

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

Curriculum Vitae



Brief Profile: 1-2 paragraphs (not exceeding 500 words)

I am an Assistant Professor in the Department of Mechanical Engineering, National Institute of Technology Tiruchirappalli, Tamil Nadu, India. I received my Ph.D. in Applied Mechanics from IIT Delhi, New Delhi, India in 2019 with Distinction in Doctoral Research, my Master's degree in Engineering Mechanics from IIT Delhi, New Delhi, India in 2014 and my Bachelor's degree in Mechanical Engineering from Institute of Technical Education and Research, Siksha 'O' Anusandhan University, Bhubaneswar, India in 2011 with University Gold Medal. My research interests include Solid Mechanics and Design, Finite Element Method, Plates and Shells, Structural Dynamics and Stability, Nonlinear Mechanics, Composite Structures, and Nonlocal Theories of Elasticity.

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2. Designation: Assistant Professor
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6. Field(s) of Specialization: Design Engineering
7. Employment Profile

Job Title	Employer	From	To
Assistant Professor, Mechanical Engineering	National Institute of Technology, Tiruchirappalli	25/06/2020	Present
Assistant Professor, Mechanical Engineering	PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur	16/03/2020	19/06/2020

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Indian Institute of Technology Delhi	2019	Distinction	Applied Mechanics

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

M.Tech.	Indian Institute of Technology Delhi	2014	1st	Engineering Mechanics
B.Tech.	Siksha 'O' Anusandhan University, Bhubaneswar	2011	1 st (Gold Medal)	Mechanical Engineering
Higher Secondary	Council of Higher Secondary Education (CHSE), Odisha	2007	1st	-
Secondary	Board of Secondary Education (BSE), Odisha	2005	1st	-

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Warden	Zircon – A & B Hostels, Mega Mess – I First Floor (North)	November 2021	Present
Faculty Advisor	Literary Club (Akshara & Aayaam)	August 2022	Present
PAC Chairman, B.Tech. Vth Semester	Department of Mechanical Engineering	July 2022	Present
Faculty-in-Charge, Advanced Engineering Simulations Lab	Department of Mechanical Engineering	September 2021	Present
Faculty-in-Charge, Computational Mechanics Lab	Department of Mechanical Engineering	September 2021	Present
Member, B.Tech. Project Committee (PC)	Department of Mechanical Engineering	July 2021	June 2022
Member	Anti-ragging Committee	June 2022	July 2022
Coordinator, Virtual Lab Project	Department of Mechanical Engineering	November 2020	June 2021
Member, NBA Committee	Department of Mechanical Engineering	2021-22 Session	
Member	Accommodation and Seating Committees, 18 th Convocation	July 2022	

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Mentor, Advisory Board (R&D)	Elofic Industries Limited, Faridabad	2020	Present
Co-opted member, Executive Council	Indian Society for Applied Mechanics (ISAM)	2017	2019
Mess Secretary	Aravali House, IIT Delhi	2016	2017
Secretary	Applied Mechanics Society (AMS), IIT Delhi	2015	2016

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2022	Distinction in Doctoral Research	Indian Institute of Technology Delhi
2019	International Travel Support (ITS)	Science and Engineering Research Board (SERB), Government of India
2019	Research Scholar Travel Award (RSTA)	Indian Institute of Technology Delhi
2018	Research Excellence Travel Award (RETA)	Indian Institute of Technology Delhi
2017	Research Promotion Fund	Indian Institute of Technology Delhi
2012	University Gold Medal	Siksha 'O' Anusandhan University, Bhubaneswar

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)

13. Details of Academic Work

(i) Curriculum Development

Undergraduate level:

Sl. No.	Course Title	Course Type	Year
1	Finite Element Method	Programme Elective (PE)	2022-23
2	Advanced Mechanics of Solids	Programme Elective (PE)	2022-23
3	Vehicle Dynamics	Programme Elective (PE)	2022-23
4	Computational Methods in Engineering	Open Elective (OE)	2022-23

(ii) Courses taught at Postgraduate and Undergraduate levels

Undergraduate level:

Sl. No.	Course Title	Course Type
1	Finite Element Method	Open Elective (OE)
2	Automobile Engineering	Programme Core (PC)
3	Fundamentals of Automotive Technology	Minor (MI)
4	Vehicle Dynamics	Programme Elective (PE)
5	Basics of Mechanical Engineering	General Institute Requirement (GIR)
6	Metrology and Quality Control	Programme Core (PC)
7	Operations Research	Programme Elective (PE)
8	Thermodynamics and Fluid Mechanics Laboratory	Essential Laboratory Requirement (ELR)

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

(iii) Projects guided at Postgraduate level

Sl. No.	Name	Project Title	Year
1	Chevuru Venkata Hemanth	Waste water treatment from paint industry using adsorption method	Jun 2022
2	Chevuru Venkata Hemanth	Ergonomic risk assessment of carpentry shop	Dec 2021
3	Ganesh	Smog tower solution for improving outdoor air quality	Jun 2021
4	Deepak M	Environment health and safety capability development for operation team	Jun 2021
5	Deepak M	Central air purification solution for industrial health and hygiene-general ward of district hospital	Dec 2020

(iv) Other contribution(s)

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role (Supervisor/ Co-Supervisor)	Year of Award

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International /National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue
06-07 May 2022	International Conference on Advancements in Interdisciplinary Research (AIR-2022)	International	Session chair	MNNIT Allahabad, Prayagraj	Online mode

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

24-25 September 2021	2 nd International Conference on Recent Advances in Mechanical Engineering Research and Development (ICRAMERD-2021)	International	Reviewer	Siksha 'O' Anusandhan University, Bhubaneswar	Online mode
28-29 May and 04-05 June, 2021	Virtual Seminar on Applied Mechanics (VSAM-2021)	National	Session chair	Indian Society for Applied Mechanics (ISAM)	Online mode
03-05 July 2019	4 th Indian Conference on Applied Mechanics (INCAM-2019)	National	Paper presenter	Indian Society for Applied Mechanics (ISAM)	IISc Bangalore, Bengaluru, India
11-14 June 2019	13 th International Conference on the Mechanical Behaviour of Materials (ICM-13)	International	Paper presenter	RMIT University, Melbourne, Australia	RMIT University, Melbourne, Australia
09-15 November, 2018	ASME 2018 International Mechanical Engineering Congress and Exposition (IMECE-2018)	International	Paper presenter	American Society of Mechanical Engineers (ASME)	David L. Lawrence Convention Center, Pittsburgh, USA
4-6 July 2018	1 st Symposium and Workshop for Analytical Youth on Applied Mechanics (SWAYAM-2018)	National	Paper presenter	Indian Society for Applied Mechanics (ISAM)	BITS Pilani, K.K. Birla Goa Campus, Goa, India
16-22 July 2017	25 th Annual International Conference on Composites/Nano Engineering (ICCE-25)	International	Paper presenter	International Community for Composites Engineering (ICCE)	Sheraton Parco de' Medici Rome Hotel, Rome, Italy

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

5-7 July 2017	3 rd Indian Conference on Applied Mechanics (INCAM-2017)	National	Paper presenter	Indian Society for Applied Mechanics (ISAM)	MNNIT Allahabad, Prayagraj, India
27 June – 01 July, 2016	6 th International Congress on Computational Mechanics and Simulation (ICCMS-2016)	International	Paper presenter	Indian Association for Computational Mechanics (IndACM)	IIT Bombay, Mumbai, India
16-19 December 2015	60 th Congress of the Indian Society of Theoretical and Applied Mechanics (ISTAM-2015)	International	Paper presenter	Indian Society of Theoretical and Applied Mechanics (ISTAM)	MNIT Jaipur, Jaipur, India
13-15 July 2015	2 nd Indian National Conference on Applied Mechanics (INCAM-2015)	National	Paper presenter	Indian Society for Applied Mechanics (ISAM)	IIT Delhi, New Delhi, India
22-24 December 2014	1 st International Conference on Multifunctional Materials, Structures and Applications (ICMMSA-2014)	International	Paper presenter	MNNIT Allahabad, Prayagraj, India	MNNIT Allahabad, Prayagraj, India

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date(s)	Role	Venue
1 st Symposium and Workshop for Analytical Youth on Applied Mechanics (SWAYAM-2018)	National	04-06 July 2018	Organizing Secretary	BITS Pilani, K.K. Birla Goa Campus, Goa

18. Invited Talks delivered

Topic	Date	Inviting Organization

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life Member	Indian Society of Theoretical and Applied Mechanics (ISTAM)	L/1204 (21/10/2020)
Life Member	Indian Society of Mechanical Engineers (ISME)	L-0427 (21/10/2020)
Life Member	Indian Society for Applied Mechanics (ISAM)	LM00201 (13/10/2020)

20. Academic Foreign Visits

Country	Duration of Visit	Programme
Australia	11/06/2019 to 14/06/2019	13 th International Conference on the Mechanical Behaviour of Materials (ICM-13), Melbourne
United States of America	09/11/2018 to 15/11/2018	ASME 2018 International Mechanical Engineering Congress and Exposition (IMECE-2018), Pittsburgh
Italy	16/07/2017 to 22/07/2017	25 th Annual International Conference on Composites/Nano Engineering (ICCE-25), Rome

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
Shukla, A. K., Koul, K., & Babu, B.	Study of modern air purification and sterilization techniques	Environmental and Earth Sciences Research Journal	Accepted	1-11	2022	-
Babu, B., & Patel, B. P.	An improved quadrilateral finite element for nonlinear second-order strain gradient elastic Kirchhoff plates	Meccanica	55	139-159	2020	2.538

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

Babu, B., & Patel, B. P.	A new computationally efficient finite element formulation for nanoplates using second-order strain gradient Kirchhoff's plate theory	Composites Part B: Engineering	168	302-311	2019	11.322
Babu, B., & Patel, B. P.	Analytical solution for strain gradient elastic Kirchhoff rectangular plates under transverse static loading	European Journal of Mechanics-A/Solids	73	101-111	2019	4.873
Babu, B., & Patel, B. P.	On the finite element formulation for second-order strain gradient nonlocal beam theories	Mechanics of Advanced Materials and Structures	26(15)	1316-1332	2019	3.338

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
Saju, N., Castro, T. D., Rohit, D., & Babu, B.	Analytical study of strain gradient Timoshenko nanobeams	8 th International Congress on Computational Mechanics and Simulation (ICCMS-2022)	Accepted	Computational Mechanics	IIT Indore, Indore, India	2022
Babu, B., & Patel, B. P.	Transient analysis of second-order strain gradient Kirchhoff nanoplates	4 th Indian Conference on Applied Mechanics (INCAM-2019)	332-335	Applied Mechanics	IISc Bangalore, Bengaluru, India	2019

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

Babu, B., & Patel, B. P.	Transient dynamic analysis of second-order strain gradient Euler-Bernoulli nanobeams	13 th International Conference on the Mechanical Behaviour of Materials (ICM-13)	237-243	Mechanical Behaviour of Materials	RMIT University, Melbourne, Australia	2019
Babu, B., & Patel, B. P.	Levy's solution for strain gradient plates under transverse loading: Nonlocal boundary value problems	ASME 2018 International Mechanical Engineering Congress and Exposition (IMECE-2018)	89427	Mechanical Engineering	David L. Lawrence Convention Center, Pittsburgh, USA	2018
Babu, B., & Patel, B. P.	Finite element analysis of nonlinear second-order strain gradient Kirchhoff plate	1 st Symposium and Workshop for Analytical Youth on Applied Mechanics (SWAYAM-2018)	77-78	Applied Mechanics	BITS Pilani, K.K. Birla Goa Campus, Goa, India	2018
Babu, B., & Patel, B. P.	Buckling and free vibration analyses of nanoplates using second-order strain gradient Kirchhoff plate theory	25 th Annual International Conference on Composites/Nano Engineering (ICCE-25)	3c.3	Composites/ Nano Engineering	Sheraton Parco de' Medici Rome Hotel, Rome, Italy	2017
Babu, B., & Patel, B. P.	Finite element formulation for second-order strain gradient nonlocal plates	3 rd Indian Conference on Applied Mechanics (INCAM-2017)	3-4	Applied Mechanics	MNNIT Allahabad, Prayagraj, India	2017

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

Babu, B., & Patel, B. P.	Buckling of nanobeams using different nonlocal continuum theories	6 th International Congress on Computational Mechanics and Simulation (ICCMS-2016)	709-712	Computational Mechanics	IIT Bombay, Mumbai, India	2016
Babu, B., & Patel, B. P.	Free vibration analysis of nanorods using different nonlocal theories	60 th Congress of the Indian Society of Theoretical and Applied Mechanics (ISTAM-2015)	sm-fp-276	Theoretical and Applied Mechanics	MNIT Jaipur, Jaipur, India	2015
Babu, B., & Patel, B. P.	Nonlocal theories for modelling of nanostructures	2 nd Indian National Conference on Applied Mechanics (INCAM-2015)	CM21	Applied Mechanics	IIT Delhi, New Delhi, India	2015
Babu, B., & Patel, B. P.	Finite element analysis of nanobeams using nonlocal approaches	1 st International Conference on Multifunctional Materials, Structures and Applications (ICMMSA-2014)	111-114	Multifunctional Materials	MNNIT Allahabad, Prayagraj, India	2014

(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number