RESUME

PERSONAL DETAILS		
Name	:	Dr. Achchhe Lal (Assistant Professor)
Corresponding Address	:	Department of Mechanical Engineering, S. V. National Institute of Technology, Surat-395007, India
Phone	:	+91-9824442503
E-mail	:	achchhelal@med.svnit.ac.in, lalachchhe@yahoo.co.in
Date of Birth	:	July 13, 1975

QUALIFICATION

Degree	University	Year	Department and Supervisors
B. Tech	H. B. Technological Institute (An Academic Autonomous Institution), Kanpur, India	2000	Mechanical Engineering
M.E	M. N. National Institute of Technology, Allahabad, India	2002 (Through Gate Score)	Department of Applied Mechanics Supervisor: Supervisor: Dr. K.M. Gupta Professor, Department of Applied Mechanics, MNNIT, Allahabad.
Ph.D	M. N. National Institute of Technology, Allahabad, India	2007 (Full Time Research Scholar)	Department of Applied Mechanics Supervisor: Dr. B. N. Singh, Professor &Dean HR, Department of Aerospace Engineering, IIT Kharagpur Supervisor: Dr. Rakesh Kumar Professor, Department of Civil Engineering, MNNIT, Allahabad.
Post Doctorate	Virginia Polytechnic Institute and State University	2013 (Indo-US Research Fellowship)	Department of Aerospace and ocean Engineering Supervisor: Prof. Rakesh K. Kapania, Virginia Polytechnic Institute and State University 215, Randolph Hall Blacksburg, VA 24061 (Virginia Tech)

Indo-US Research Fellowship (IUSSTF Fellowship/2012/14-Achchhe Lal & 22/05/2012)
Total Grant : INR 20,96,000/-

EXPERIENCE

University/College	Designation	Period
S. V. National Institute of Technology, Surat, Gujarat, India.	Assistant Professor (AGP 7000)	August 01, 2010 to till date.
S. V. National Institute of Technology, Surat, Gujarat, India.	Assistant Professor (AGP 6000)	August 09, 2007 to July 31, 2010.
KNMIIET, Modinagar, India	Senior Lecturer	Jan 20, 2007 to July 23, 2007.

RESEARCH PROJECT HANDLED

Funding Agency	Project Cost	Title of Project
DST **(Young Scientist)** New Delhi, India.	Rs. 4.50 Lakhs	Stochastic Hygrothermal Buckling response of Piezoelectric Laminated Composite Plates (Completed and Submitted) Project Duration: 23-08-2010 to 18-08-2012
Directorate of Extramural Research & Intellectual Property Rights (ER&PR) Defense Research & Development Organization **(DRDO)**, India.	Rs. 26.315 Lakhs	Probabilistic Fracture response of Laminated Panels Comprising Functionally Graded Materials with Cutouts (Completed and Submitted) Project Duration: 17-02-2015 to 30-07-2018
Grants-in-aid scheme of **Aeronautics R&D Board, DRDO**, India.	Rs. 8.16 Lakhs	Stochastic progressive failure response of piezoelectric laminated composite shell panels with cutouts (Completed and Submitted) Project Duration: 05-11-2015 to 26-03-2019
Micro research project through TEQIP Twining Activity, SVNIT, Surat	Rs. 2.00 Lakhs	Mechanical characterization of CFRP composites. (Completed and Submitted) Project Duration: 2019 to 2020
Science and Engineering Research Board **(SERB)**, India.	Rs. 18.51 Lakhs	Development, characterization and performance evaluation of multi-phase composite panels(Ongoing) Project Duration: 2022 to 2025

LEADERSHIP EXPERIENCE

As Teaching Fellow

- Teaching Material science and engineering, Theory of elasticity, Design of Pressure Vessel, Finite Element Method (FEM) at Undergraduate and Postgraduate level courses ranging in size from 20-250 students.
- Prepared course material including laboratory experiments, lectures, exams, homework, and practice problems
- Led weekly laboratory and/or problem-solving and discussion sections for groups of 13-30 students
- Supervised students in final projects, graded exams and weekly homework

As Research Supervisor

- Till now, **12** students successfully completed their PhD under my guidance and PhD of **05** students are in progress
- There are **22** MTech students successfully completed their projects under my guidance, and number of UG students too.

Ph.D. Thesis

Sr. No.	Admission No	Name of Student	Title of Thesis/Area of Research	Category (FIR /PES /FRS /FSF etc.)	Role (Supervisor/ Co-supervisor)	Name of all other supervisor(s), if any	Status: Ongoing/ Submitted / Awarded
1	DS16ME003	Rahul Kumar	Structural behaviour of functionally graded plate using RBF based meshfree method.	FIR	Supervisor,	Dr. B.N. Singh (IIT Kharagpur)	Awarded
2	DS15ME007	Manoj B. Vaghela	XFEM fracture analysis of composite structure with various discontinuties	PES	Supervisor		Awarded
3	DS13ME003	Mr. Khubi Lal Khatri	Stochastic XFEM based fracture behaviour and crack growth analysis of isotropic cracked plate with holes under various inplane loadings.	FIR	Supervisor		Awarded
4		Mr. Swanand G Kulkarni	Processing, characterization and modeling of alumina, fly ash and hybrid reinforced A356 alloy matrix composites	PES	Co-Supervisor	Dr. Jyoti Maghani	Awarded
5	DS11ME007	Mr. Shailesh P. Palekar	Probabilistic fracture modelling and analysis of laminated composite panels by XFEM	PES	Supervisor		Awarded

6	DS11ME006	Mr. Appaso M. Gadade	Stochastic failure analysis of laminated composite plate subjected to different loading conditions	PES	Supervisor	Dr. B.N. Singh (IIT Kharagpur)	Awarded
7	DS11ME001	Mr. Amit K. Srivastava	Determination of fracture parameters and crack growth direction for multiple edge cracks of a finite plate.	PES	Supervisor		Awarded
8	D11ME008	Mr. Niranjan L. Shegokar	Stochastic static and dynamic nonlinear analysis of surface bounded piezoelectric functionally graded beam subjected to thermo-electro-mechanical loadings.	FIR	Supervisor		Awarded
9	D10ME003	Mr. Kirankumar R. Jagtap	Uncertainty quantification of elastically supported functionally graded material plate in thermal environment.	PES	Supervisor	Dr. B.N. Singh (IIT Kharagpur)	Awarded
10	D08AM202	Mr. Rajesh Kumar	Some studies on stochastic response of hygrothermally induced elastically supported laminated composite plates with random system properties	PES	Co-Supervisor	Dr. H. S. Patil	Awarded
11	DS14ME011	Ashok Baban Magar	Analysis of symmetric infinite laminated composite plate with elliptical cutout under different inplane loading in hygrothermal environment.	PES	Supervisor		Awarded
12	D18ME003	Kanif Markad	Some static and dynamic nonlinear analysis of CNT reinforced sandwich smart composite panels.	FIR	Supervisor		Awarded
13	DS16ME005	Nand Jee Kanu	Post buckling response of CNT/nano clay reinforced carbon fibres polymers hybrid nano composite plate under inplane buckling loads using the higher order shear deformation theory.	PES	Supervisor		On-going
14	DS18ME006	Kundan Mishra	Fracture analysis of heterogeneous materials through XFEM	FIR	Supervisor	Dr. B. M Sutaria	On-going
15	DS18ME003	Rahul Kumar	Analysis of laminated sandwich panels with various discontinuities.	FIR	Co-Supervisor	Dr. B. M Sutaria	On-going
16	DS19ME014	Anil Kumar Mahto	Probabilistic analysis of laminated composite plate embedded with SMA fibers under thermal exposure	PIS	Supervisor	Dr. Anant Parghi	On-going

17	D20ME009	Nikhil Kulkarni	Damage and Fracture Analysis of Discontinuous Piezo-Laminated Composite Structures Using Isogeometric Analysis	PES	Supervisor		On-going

MTech. Dissertation

Sr. No.	Title of the Project Dissertation	Name of the Student(s)	Registration No.	Role (Supervisor/Co-supervisor	Name of other supervisor/co-supervisor, if any
1	Nonlinear free vibration analysis of piezo laminated composite conical shell panel subjected to thermoelectro mechanical loading with random material properties	Mr. Paras M. Choksi	P09CC053	Supervisor	
2	Stability and failure analysis of laminated composite beam under compressive loading	Shashidhar More	P08CC065	supervisor	Dr. Amit Kumar Onkar
3	Life prediction of laminated composite plates subjected to biaxial fatigue loading using probabilistic FEM approach	Rathod Jigar kumar Shivlal	P14ME019	Supervisor	
4	Stochastic nonlinear bending analysis of laminated composite cylindrical shell panel with random system properties by using finite element method	Chaudhary Nilesh Suresh	P14CC013	Supervisor	
5	Stochastic nonlinear failure analysis of laminate composite plates under compressive loading	Patel Dipan H	P09IP728	Supervisor	Nikunj Patel
6	Stochastic post buckling analysis of laminated composite panels subjected to hygrothermomechani cal loading	Shushil I Kale	P08CC067	Supervisor	

7	Design and analysis of deployment control mechanism for inflatable space structure	Sagar Dilip Rao Deshmukh	P13ME007	Supervisor	Kripa shanker singh
8	Nonlinear analysis of nanotube reinforced composite beams resting on elastic foundation in thermal environments with random system properties.	Virendra Kumar chaudhary	P12ME019	Supervisor	
9	Stochastic fracture response of functionally graded plates under thermomechanical loadings	Santosh Kumar Venu	P10TD170	Supervisor	
10	Modeling and simulation of hydraulics excavator for regenerative energy breaking	Sagar M. Pohekar	P13CC007	Supervisor	Atuul Chandra Tripathi
11	Innovative shape of transmission line tower	Divya M. Patel		Co-supervisor	H.S Patil
12	Life prediction of laminated composite plates subjected to uniaxial fatigue loading using probabilistic FEM approach	Shetul Kumar Dineshbhai Parmar	P13ME018	Supervisor	
13	Effect of weld orientation and location on the forming limit strain of IF based TWBs	Dilip M. Sutaria	P09CC054	Co-Supervisor	K Narasimhan
14	Thermal post-buckling response of laminated composite plates subjected to uniform and nonuniform temperature distribution with random material properties	Nitin Z Patel	P09IP718	Supervisor	
15	Stochastic fracture and crack growth analysis of edge cracked laminated composite beams	Swapnil Mahadeo Bhagat	P13ME016	Supervisor	

	using extended finite element method				
16	Stochastic mechanical and thermal post-buckling response of functionally graded material plates with circular and square holes having material randomness	Huiren Neeranjan Singh	P08TD159	Supervisor	Dr. P. V Bhalle
17	Failure analysis transfer chute and laminated composite plate	Harshal Zate	M.Tech	Supervisor	Prof. A.B. Makwana
18	Fracture analysis of Isotropic and composite plate with edge Crack	R Rama Srikar Patnaik	M.Tech	Supervisor	Prof. Anil Kumar Mahto
19	Fracture analysis of FGM by XFEM and Development of 21T excavator powered by 6-LiterEngine	Shrikant B. Bale	M.Tech	Supervisor	Prof. A.B. Makwana
20	Nonlinear free and forced vibration analysis of automobile structure with various discontinuities using FEM	Naikwadi Amit Ashok	M.Tech	Co-Supervisor	Prof. Anil Kumar Mahto
21	Analysis of vibration in laminated composite plate and HMO of the continuous caster	Vhinas S. More	M.Tech	Co-supervisor	Dr. B.M. Sutaria
22	Linear and non-linear bending, buckling and free vibration analysis of laminated sandwich Plate	Jayesh Ravindra Nikam	M.Tech	Co-supervisor	Dr. B.M. Sutaria

As Event Coordinator

- Convener of Finite Element Method for Engineering Applications (TEQIP-II) in SVNIT, Surat, 2015-16.
- Convener of Advance in Numerical Methods for Engineering Applications (TEQIP-II) in SVNIT, Surat, 2016.

- Convener of Advance in Material Science and Engineering (TEQIP-II) in SVNIT, Surat, 2016.

- Convener of Advances in Theoretical, Applied, Computational and Experimental Mechanics (TEQIP-II) in SVNIT, Surat, 2016.

- Convener of Design, Modeling and Simulation of advanced composite structures using FEM software's (MATLAB, ABAQUS and ANSYS) (TEQIP-III STTP) in SVNIT, Surat, 2019.

DEPARTMENTAL ACTIVITY EXPERIENCES

- Coordinator Stock verification, write off items
- Coordinator, for all matter's related to PG/UG/Seminar/project /dissertation/preliminary/exam and Departmental examination
- Lab in charge, Reverse engineering lab separated from CAD LAB
- Departmental exam coordinator
- Student funding for Conference/Workshop/STTP (Member-Institute Level)

BOOK PUBLISHED

Sr. No.	Name of Book and Publisher
1	Lal A., Chaudhari V.K., Thermo-mechanically induced nonlinear analysis of CNT composite beam, Lambert Academic publishing, 978-613-6-66292-3, 2018

INVITED LECTURES / RESOURSE PERSON

Sr. No.	International/ National/ State	Title of Lecture	Name of Seminars / Conferences	Name and Place of Institute
1	VJTI Mumbai	Nanotechnology Advances in Engineering Materials and Manufacturing	AICTE's ATAL FDP on Nanotechnology Advances in Engineering Materials and Manufacturing held on 21-25 June 2021.	VJTI Mumbai India.
2	MMMUT, Gorakhpur	Some Static and Dynamic Nonlinear Analysis of CNT Reinforced Sandwich Smart Composite Panels	Keynote speaker in TEQIP Twining program Oct. 2019	MMMUT, Gorakhpur

3	International (Within Country)	Modeling and Analysis of Engineering Structures.	International conference on engineering and technology: Smart engineering (PICET) 16/02/2018	Parul institute of engineering and technology, Vadodara, Gujarat
4	State / University	Applications of functionally graded materials	Advancements in mechanical engineering - An interdisciplinary approach. 24/01/2017	Dr. D. Y. Patil school of engineering and technology, Pune, Maharashtra
5	State / University	Modelling of composite material	Advanced finite element methods: Theory and application with ANSYS and MATLAB. 15/03/2012	Sinhgad institute of technology and science

CONTRIBUTION AS REVIEWER OF JOURNAL

Working as a reviewer for some of the renowned international journals.

Sr. No.	Name of Journal
1	International Journal of Applied Mechanics
2	Journal of Applied and Computational Mechanics
3	Mechanics of Advanced Composite Structures
4	Mechanics of Advanced Materials and Structures
5	Aerospace science and technology

JOURNAL PUBLICATIONS

[1] K Rahul, Lal Achchhe, Sutaria B.M, "Static and dynamic response analysis of corrugated core sandwich plates under patch loading", Mechanics Based Design of Structures and Machines, doi.org/10.1080/15397734.2022.2061510.

[2] Kundan Mishra, Achchhe Lal, B.M Sutaria, "Numerical analysis of Bi-material plate of various material distributions with crack and other discontinuities under thermo-mechanical loadings using XFEM" International journal of steel structures, (2022), 22: 708–729.

[3] Kundan Mishra, Achchhe Lal, B.M Sutaria, "XFEM based thermo-elastic numerical analysis of FGMs with various discontinuities" Mechanics Based Design of Structures and Machines, (2022), https://doi.org/10.1080/15397734.2022.2082469.

[4] Kanif Markad & Achchhe Lal (2022) Synthesis of the multiphase shape memory hybrid composites hybridized with functionalized MWCNT to improve mechanical and interfacial properties, Polymer-Plastics Technology and Materials, 61:6, 650-664, DOI: 10.1080/25740881.2021.2006709.

[5] Kanif Markad & Achchhe Lal (2022) Deflection and stress analysis of piezoelectric laminated composite plate under variable polynomial transverse loading, AIP Publishing LLC, 61:6, 650-664, DOI: https://doi.org/10.1063/5.0104568.

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[15] Magar A, Lal A. (2021) Progressive failure analysis of laminated plate containing elliptical cutout, A Lal - International Journal of Structural Integrity, 2021. doi.org/10.1108/IJSI-10-2020-0092.

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[52] Lal A., Kulkarni N. M., Siddaramaiah V. H. (2016) Stochastic hygro-thermo-mechanically induced nonlinear static analysis of piezoelectric elastically support sandwich plate using secant function based shear deformation theory (SFSDT), International Journal of Computational Materials Science and Engineering, 05(4): 1650020.

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[58] Kumar R., Patil H. S., Lal A. (2014) Nonlinear Flexural Response of Laminated Composite Plates on a Nonlinear Elastic Foundation with Uncertain System Properties under Lateral Pressure and Hygrothermal Loading: Micromechanical Model, Journal of Aerospace Engineering, Volume 27 Issue 3.

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INTERACTION WITH OUTSIDE WORLD: (NOT LIMITED TO FOLLOWING) RESEARCH SKILLS

- Deterministic and probabilistic finite element analysis of macro-mechanical and micro-mechanical modeling of composite and sandwich structures, functionally graded material structures, smart material structures.
- Deterministic and probabilistic finite element method for analysis, design, simulation and modeling of structural response (**such as linear, nonlinear free and forced vibration, initial and post buckling, linear and nonlinear bending, stability and failure (Dynamic and static), fracture (internal and external), optimization, dynamic analysis (forced damped, impact, ballistic, pulse etc.), and other analysis**) of beams, plates, shells of different types such as cylindrical, spherical, conical, hyperboloid shells and other types of structures.
- Deterministic and probabilistic finite element method for analysis, design, simulation and modeling of various types of **cut-outs of structures members in various thermal and hygro-thermal environments**.

  Development of novel programme for deterministic and probabilistic analysis in MATLAB software, ANSYS software and NASTRAN Software. Validation of deterministic analysis using ANSYS, MATLAB and NASTRAN software while probabilistic program in MATLAB software using independent Monte Caro Simulation.
  Expertize in finite element method (FEM), extended finite element method (XFEM) and

multi-scale XFEM approach.

FUTURE TEACHING PLAN

- Development new breed of engineers, entrepreneurs, and researchers that can learn, and adapt to, the dynamic and ever changing technological landscape and apply the knowledge to serve the stakeholders – the college, the society, the local and national industries and the educational institutions.
- Student interactive presentations are currently delivered to students during the class sessions, which have resulted in an improved understanding of concepts. Contemporary students entering the UG are thorough with the analytical and theoretical concepts, but lack in the physical interpretation of the same. This may be due to the current entrance and education procedure, they follow in the secondary and higher secondary schooling. Thus, efforts are being made from my end, to solve the conceptual issues with physical significance. Subsequently, I wish to follow this methodology in my future institutes and incorporate with the gathered research acumen during the past 12 years of teaching and research experience.
- I personally feel that, along with the theoretical study, the experimental and visual interaction can absorb by human brain quickly. So, in future also, I am planning to adopt the same concept in my teaching also. Whenever possible, wherever essential, in present institute and in future also, I will try to show video lectures/demo videos/industrial expert interaction with my student/industrial visits for better understanding the concept and clear their basics, so that in future work/job/research they always get fulfill and adopt their knowledge in their need.

Dr. Achchhe Lal
Assistant Professor
DoME, SVNIT, Surat