EV CLUB AT AIT

Welcome to the EV Club at Army Institute of Technology (AIT), where innovation meets excellence in the realm of Electric Vehicles (EVs). Our club is equipped with cutting-edge laboratory facilities designed to nurture creativity and hands-on learning in the field of sustainable transportation.

Donation Received

The EV Club received a generous donation of ₹10,00,000 from **Mrs. Asha Gogate**, which served as the initial fund to set up the club and its infrastructure.

CLUB IN-CHARGE (2024-25)

1. **Dr. PB Karandikar**
2. **Dr. Preeti Warrier**
3. **Prof Rajesh Godse**
4. **Prof Girish Kapse**
5. **Prof Sachin Tanawade**
6. **Prof. Anjali Hudedamani**

CLUB SECRETARIES (2024-25)

1. **Abhishek Kumar, TE EnTC**
2. **Ashish, TE Comp**

Lab Facilities:

1. Battery Capacity Tester: (Rs. 50K)

Our lab features a sophisticated Battery Capacity Tester provided by Nana Industries. Operating at voltages from 12V to 100V DC, this equipment is essential for testing both lithium and lead-acid batteries. It enables precise evaluation of battery performance, ensuring our EV designs are efficient and reliable.

2. N2/AIR Filling Machine + Compressor: (Rs. 80K)

To support comprehensive vehicle maintenance, our lab is equipped with an N2/AIR Filling Machine along with a compressor. This setup facilitates the inflation of tires with nitrogen or air, crucial for optimizing vehicle performance and safety.

3. Arc Welding Machine (Rs. 20K)

For fabrication and assembly tasks, we have an Arc Welding Machine available. This tool allows us to construct and repair various components of electric vehicles, ensuring structural integrity and durability.

4. Multitoolkit: (Rs.5K)

Our lab includes a versatile Multitoolkit that aids in precision work and small-scale adjustments during prototyping and assembly processes.

5. Grinding Machine: (Rs. 15K)

To refine and shape materials used in vehicle construction, we have a Grinding Machine that supports the fabrication of components with exact specifications.

6. BLDC Hub Motors: (Rs. 60K)

For practical demonstrations and experimental purposes, we utilize BLDC (Brushless DC) Hub Motors. These motors showcase advanced propulsion technologies and provide hands-on experience in motor integration and performance testing.

7. Hydraulic Ramp: (Rs. 15K)

Facilitating vehicle inspection and maintenance, our lab is equipped with a Hydraulic Ramp. This feature ensures convenient access to the underside of vehicles for servicing and repairs.

& many more…

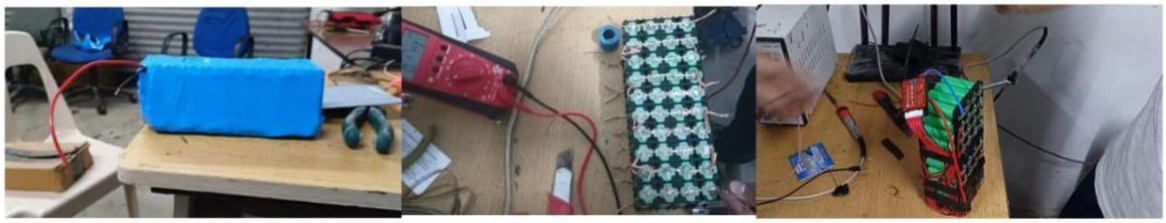
An amount of Rs. 2.5 lakhs (in 23-24 session) and 1 lakh (24-25 session) is spent till date.

COMPLETED PROJECTS

1. **Conversion Of IC engine Car to Electric Car**

We successfully transformed a Daewoo Matiz Scrap car into an electric vehicle, leveraging its front-wheel-drive system by placing the electric motor and differential to the rear. Powered by a series of twelve 72V lead-acid batteries, our innovative conversion delivers a substantial 50km range. This project not only breathes new life into a retired vehicle but also showcases our commitment to sustainable and eco-friendly transportation solutions.

2. **Li ion Battery Pack**



Our recent accomplishment involves the meticulous assembly of a Li-ion battery pack utilizing high-quality 18650 cells, each rated at 3.7V. Through careful design of dimensions and connections, we've successfully crafted a powerhouse that outputs 36V with a substantial 10Ah capacity. What sets our creation apart is the inclusion of a sophisticated Battery Management System (BMS), ensuring not only optimal performance but also precise charge balancing for enhanced longevity and reliability.

3. Electric Cycle

Introducing our innovative project – the Electric Conversion Cycle, where we've seamlessly transformed a conventional bicycle into an eco-friendly marvel. The heart of this transformation lies in the integration of a powerful 350W hub motor discreetly embedded in the wheel, coupled with **a self made 36V 10Ah battery(Above mentioned)** system. This dynamic duo not only propels the cycle effortlessly but also ensures an impressive range of over 50 kilometers on a single charge.

4. **Electric Scooter**

Embark on a transformative journey with our cutting-edge project – the Conversion of IC Engine Scooter to Electric Scooter. We've redefined urban commuting by seamlessly transitioning from traditional internal combustion to a cleaner, more sustainable electric model. Powered by a robust 48V 20Ah battery and an efficient electric hub motor, this eco-friendly scooter not only provides a powerful performance but also ensures a remarkable range of 50 kilometers on a single charge.

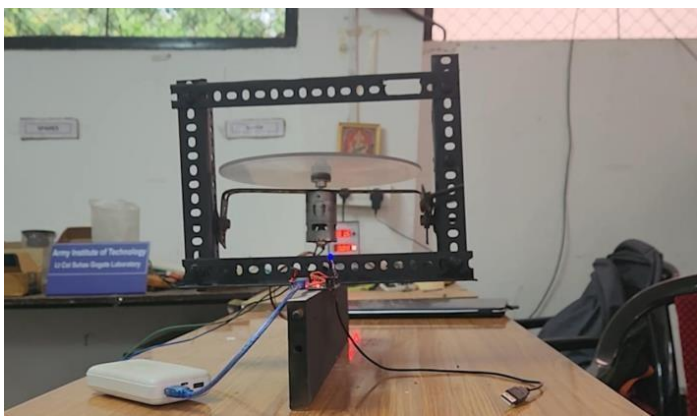
ONGOING PROJECTS

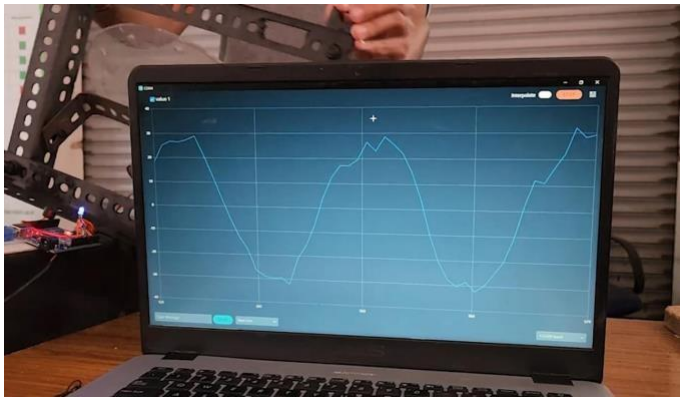
SELF BALANCING TWO WHEELER PROJECT (July 2024-Present)

The EV Club is excited to share our project on a self-balancing system for two-wheelers. This project uses a mechanical control axis gyro and a PID controller to keep the bike upright and stable while riding. Our main goal is to help riders feel safer and more confident, especially beginners.

The system works by using a gyro sensor that detects the bike's tilt and movement. When the bike starts to lean, the PID controller quickly makes adjustments to the motors, helping to balance the bike. This technology allows the two-wheeler to stay upright, even during sudden stops or turns.

PROTOTYPE I Overview





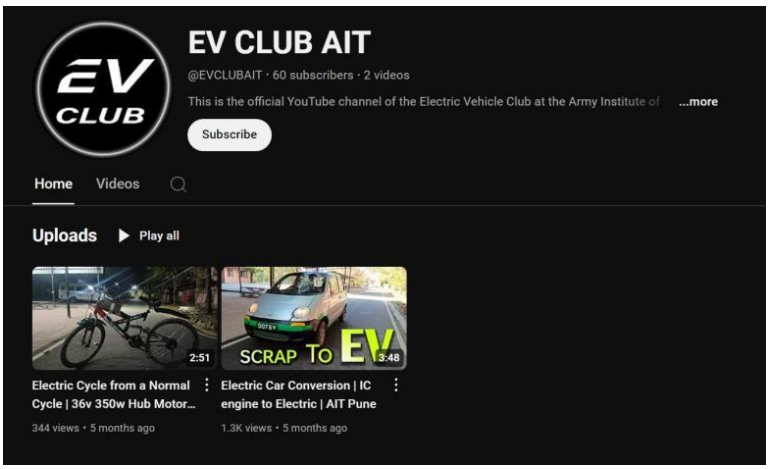
HYBRID TWO WHEELER

The EV Club is excited to embark on an innovative project to design and develop a hybrid two-wheeler that seamlessly integrates electric and petrol power. This unique vehicle features a two-wheel drive system, with an electric hub motor at the front wheel operating at 48V, and a 60cc petrol engine driving the rear wheel through a continuously variable transmission (CVT).

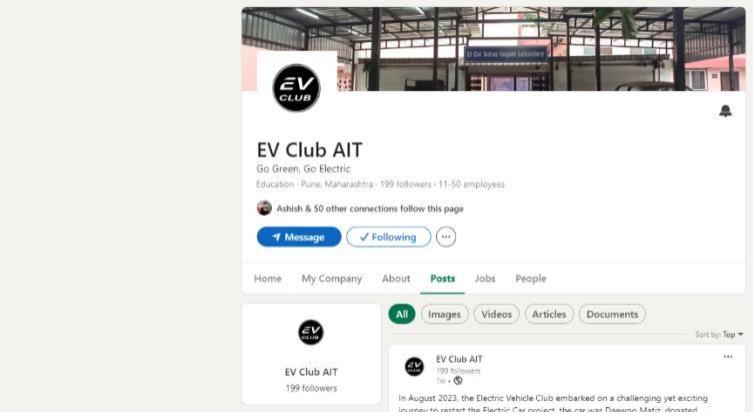
Explore Our Projects on YouTube:

The EV Club at AIT proudly showcases its achievements and project developments on our official YouTube channel. Here, you can witness firsthand the dedication and ingenuity behind our initiatives.

Youtube: https://www.youtube.com/@EVCLUBAIT



Connect with us on LinkedIn:



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