

B.N.M. Institute of Technology

An Autonomous Institution under VTU

Department of Electrical and Electronics Engineering

Details of Center of Excellence: Electric Vehicle Technology (EVT)

COE: Electric Vehicle Technology (EVT)

Company Name: NexGen Engineering Private Limited

Contact Details: Mr. Jagadeesh M S, Sales and Marketing Specialist,

support@nexgenpvtltd.com, 9900377333

SPOC Name: Dr. Madhu S

Date of MoU Signed: 30/01/2026

The objectives of the COE between BNMIT and NexGen Engineering Pvt. Ltd.:

1. Promote advanced learning in field of Battery Management System.
2. Enhance research and innovation by conducting high quality research in field of battery technology, power electronics, vehicle control and energy management
3. Strengthen industry collaboration by collaborating with automobile manufacturers, EV Start ups, Component manufacturers.
4. Promote sustainable transportation by developing environment friendly technologies that improve energy efficiency , reduce emissions and support India's transition towards green mobility

List of Activities

Papers published and presented under CoE-EVT ---(3 nos.)

- (1) Nikhil Bhargava S, Pavan Bhat, Gurannagouda, Mahesh S, Dr. Venkatesha K, "Automated Wheel Chair", International Journal of Multidisciplinary Research in Science, Engineering & Technology (IJMRSET), | ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 7.54|Volume 6, Issue 5, May 2023
- (2) Venkatesha K, Sudalai Shunmugam, A Kumar, Vijayashree L, "Design & Development of an Automated Wheelchair for differently abled person using Keypad and Bluetooth Technology", 2024 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), Bengaluru, India, January, 2024.
- (3) Venkatesha K, R V Parimala, Champa P N, "Power train design and build up of EV born car using power flow analysis", 2023 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), Bengaluru, India, 2023, pp. 690-695, DOI: 10.1109/IITCEE57236.2023.10090958, 27-28, January, 2023 (Best Paper award).

Workshop organized under CoE-EVT ---(2 nos.)

National workshop on “Artificial Intelligence Applications in Autonomous Vehicles” at BNMIT, Bangalore in association with IE(I) KSC from 22/04/2024 to 27/04/2024

Sl. No.	Academic Year	Category	No. of Students/Faculty	Objectives	Date/Duration	Outcomes
1	2025-2026	Student Internships	06	• Design and manufacturing of lithium-ion battery packs (NMC & LFP chemistries) for electric two-wheelers and other EVs • Customization of battery packs based on voltage (24V, 36V, 48V, 60V, 72V) and dimensional requirements • Study and testing of Smart Battery Management Systems (BMS) for cell balancing, protection, and monitoring • Working with EV battery controllers and charging systems • Battery manufacturing process: cell selection, cell matching, spot welding, BMS integration, quality testing, and dispatch • Exposure to battery servicing, testing procedures, and 2-wheeler battery conversion projects • Interaction with R&D activities related to EV battery technology	07/07/2025 to 06/10/2025	• Stipend of 5,000/- for each student every month during the Internship • Gained practical, hands-on understanding of lithium-ion battery manufacturing — from cell selection and BMS integration to quality testing — along with knowledge of EV battery controllers, chargers, and customization for different vehicle requirements. • Developed the ability to identify and troubleshoot basic faults in battery packs and charging systems, while learning industrial safety standards and quality control protocols followed in EV battery production.
2	2025-2026	Student Project	03	Project Title: Off Road Electric Motor Cycle To develop an Eco-friendly, durable and powerful Off-Road motor cycle with stability and reliability	01/10/2025 to 28/02/2026	• Successfully designed and developed a functional off-road, lightweight electric motorcycle prototype for rough terrain conditions • Integrated BLDC motor and drivetrain system for efficient power delivery and high torque • Implemented a 72V, 26Ah, 20S NMC battery pack providing good performance and range

						• Demonstrated an eco-friendly and cost-effective alternative to conventional petrol off-road bikes
3	2025-2026	Student Project	03	Project Title: IoT Based Wearable Safety Technology To develop a smart helmet system to enhance rider safety, enable automatic SOS alerts with real time GPS location and to create a mobile application for monitoring and control functions	01/10/2025 to 28/02/2026	• Developed a prototype module of smart helmet enhancing rider safety with ignition control, real-time accident detection, improved emergency response.
4	2025-2026	Industry Exhibition during Open Day at BNMIT	Open to Public, Staff, Industry people, students	NexGen Engineering Pvt. Ltd. participation in the Open Day to exhibit their products and services	18/04/2026	• Demonstrated the real-world EV battery technology, including lithium-ion battery packs, BMS, and charging solutions to school students, college students and the general public. • Exhibited a range of their EV products and technologies including various battery chemistries (NMC and LFP lithium-ion cells), assembled battery packs, BMS, EV motors, battery controllers, and chargers, giving visitors a hands-on look at the components that power electric vehicles.



EXPERIENCE LETTER

Date: Monday, February 9, 2026

To Whomsoever It May Concern,

This is to certify that **Mr. Kaveendra K. Joshi**, was engaged with **NexGen Engineering Private Limited, Bengaluru**, as an **Intern – Research and Development**, from Monday, July 7, 2025, to Monday, October 6, 2025. During this period, he successfully completed a three-month internship program and contributed to the project titled *"Internet-of-Things-based (IoT-based) Wearable Safety Technology."*

We found him to be dedicated, sincere, and enthusiastic in his work. His contributions added value to our project, and he demonstrated a keen interest in learning and applying engineering concepts to practical scenarios.

This letter also serves as a relieving letter, confirming that **Mr. Kaveendra K. Joshi**, has completed his internship tenure with us and has been relieved of his responsibilities as of October 6, 2025.

We wish him success in all his future endeavors.

Sincerely,


Mr. Jagan K. Joshi M. S.

Chief Executive Officer,
NexGen Engineering Private Limited.

Registered Office: NEX GEN ENGINEERING PRIVATE LIMITED
#94 3RD CROSS, DODDANAGAMANGALA, ELECTRONIC CITY
PHASE 2, BANGALORE, KARNATAKA 560 100
Mob:- +91 9652700363, 9900377333,
E-mail: support@nexgenpvtltd.com | www.nexgenpvtltd.com
GST NO: 29AAHCG2596Z9 CIN: U65500KA2020PTC135912.

1. Students' Internship



3. Students' Project on IoT Based Wearable Safety Technology



2. Students' Project Work on **Off Road Electric Motor Cycle**



4. Industry Exhibition during Open Day at BNMIT

Patents granted under CoE-EVT(2 Nos.)

- (1) Electric Wheel chair
- (2) IoT based Green Energy Charging station



**Automated Electric wheelchair:
Design Patent granted [Apr 2024]**



**IoT based Green Energy Charging station
Design Patent granted [March-2024]**



Activities planned

Sl. No.	Activity	Tentative Duration/ Date	No. of students/ Staff	Location
1	Workshop on EV Battery pack design and manufacture	September 2026	6 Students & 2 Staff	NexGen Engineering Pvt. Ltd.
2	Internship on EV Battery pack design and manufacture	December 2026	30-40 students of BNMIT and Other Engineering colleges	EV Lab, BNMIT
3	FDP on Battery Technology and Battery Management System	January 2027	Staff members of Engineering Colleges	Dept. of EEE, BNMIT