(1), pp. 308–321, **2010.** (SCI, IF=5.329) https://doi.org/10.1016/j.amc.2010.05.062
120. **I.V. Singh**, B.K. Mishra, Mohit Pant, A Modified Intrinsic Enriched EFGM for Multiple Cracks Simulation, *Materials & Design*, Vol. 31, pp. 628–632, **2010.** (SCI, IF=7.991) https://doi.org/10.1016/j.matdes.2009.06.002
121. **I.V. Singh**, Masa. Tanaka, M. Endo, Element Free Galerkin Method for Transient Thermal Analysis of Carbon Nanotube Composites, *Thermal Science*, Vol. 12, pp. 39–48, **2008**. (SCIE, IF=1.625) https://doi.org/10.2298/TSCI0802039S
122. **I.V. Singh**, Masa. Tanaka, M. Endo, Effect of Interface on the Thermal Conductivity of Carbon Nanotube Composites, *International Journal of Thermal Sciences*, Vol. 46 (9), pp. 842–847, **2007**. (SCI, IF=3.744) https://doi.org/10.1016/j.ijthermalsci.2006.11.003
123. **I.V. Singh**, Masa. Tanaka, J. Zhang, M. Endo, Evaluation of Effective Thermal Conductivity of CNT-based Nano-Composites by Meshless EFG Method*, International Journal of Numerical Methods for Heat and Fluid Flow*, Vol. 17 (8), pp. 757–769, **2007**. (IF=4.170) https://doi.org/10.1108/09615530710825756
124. **I.V. Singh**, Masa. Tanaka, M. Endo, Meshless Method for Nonlinear Heat Conduction Analysis of Nano-Composites, *Heat and Mass Transfer*, Vol. 43 (10), pp. 1097–1106, **2007**. (SCI, IF=2.464) https://doi.org/10.1007/s00231-006-0194-7
125. A. Singh, **I.V. Singh**, R. Prakash, Numerical Analysis of Fluid Squeezed Between Two Parallel Plates by Meshless Method, *Computers and Fluids*, Vol. 36 (9), pp.1460–1480, **2007.** (SCI, IF=3.013) https://doi.org/10.1016/j.compfluid.2006.12.005
126. **I.V. Singh**, Masa. Tanaka, M. Endo, Nonlinear Thermal Analysis of Carbon Nanotube Composites by Element Free Galerkin Method, *Numerical Heat Transfer Part A*, Vol. 51 (11), pp. 1087–1102, **2007**. (SCI, IF=2.928) https://doi.org/10.1080/10407780601112852
127. W.T. Ang, **I.V. Singh**, Masa. Tanaka, An Axisymmetric Heat Conduction Model for a Multi-Material Cylindrical System with Application to Analysis of Carbon Nanotube Composites, *International Journal of Engineering Science*, Vol. 45 (1), pp. 22–33, **2007.** (SCI, IF=7.023) https://doi.org/10.1016/j.ijengsci.2006.09.002
128. **I.V. Singh**, Masa. Tanaka, M. Endo, Thermal Analysis of CNT-Based Nano-Composites by Element Free Galerkin Method, *Computational Mechanics*, Vol. 39(6), pp. 719–728, **2007**. (SCI, IF=4.014) https://doi.org/10.1007/s00466-006-0061-x
129. A. Singh, **I.V. Singh**, R. Prakash, Meshless Element Free Galerkin Method for Unsteady Nonlinear Heat Transfer Problems, *International Journal of Heat and Mass Transfer*, Vol. 50(5-6), pp. 1212–1219, **2007.** (SCI, IF=5.584) https://doi.org/10.1016/j.ijheatmasstransfer.2006.08.039
130. **I.V. Singh,** Masa. Tanaka**,** Heat Transfer Analysis of Composite Slabs Using Meshless Element Free Galerkin Method, *Computational Mechanics*, Vol. 36(6), pp. 521–532, **2006**. (SCI, IF=4.014) https://doi.org/10.1007/s00466-005-0001-1
131. **I.V. Singh,** Masa. Tanaka**,** Thermal Solution of Cylindrical Composite Systems Using Meshless Method, *Heat and Mass Transfer*, Vol. 42(8), pp. 689–707, **2006**. (SCI, IF= 2.464) https://doi.org/10.1007/s00231-005-0026-1
132. A. Singh, **I.V. Singh**, R. Prakash, Meshless Analysis of Unsteady-State Heat Transfer in Semi-infinite Solid with Temperature Dependent Thermal Conductivity, *International Communications in Heat and Mass Transfer*, vol. 33(2), pp. 231–239, **2006**. (SCI, IF=5.683) https://doi.org/10.1016/j.icheatmasstransfer.2005.10.008
133. A. Singh, **I.V. Singh**, R. Prakash, The Numerical Solution of Temperature Dependent Thermal Conductivity Problems using Meshless Method, *Numerical Heat Transfer Part A*, Vol. 50(2), pp. 125–145, **2006**. (SCI, IF=2.928) https://doi.org/10.1080/10407780500507111

134. **I.V. Singh**, A Numerical Study of Weight Functions, Scaling and Penalty Parameters for Heat Transfer Applications**,** *Numerical Heat Transfer Part A*, Vol. 47(10), pp. 1025–1053, **2005**. (SCI, IF=2.928) https://doi.org/10.1080/10407780590926183
135. **I.V. Singh**, P.K. Jain**,** Parallel Meshless EFG Solution for Fluid Flow Problems, *Numerical Heat Transfer Part B*, Vol. 48(1), pp. 45–66, **2005**. (SCI, IF=1.586) https://doi.org/10.1080/10407790590935993
136. **I.V. Singh**, P.K. Jain**,** Parallel EFG Algorithm for Heat Transfer Problems, *Advances in Engineering Software*, Vol. 36(8), pp. 554–560, **2005**. (SCI, IF=4.255) https://doi.org/10.1016/j.advengsoft.2005.01.009
137. **I.V. Singh**, K. Sandeep, R. Prakash, The Effect of Weight Function and Scaling Parameter on Meshless EFG Results in Heat Transfer Problems, *International Journal of Heat and Technology*, Vol. 23(1), pp. 13–20, **2005**. (ESCI, IF=1.168) DOI: 10.18280/ijht.230103
138. **I.V. Singh**, A Numerical Solution of Composite Heat Transfer Problems Using Meshless Method, *International Journal of Heat and Mass Transfer*, Vol. 47(10-11), pp. 2123–2138, **2004**. (SCI, IF= 5.584) https://doi.org/10.1016/j.ijheatmasstransfer.2003.12.013
139. **I.V. Singh**, Application of Meshless EFG Method in Fluid Flow Problems, "*Sadhana, Indian Academy of Science*", Vol. 29(3), pp 285–296, **2004**. (IF=1.188) https://doi.org/10.1007/BF02703778
140. **I.V. Singh**, Parallel Implementation of the EFG Method for Heat Transfer and Fluid Flow Problems**,** *Computational Mechanics*, Vol. 34(6), pp. 453–463, **2004**. (SCI, IF=4.014) https://doi.org/10.1007/s00466-004-0590-0
141. **I.V. Singh**, Meshless EFG Method in 3-D Heat Transfer Problems: A Numerical Comparison, Cost and Error analysis, *Numerical Heat Transfer Part A*, Vol. 46(2), pp. 199–220, **2004**. (SCI, IF=2.928) https://doi.org/10.1080/10407780490457437
142. **I.V. Singh**, The Numerical Solution of Viscous Fluid Problems Using Meshless Method**,** *International Journal of Heat and Technology*, Vol. 22(2), pp. 129–138, **2004.** (ESCI, IF=1.168) DOI: 10.18280/ijht.220218
143. **I.V. Singh**, K. Sandeep, R. Prakash, Meshless EFG Method in Transient Heat Conduction Problems, *International Journal of Heat and Technology*, Vol. 21(2), pp. 99–105, **2003**. (ESCI, IF=1.168) DOI: 10.18280/ijht.210212
144. **I.V. Singh**, K. Sandeep, R. Prakash, Heat Transfer Analysis of Two-Dimensional Fins Using Meshless Element-Free Galerkin Method, *Numerical Heat Transfer Part A*, Vol. 44(1), pp.73–84, **2003**. (SCI, IF=2.928) https://doi.org/10.1080/713838174
145. **I.V. Singh**, R. Prakash, The Numerical Solution of Three-Dimensional Transient Heat Conduction Problems Using Element Free Galerkin Method, *International Journal of Heat and Technology*, Vol. 21(2), pp. 73–80, **2003**. (ESCI, IF=1.168). DOI: 10.18280/ijht.210209