

## **Profile Page**



Name : Dr Raman Bedi

Designation : Professor

Department : Mechanical Engineering

Qualification : PhD Mechanical Engineering (NIT Jalandhar)  
MTech Material Science & Technology (NIT Jalandhar)  
BTech (Gold Medalist) Mechanical Engineering (NIT Jalandhar)

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### **Research Interests :**

Fatigue of Composite Materials, Creep of Weldments, EBSD Analysis for structure property correlation, Polymer based concrete materials, Artificial Intelligence like Fuzzy and Neuro Fuzzy Inference Systems

### **Other Profile Links :**

#### **Google Scholar Link :**

<https://scholar.google.co.in/citations?user=7D4ts0YAAAAJ&hl=en> [Click Here](#)[Dr Raman Bedi](#) [Click Here](#)

#### **Personal Web Link :**

Research Gate link [Click Here](#)

Scopus ID-9536965900 [Click Here](#)

ORCID ID [Click Here](#)

### **Journal Publications :**

Year	Journal	Publication
2023	Physica Scripta	"Investigation of mechanical properties of microwave welded SS304-SS202 lap joints
2023	Physica Scripta	Fatigue life analysis and damage evaluation in Glass Fiber Reinforced Composite materials based on recycled polyethylene terephthalat
2023	Composite Communications	Effect of graphene nanoplatelets on fatigue performance of Glass Fiber Reinforced Composite materials based on recycled polyethylene terephthalate
2022	Physica Scripta	"Comparative performance of various susceptor materials and vertical cavity shapes for selective microwave hybrid heating (SMHH)"
2022	Materials Today Proceedings	A Comparative study of interface material through selective microwave hybrid heating for joining metal plates
2022	Physica Scripta	Finite element model updating of microwave welded lap joint with direct updating algorithm

2022	Material Science and Engineering Technology	Boron addition to P91 steel: Preliminary investigation on microstructural evolution and microhardness at simulated heat-affected zone
2022	IOP Conference Series: Materials Science and Engineering	Finite Element Analysis of Impression Creep on P91
2022	IOP Conference Series: Materials Science and Engineering	An initial study on the impression creep behaviour of stir-cast GNP reinforced AA6061 composite (AMMC)
2022	Journal of Manufacturing Processes	Microstructural and mechanical properties of circumferentially joined mild steel pipes using selective microwave hybrid heating
2022	Materials Today Proceedings	Influence of process parameters on microwave joining of the similar/dissimilar materials: A review
2021	The Journal of Strain Analysis for Engineering Design	A novel Approach to Envisage Effects of Boron in P91 Steels through Gleeble Weld-HAZ Simulation and Impression-Creep
2021	Materials Today Proceedings	Tensile properties of Urea treated Rice straw reinforced recycled Polyethylene terephthalate composite materials
2021	Composites -Part B Engineering	Composite Materials based on recycled Polyethylene terephthalate and their properties - A Comprehensive Review
2021	Materials Research Express	Predicting the effect of fiber orientations and boundary conditions on the optimal placement of PZT sensor on the composite structures
2021	Journal of Manufacturing Processes	Evaluation of modal characteristics of S202-SS202 lap joint produced using selective microwave hybrid heating
2020	Composites: Mechanics, Computations, Applications, An International Journal	Prediction of Mechanical Properties of Epoxy Concrete Using Molecular Dynamics Simulation
2020	Materials Today Proceedings	Microwave Joining of similar/dissimilar metals and its characterization : A Review
2020	Materials Research Express	Effects of boron modifications on phase nucleation and dissolution temperatures and mechanical properties in 9%Cr steels: alloy design
2020	Materials Science and Technology	Microstructural investigations on simulated intercritical heat-affected zone of boron modified P91-steel
2020	Materials Today Proceedings	Mechanical properties of composite materials based on waste plastic- A review
2020	Materials Today Proceedings	The casting of materials using microwave energy: A review
2020	International Journal of Pressure Vessels and Piping	Influence of boron on microstructure and mechanical properties of Gleeble simulated heat-affected zone in P91 steel
2020	Materials Today Proceedings	Experimental study to measure the sound transmission loss of natural fibers at tonal excitations
2019	Journal of Structural Engineering	FLEXURAL FATIGUE ANALYSIS OF PLAIN AND GLASS FIBRE REINFORCED POLYMER CONCRETE COMPOSITES
2019	Materials Today Proceedings	An Experimental Study to Predict the Exposure Time for Microwave based Joining of Different Grades of Stainless Steel Material
2019	International Journal of Materials and Structural Integrity	Flexural Fatigue Analysis of Fibre Reinforced Polymer Concrete Composites under Non-Reversed Loading
2019	World Journal of Engineering	INFLUENCE OF CERAMIC Al <sub>2</sub> O <sub>3</sub> PARTICULATES ON PERFORMANCE MEASURES AND SURFACE CHARACTERISTICS DURING SINKER EDM OF STIR CAST AMMCs
2019	Journal of Materials Engineering and Performance	Effect of boron addition on creep strain during impression creep of P91 steel
2018	Applied NanoScience	Phase transformations and numerical modelling in simulated HAZ of nanostructured P91B steel for high temperature applications
2018	International Journal of Modern Manufacturing Technologies	IMPRESSION CREEP STUDIES ON SIMULATED REHEATED HAZ OF P91 AND P91B STEELS
2018	IJAETMAS, Vol-5, No-1, 2018, pp.52-57	Fatigue Behavior of short carbon fibre reinforced polymer matrix composites- Review

2018	Journal of Structural Engineering	Reviewing some properties of self compacting concrete with particular reference to flexural fatigue performance
2017	International Journal of Machining and Machinability of Materials	EDM machinability and parametric optimization of 2014Al/Al <sub>2</sub> O <sub>3</sub> composite by RSM
2016	in International Journal of Experimental Design and Process optimization	Adaptive Neuro Fuzzy Inference System in modeling/detecting cracks and porosity using Liquid Penetrant Test
2015	International Journal of Materials Engineering Innovation, 6(1), 42-48	Damping Studies on fiber reinforced Epoxy Polymer Concrete using Taguchi Design of Experiments
2014	Indian Concrete Journal, Vol. 88, No. (8), 47-68	Reviewing some properties of polymer concrete
2014	Journal of Advances in Vibration Engineering, Vol 2, No. 1, pp.47-52	Damping Studies on Polyester Polymer Concrete
2014	ISRN Materials Science, Volume 2014, Article ID 928278	Flexural Fatigue Life Assessment and Strength Prediction of Glass Fibre Reinforced Polymer Concrete Composites
2014	Journal of Materials and Engineering Structures, Vol. 1, No. (2), 99-109	Design Fatigue Lives of Polypropylene Fibre Reinforced Polymer Concrete Composites
2013	International Journal of Materials Engineering Innovation, Vol 4 (1), 18-34	Adaptive neuro-fuzzy inference system in modelling damping performance of epoxy polymer concrete
2013	Journal of Composites, Volume 2013, Article ID 948745	Mechanical properties of polymer concrete- A Review
2013	Journal of Experimental and Applied Mechanics, Vol. 4, No. (3), 22-28	Probabilistic Analysis of Fatigue Life of Polymer Concrete
2013	Journal of Research Updates in Polymer Science, 2(4), 201-08	Mechanical characterization of epoxy polymer concrete containing fly ash
2011	Occupational Safety Asia, December 2011, 34-39	Industrial Noise Exposure- A realistic bid to prevent noise induced hearing loss
2010	Journal of Scientific & Industrial Research, Vol 69, 204-207	Study of hygrothermal ageing on properties of polyester/glass composites
2009	Composites Science & Technology, Volume 69/9, 1381-87	Fatigue-life distributions and failure probability for glass-fiber reinforced polymeric composites
2009	Industrial Health, Volume 47 ,423-430	Occupational noise exposure in small scale hand tools manufacturing (forging) industry (SSI) in Northern India
2008	Computational Materials Science, Volume 43, 1086-93	Adaptive neuro-fuzzy inference system in modelling fatigue life of multidirectional composite laminates
2006	Industrial Health, Volume 44, 112-116	Evaluation of occupational environment in two textile plants in northern India with specific reference to noise
2005	Journal of The Institution of Engineers, India Volume-85, 169-178	A simplified optimum design of axial flow compressor stage

### Conference Publications :

Year	Conference	Publication
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2020	IVCSAMSEA-2020	Boron addition to P91 steel: Preliminary investigation on microstructural evolution and microhardness at simulated heat affected zone
2020	10th International Conference of Materials Processing and Characterization (ICMPC), GLA Univ, Mathura, INDIA, FEB 21-23, 2020	Mechanical properties of composite materials based on waste plastic - A review
2020	10th International Conference of Materials Processing and Characterization (ICMPC), GLA Univ, Mathura, INDIA, FEB 21-23, 2020	Microwave Joining of similar/dissimilar metals and its characterization : A Review
2020	10th International Conference of Materials Processing and Characterization (ICMPC), GLA Univ, Mathura, INDIA, FEB 21-23, 2020	The casting of materials using microwave energy: A review
2020	ICAMSE2020 (International Conference on Aspects of Materials Science and Engineering) held at Panjab University during 29th – 30th May 2020	Experimental study to measure the sound transmission loss of natural fibers at tonal excitations
2019	CPIE-2019	EFFECT OF RE-NORMALISING AND RE-TEMPERING ON INTER-CRITICAL HEAT AFFECTED ZONE(S) OF P91B STEEL
2019	ICMSE-2019	Effect of boron on evolution of nano precipitates in singular HAZ of modified P91 (9Cr-1Mo-NbV) steel
2019	ICMSE-2019	Experimental Study to Measure the Equivalent Continuous A-Weighted Sound Pressure Level of Hemp Material for Train Noise
2019	ICETT-2019 NIT Jalandhar	Experimental Study to Measure the Equivalent Continuous A-Weighted Sound Pressure Level of Natural Fiber-Air-Natural Fiber Materials at Broadband Excitations
2019	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019)-IIT Mandi	FEM ANALYSIS OF STATIC AND LOW CYCLE FATIGUE OF CARBON/EPOXY LAMINATES DOUBLE CANTILEVER BEAM (DCB)
2019	International Conference on Materials and Manufacturing Methods, NIT Trichy	An Experimental study to predict the posure time for microwave based joining of differenet grades of stainless steel material
2019	UKIERI Concrete Congress-2019	Effect of silane treatment on the mechanical properties of polymer concrete made with recycled PET resin and recycled aggregates
2019	UKIERI Concrete Congress-2019	Mechanical properties of polymer concrete made with natural and recycled aggregates using recycled PET resin
2019	UKIERI Concrete Congress-2019	Recent developments in FRC technology for enhanced impact resistance properties: Innovations & Opportunities
2018	19th ISME Conference- Advances in Mechanical Engineering	Natural Fiber composites for sound reduction- A short review
2018	19th ISME Conference- Advances in Mechanical Engineering	EBSD ANALYSIS OF SIMULATED INTER-CRITICAL HEAT AFFECTED ZONE OF BORON MODIFIED P91 STEEL
2018	National Conference on Advanced Materials, Manufacturing And Metrology	Effect of boron modified microstructure on impression creep behaviour of simulated multi-pass heat affected zone of P91 steel
2018	CPIE-2018, Bangkok	Investigation of impression creep deformation behaviour of boron modified P91 steel by high end characterization techniques

2017	International Congress 2017 of the International Institute of Welding, Chennai	METALLURGICAL INVESTIGATIONS ON DUAL HEAT CYCLED BORON ALLOYED P91 FERRITIC/ MARTENSITIC STEEL
2016	9th International Concrete Conference, 4-6 July 2016, Dundee, Scotland	Flexural Fatigue of Plain and Glass Fibre Reinforced Polymer Concrete Composites
2013	ISOM-2013, 26-28 June 2013, Reduit, Mauritius	Fiber Reinforced Polymer Concrete- An Alternative Material for Machine Construction
2012	International Symposium of Advanced Polymeric Materials, 7-12 July 2012, Kuala Lumpur, Malaysia	Studies on Mechanical Characteristics of Epoxy Polymer Concrete containing Fly Ash
2010	2nd International Conference on Polymer Processing & Characterization, January 15-17, 2010, Kottayam, India	Studies on effect of constituents on the damping performance of Epoxy Polymer Concrete
2010	VETOMAC-VI, 13-15 December, 2010, IIT Delhi	Damping Studies on Polyester Polymer Concrete
2010	16th ISME Conference, 02-05 December, 2010, IIT Delhi	Studies on Mechanical Behavior of Epoxy Concrete
2009	24th Indian Engineering Congress. 10-13 December 2009, NIT Surathkal	Parametric Evaluation of Damping of Polyester Concrete using Taguchi Design of Experiments
2008	ECCM-13, 2nd -5th June 2008, Stockholm, Sweden	Modelling Fatigue Life of Composite Laminates with ANFIS
2007	ECCOMAS Thematic Conference on Mechanical Response of Composites, COMPOSITES-2007, Porto, Portugal	Fatigue Life determination of Pultruded Glass Fiber Reinforced Composites
2006	Fourteenth NASAS National Seminar on Aerospace Structures, January 30-31, 2006, Dept. of Metallurgical and Materials Engg., VNIT, Nagpur	Probabilistic Fatigue Life Analysis of Glass Fiber Reinforced Composites using Weibull Distribution
(June 8-10, 2004)	7th International Symposium TRANSPORT NOISE AND VIBRATIONS, St. Petersburg, Russia, Paper No- S3-8	Effect of impact noise on humans- A case study for drop forge hammers

### Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISS N No.	Year
Book Chapter	Effect of Re-normalizing and Re-tempering on Inter-critical Heat Affected Zone(S) of P91B Steel	Springer	Modassir Akhtar, Akhil Khajuria, and Raman Bedi	ISBN 978-981-15-4618-1	2020
	Proceedings of UKIERI Concrete Congress- 2019	UKIERI India	R K Dhir, S P Singh, Raman Bedi, Sanjay Goel	9789353512620	2019
Book Chapter	INVESTIGATION OF IMPRESSION CREEP DEFORMATION BEHAVIOUR OF BORON MODIFIED P91 STEEL BY HIGH END CHARACTERIZATION TECHNIQUES	Springer	Raman Bedi, Akhil Khajuria		2018
Proceedings	Proceedings of UKIERI Concrete Congress- 2015	Excel India Publishers	Ravindra K Dhir, S P Singh, Raman Bedi, Sanjay Goel	9789384869823	2015

Proceedings	Proceedings of CPIE-2007		Arvind Bhardwaj, Ajay Gupta, Raman Bedi, Vishal S Sharma		2007
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### Events Organized :

Category	Type	Title	Venue	From	To	Designation
STC	National	Low Cost Hi-Tech Automation	NIT Jalandhar	5-6-2006	9-6-2006	Coordinator
Conference	International	CPIE-2007, Global Conference on Production & Industrial Engineering	NIT Jalandhar	22-3-2007	24-3-2007	Co-Convenor
STC	National	Perspective of Welding Technology	NIT Jalandhar	28-12-2009	2-1-2010	Co-Coordinator
STC	National	Welding- Roadmap to Excellence	NIT Jalandhar	27.12.2010	31.12.2010	Co-Coordinator
Conference	International	UKIERI Concrete Congress- 2013	NIT Jalandhar	5.3.2013	8.3.2013	Member-Organising Committee
Conference	International	UKIERI Concrete Congress- 2015	NIT Jalandhar	2-11-2015	5-11-2015	Member-Organising Committee
STC	National	Recent Advances in Concrete Composites	NIT Jalandhar	16-12-2013	20-12-2013	Coordinator
STC	National	Recent Trends in Materials Research	NIT, Jalandhar	15-12-2017	19-12-201	Coordinator
STC	National	Advances in Concrete Composites	NIT Jalandhar	22-12-2017	26-12-2017	Coordinator
Workshop	National	Technical Workshop on Scientific Paper Writing	NIT, Jalandhar	29.5.2018	29.5.2018	Coordinator
Workshop	National	Curriculum Review Workshop	NIT Jalandhar	14.7.2018	14.7.2018	Coordinator
Faculty Development Program	National	Pedagogical Skills for Teachers	NIT Jalandhar	22.7.18	23.7.18	Coordinator
Conference	National	19th ISME Conference	NIT Jalandhar	20-12-2018	22-12-2018	Joint Secretary
Conference	National	UKIERI CONCRETE CONGRESS	NIT Jalandhar	5.3.2019	8.3.2019	Secretary
STC	National	Material Characterization Techniques	NIT Jalandhar	17-06-2019	21-06-2019	Coordinator
GIAN Program	International	Fatigue of Composite Materials	NIT Jaalandhar	11-11-2019	15-11-2019	Coordinator
Expert Lecture	National	Expert Lecture on "XRD Data Analysis using HighScore"	NITJ	28-02-2020	28-02-2020	
STC	National	Material Characterization Techniques	NIT Jalandhar	24-8-2020	28-8-2020	Convenor

STC	National	Advanced Techniques of Material Characterization for Research	NIT Jalandhar	25-10-2021	29-10-2021	Convenor
Workshop	National	Hands on Workshop on Field Emission-Scanning Electron Microscopy with EDS and EBSD Analysis (Hybrid mode)	NITJ	25-05-22	27-05-22	Convenor
STC	National	DST Sponsored Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI)	NIT Jalandhar	19-09-2022	25-09-2022	Coordinator
STC	National	5-Days Hands on Workshop and Training on Triple-Quad ICP-MS, FESEM, EDS and EBSD Analysis	NIT Jalandhar	12-09-2022	16-09-2022	Convenor
STC	National	DST Sponsored Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI)	NIT Jalandhar	6-2-23	12-2-23	Convenor

### Professional Affiliations :

Designation	Organization
Member (2006-08)	European Society of Composite Materials
Member (2008-10)	European Society of Composite Materials
Fellow	Institution of Engineers, India
Member	Materials Research Society (USA)
Member	Indian Society of Mechanical Engineering
Member (2022- till date)	European Society of Composite Materials

### PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Akhil Khajuria (PhD)	Effect of boron modification on microstructure in HAZ of P91 steel for better resistance to type IV cracking	Ongoing	2015	Dr Rajneesh Kumar
Pankaj Sadaa (PhD)	Fatigue Studies on Hybrid Composites	Ongoing	2014	Dr Pramod Kumar

### Admin. Responsibilities :

Position Held	Organization	From	To
Deputy Registrar (Academics)-Additional Charge	NIT Jalandhar	March 2012	July 2013
Associate Dean (Academic-UG)	NIT Jalandhar	30.1.2015	8.2.2018

PI (Examination)	NIT Jalandhar	9.2.2018	24.1.2019
Associate Dean (Academic-PG)	NIT Jalandhar	9.2.2018	24.1.2019
Associate Dean -Faculty Welfare	NIT Jalandhar	24.01.2019	06.01.2020
Head- Institute Instrumentation Center	NIT Jalandhar	16.01.2020	Till Date

### Award and Honours :

<b>Title</b>	<b>Activity</b>	<b>Given by</b>	<b>Year</b>
Best Teacher Award		NIT Jalandhar	2019
University Gold Medal	BTech	GNDU, Amritsar	1996