

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

Curriculum Vitae



Brief Profile: Dr. Laxman Mani Kanta Puppala completed his Bachelor's degree in Metallurgical and Materials Engineering from state government university established specially for rural youth i.e., Rajiv Gandhi University of Knowledge Technologies (RGUKT), Nuzvid. Later-on he secured seat in the specialization of Materials Science in Engineering for Master Programme in National Institute of Technology Tiruchirappalli (NITT) through GATE entrance. He received academic proficiency prize for 2014-2016 from NIT Tiruchirappalli. After M.Tech, he joined as Project Scientist – B in DST sponsored project Technical Research Centre (TRC) – Alternate Energy Materials & Systems at International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Chennai and executed lithium-ion cell research & development activities in pilot plant scale. He is quite experienced in lithium-ion cell development in pilot plant scale. Especially streamlined the lithium-ion cell development through quality control process, dismantling & failure analysis and thermal analysis & safety testing. Also executed another DST sponsored project sanctioned for the development of low-cost sodium-ion batteries at ARCI Chennai. Under this project developed scalable synthesis of polyanionic cathode materials through novel routes for energy storage applications. Experienced in the preparation of 5 to 10 Ah sodium-ion pouch cells with indigenously prepared electrode material. He developed a novel technique, i.e., microwave assisted sol-gel synthesis, to synthesize electrode materials with a unique microstructure favorable for good electrochemical performance. International patents have been awarded for the method, and recently Japanese and Korean patents have been granted. His work on polyanionic sodium vanadium phosphate material exhibiting >3 moles of sodium storage and high energy-power characteristics in full cell level have been published in the high-impact journals “ACS Applied Energy Materials” and “Applied Energy.” He has also published his work on sodium-titanate, as an ultra-low voltage anode material for sodium-ion batteries.

While working at ARCI, he pursued his doctoral studies at Indian Institute of Technology Madras (IITM) and received Ph.D. degree for “Scalable synthesis of NASICON type sodium vanadium phosphate and its derivative for sodium-ion battery applications” in 2023. Later-on he moved to R&D of KPIT Technologies Ltd., Pune as Tech Lead – Alternate Fuels where he worked upon new material and technology development of sodium-ion batteries for stationary and e-mobility applications. Recently, he joined in the department of Metallurgical and Materials Engineering of NIT Tiruchirappalli as Assistant Professor. His research interests are Electrochemical Energy storage materials for beyond Li-ion batteries i.e., Na, K, Mg and Al etc., Thermal and Safety analysis of batteries, Battery Forensics and Urban mining.

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

1. Name: Puppala Laxman Mani Kanta
2. Designation: Assistant Professor
3. Office Address: 1st floor, Dept. of MME
4. Telephone (Direct) (Optional):
- Telephone : Extn (Optional):
- Mobile (Optional): +91 9474382725
5. Email (Primary): laxmanmanikanta@nitt.edu Email (Secondary) :
laxmanmaniram@gmail.com
6. Field(s) of Specialization: Energy Storage Materials for beyond Li-ion batteries, Thermal, Safety evaluation and Forensic analysis of batteries, Corrosion Engineering

7. Employment Profile

Job Title	Employer	From	To
Assistant Professor	National Institute of Technology Tiruchirappalli	03-05-2024	Till Date
Tech Lead – Alternate Fuels	KPIT Technologies Ltd., Pune	27-04-2023	02-05-2024
Project Scientist – B	International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) Chennai	25-10-2016	26-04-2023

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

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Indian Institute of Technology Madras (IITM)	2023	-	Energy Storage Materials for Sodium-ion Battery
M.Tech	National Institute of Technology Tiruchirappalli	2016	Distinction	Materials Science and Engineering
B.Tech	Rajiv Gandhi University of Knowledge	2014	First Class	Metallurgical and Materials Engineering

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

	Technologies (RGUKT), Nuzvid			
PUC/Intermediate	Rajiv Gandhi University of Knowledge Technologies (RGUKT), Nuzvid	2010	Distinction	M.Bi.P.C
SSC/10 th Standard	Z P High School Chorampudi	2008	First Class	-

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Coordinator for 20 th Convocation	Institution	2 nd Aug 2024	3 rd Aug 2024
PG Admission committee member	Institution	9 th Aug 2024	9 th Aug 2024
Lab Coordinator for Metallography UG lab	Department	6 th May 2024	Till Date
Lab Co-Coordinator for Advanced Materials Processing Lab, Polymers Lab and Metallography PG lab	Department	6 th May 2024	Till Date

10. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2022	International Travel Support/Grant	Science and Engineering Research Board (SERB), GOI
2016	Academic Proficiency Prize/Award	National Institute of Technology Tiruchirappalli

11. Details of Academic Work

(i) Curriculum Development

Introduced two new elective courses which got approved in BOS 2024

PG Elective Course – Advanced Electrochemical Techniques

UG Elective Course – Electrochemical Processing of Materials

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

(ii) Courses taught at Postgraduate and Undergraduate levels

UG – MTPE22 High Temperature Materials

PG – MT603 Joining of Materials – I

(iii) Projects guided at Postgraduate level

One M.Tech Project Thesis work – ongoing

12. 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
Dec 5-8, 2022	7th International Conference on Sodium Batteries (ICNaB 2022)	International	Speaker	Helmholtz Institute Ulm (HIU) and ZSW sponsored by Natron Energy	Ulm, Germany
Nov 3-5, 2022	Envision – India's First Energy Festival	National	Participant	India Energy Storage Alliance in association with IITMRP	IITM Research Park, Chennai
April 29-30, 2022	National Conference for Energy Technologies	National	Speaker	INAE Chennai	IIT Madras, Chennai
Nov 5-7, 2019	Young Scientists Conference (YSC)	National	Poster Presenter	India International Science Festival 2019 (IISF)	Biswa Bangla Convention Centre, Kolkata
Mar 8-9, 2019	Two-Day Workshop on Atom Probe Tomography	National	Participant	National Facility for Atom Probe Tomography (NFAPT), IIT Madras	IIT Madras
Oct 18-20, 2018	3rd National conference on Materials for Energy Conversion and Storage	National	Speaker	IIT (BHU) Varanasi in association with Energy Science Society of India	IIT BHU, Varanasi

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

2014	Prediction, Prevention and Post Analysis of Engineering Failures	National	Participant	Society of Failure analysis, Tiruchirappalli chapter	NIT Tiruchirappalli
------	--	----------	-------------	--	---------------------

13. Academic Foreign Visits

Country	Duration of Visit	Programme
Germany	Dec 5 - 8, 2022	7th International Conference on Sodium Batteries (ICNaB 2022)

14. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
P. Laxman Mani Kanta, M. Venkatesh, Satyesh Kumar Yadav, Bijoy Das and R. Gopalan	High Energy-Power Characteristics of Microstructurally Engineered Sodium Vanadium Phosphate in Full Cell Level	Applied Energy	334	120665	2023	10.1
Manchala Venkatesh, G. Sudha Priyanga, Sonia Sharma, P. Laxman Mani Kanta, Tiju Thomas, R. Gopalan and Bijoy Das.	Effect of Dopants and Microstructure on the Electrochemical Cyclic Stability of Layered P2-Na _{0.67} MnO ₂ Prepared by Different Chemical Routes: An Experimental and Theoretical Study	Ceramics International	49 (4)	6654-6665	2023	5.1

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

P. Laxman Mani Kanta, N. Lakshmi Priya, Prajeet Oza, M. Venkatesh, Satyesh Kumar Yadav, Bijoy Das, G. Sundararajan, and R. Gopalan.	Unusual Case of Higher Cyclic Stability at a Wider Voltage Window in Sodium Vanadium Phosphate	ACS Applied Energy Materials	4 (11)	12581- 12592	2021	5.4
P. Laxman Mani Kanta, M. Venkatesh, Satyesh Kumar Yadav, Bijoy Kumar Das and R. Gopalan	Scalable Synthesis and Kinetic Studies of Carbon Coated Sodium Titanate: A Promising Ultra- Low Voltage Anode for Sodium Ion Battery.	Transactions of Indian National Academy of Engineering	5	475-483	2020	-
P. Laxman Mani Kanta, V. C. Srivastava, K. Venkateswarlu, Sharma Paswan, B. Mahato, Goutam Das, K. Sivaprasad, and K. Gopala Krishna	Corrosion Behavior of Ultrafine-grained AA2024 Aluminum Alloy Produced by Cryorolling.	International Journal of Minerals, Metallurgy and Materials	24(11)	1293- 1305	2017	5.6

15. Patents

Patent Title	Filed/Grant Number	Date of filing/Grant
Microwave-assisted sol-gel process for preparing in-situ carbon-coated electrode materials and the product there of	Korean Grant No. 10-2497808	03-02-2023
	Japanese Grant No. JP7074870	24-05-2022
	International Publication No. WO2020174487 (PCT/IN2020/050143) Indian Application No. IN201911008004	International on 03-09- 2020 (PCT filed on 13-02- 2020) Indian on 28-02-2019