R. C. PATEL
INSTITUTE OF TECHNOLOGY, SHIRPUR
An Autonomous Institute

ENERGY CLUB

ACTIVITY REPORT 2026-27



DEPARTMENT OF ELECTRICAL ENGINEERING

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ABOUT ENERGY CLUB

The Energy Club of our institute is dedicated to fostering awareness and understanding of diverse energy-related topics, ranging from renewable energy sources to sustainable practices. The club provides a vibrant platform for students to explore, discuss, and contribute to the ever-evolving field of energy through interactive events, workshops, seminars, and discussions.

Members actively collaborate on projects that promote energy conservation and advocate cleaner and greener solutions. By nurturing innovation and knowledge sharing, the club aims to inspire the next generation of leaders committed to tackling global energy challenges.

To enrich students' real-world understanding, the club regularly organizes industrial visits, expert talks, and hands-on sessions with professionals from the energy sector. Overall, the Energy Club plays a crucial role in empowering students to make a meaningful contribution toward energy efficiency and sustainability.

VISION

To be a dynamic platform that inspires students to innovate, explore, and lead in the field of sustainable energy by promoting technical excellence, environmental responsibility, and research-driven solutions for a greener future.

MISSION

- To create awareness about renewable energy, energy conservation, and sustainable engineering practices through technical activities, workshops, seminars, and outreach programmes.
- To enhance students' practical knowledge and technical skills through hands-on learning, industrial interactions, innovation competitions, and research activities.
- To encourage interdisciplinary collaboration, leadership, teamwork, and professional ethics while addressing real-world energy challenges.
- To promote emerging technologies such as Electric Vehicles (EVs), IoT, Embedded Systems, Smart Grids, Automation, and Clean Energy Solutions.
- To contribute towards societal development by organizing community outreach programmes and supporting the achievement of the United Nations Sustainable Development Goals (SDGs).

CLUB CONSTITUTION

Position	Designation	Name / Detail
Faculty Advisor	Head of Department	Prof. Dr. Shailaja Arjun Patil
Faculty Coordinator	Coordinator	Prof. Krunalkumar Jitendrakumar Gandhi
Student Coordinator	Student (TY-Electrical)	Pragati Subhash Patil
Student Coordinator	Student (TY-Electrical)	Shreyas Ganesh Pawar
Secretary	Student (TY-Electrical)	Vishvpratap Singh
Members	33 Student Members (TY & Final — Electrical)	Full roster in Annexure I

ANNEXURE I: CLUB MEMBER ROSTER

Sr. No.	Name	Mobile No.	Email ID
1	Jayesh Sanjay Patil	8329965314	jayeshpatil76464@gmail.com
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33	Kavita Mali	9359636454	kavitamali6333@gmail.com

ACTIVITY - 1

WORKSHOP REPORT

Event: Microcontroller and Sensors Workshop
Venue: R. C. Patel English Medium Secondary School, Shirpur
Organized by: Energy Club, R. C. Patel Institute of Technology, Shirpur
Date: 14 October 2026

INTRODUCTION

The Energy Club of R. C. Patel Institute of Technology, Shirpur organized a one-day "Microcontroller and Sensors Workshop" at R. C. Patel English Medium Secondary School, Shirpur on 14th October 2026.
The workshop aimed to create early awareness among school students about electronics, automation, and embedded systems, emphasizing how microcontrollers and sensors form the backbone of modern technology.
This outreach initiative was part of the club's ongoing efforts to promote STEM education, encourage curiosity about energy-efficient technologies, and demonstrate how innovation begins with fundamental concepts.

OBJECTIVES OF THE WORKSHOP

The key objectives of the workshop were:

- To introduce school students to basic electronic components and their applications.
- To provide an understanding of microcontrollers and how they are used to control devices.
- To explain the role of sensors in modern automation systems.
- To motivate students to pursue careers in engineering and technology.
- To provide hands-on learning through live demonstrations and practical sessions.
- To strengthen the connection between technical institutes and local schools by fostering collaborative learning.

PLANNING

The Energy Club of the Department of Electrical Engineering planned a one-day Microcontroller and Sensors Workshop as an outreach initiative for students of R. C. Patel English Medium Secondary School, Shirpur. Prior to the event, the organizing committee coordinated with the school authorities to finalize the schedule, participant registration, venue arrangements, and laboratory facilities. Resource persons were assigned to conduct individual technical sessions on electronics, microcontrollers, sensors, and embedded systems. Arduino boards, sensor modules, electronic components, demonstration kits, and presentation materials were prepared in advance to ensure an effective learning experience. The workshop schedule was designed to include theory sessions, live demonstrations, practical activities, and an interactive quiz, thereby providing a balanced blend of conceptual and experiential learning.

EXECUTION

The workshop was conducted on 14 October 2026 at R. C. Patel English Medium Secondary School, Shirpur, with active participation from 250 students of Classes VII, accompanied by four faculty members. The programme commenced with an inaugural session introducing the objectives of the Energy Club and highlighting the importance of early exposure to electronics, automation, and sustainable technologies.

The technical sessions covered the fundamentals of electronic components, working principles of microcontrollers, and applications of various sensors in modern automation systems. Real-life examples, interactive models, and simulation videos were used to simplify technical concepts and make the sessions engaging for school students.

The afternoon session was conducted in the Atal Tinkering Laboratory, where students participated in hands-on activities using Arduino boards and sensor modules. Practical demonstrations included LED blinking, PIR sensor-based motion detection, temperature sensing with automatic fan control, and smart lighting systems. Students actively assembled circuits, observed outputs, and interacted with the technical team to understand the practical implementation of embedded systems. The workshop concluded with an interactive quiz, feedback session, and appreciation of active participants.

OUTCOMES

After successful completion of the workshop, participants were able to:

- Understand the basic concepts of electronics, microcontrollers, and embedded systems.
- Identify different types of sensors and their applications in automation and smart devices.

- Demonstrate the working of Arduino-based circuits through hands-on practical activities.
- Develop problem-solving and analytical skills by assembling and testing simple electronic systems.
- Recognize the role of automation and sensor technologies in energy-efficient and intelligent systems.
- Develop interest in STEM education and explore future opportunities in engineering and technology.
- Strengthen collaboration between higher education institutions and school students through technical outreach programmes.

IMPACT

The workshop successfully promoted STEM education and created early awareness among school students regarding electronics, automation, and embedded technologies. The combination of theory, live demonstrations, and practical learning significantly enhanced student engagement and curiosity towards engineering concepts. The outreach initiative strengthened the relationship between R. C. Patel Institute of Technology and R. C. Patel English Medium Secondary School, Shirpur while showcasing the institute's commitment towards community engagement and knowledge dissemination. The active involvement of Energy Club student volunteers also contributed to the development of leadership, teamwork, and communication skills, thereby fostering a culture of innovation and technical excellence.

PO / PSO MAPPING

PO / PSO	Level	Justification
PO1	2	Applied fundamental engineering knowledge while explaining electronics and embedded systems.
PO2	2	Demonstrated analysis of simple electronic and sensor-based systems.
PO3	2	Showcased practical implementation of Arduino-based automation models.
PO9	3	Enhanced teamwork through collaborative demonstrations and student volunteer activities.
PO10	3	Improved communication and technical presentation skills during outreach sessions.
PO12	2	Encouraged lifelong learning and interest in emerging technologies.

PSO2	2	Introduced automation concepts using sensors and controller-based applications.
PSO3	3	Demonstrated Arduino, sensors, and intelligent automation systems through practical sessions.

SDG MAPPING

SDG	Description	Relevance
SDG 4	Quality Education	Promoted STEM education through interactive learning and hands-on practical sessions.
SDG 7	Affordable and Clean Energy	Introduced energy-efficient technologies using sensors and automation concepts.
SDG 9	Industry, Innovation and Infrastructure	Encouraged innovation through Arduino-based embedded system demonstrations.
SDG 11	Sustainable Cities and Communities	Demonstrated smart automation applications supporting sustainable living.

EVIDENCE


Shirpur-warwade, Maharashtra, India
9v6h+49w, Pitreshwer Colony, Swami Vivekanand Nagar, Shirpur-warwade, Maharashtra 425405, India
Lat 21.360463° Long 74.878008°
Wednesday, 14/10/2026 04:12 PM GMT +05:30
Note : Captured by GPS Map Camera
Google


Shirpur-warwade, Maharashtra, India
9v6h+49w, Pitreshwer Colony, Swami Vivekanand Nagar, Shirpur-warwade, Maharashtra 425405, India
Lat 21.360444° Long 74.877937°
Wednesday, 14/10/2026 03:55 PM GMT +05:30
Note : Captured by GPS Map Camera
Google


Shirpur-warwade, Maharashtra, India
9v5h+v6q, Shirpur, New Ganesh Colony, Shirpur-warwade, Maharashtra 425405, India
Lat 21.360041° Long 74.877983°
Wednesday, 14/10/2026 04:34 PM GMT +05:30
Google


Shirpur-warwade, Maharashtra, India
9v5h+v6q, Shirpur, New Ganesh Colony, Shirpur-warwade, Maharashtra 425405, India
Lat 21.359823° Long 74.878026°
Wednesday, 14/10/2026 04:35 PM GMT +05:30
Google


Shirpur-warwade, Maharashtra, India
9v5h+v6q, Shirpur, New Ganesh Colony, Shirpur-warwade, Maharashtra 425405, India
Lat 21.359878° Long 74.877952°
Wednesday, 14/10/2026 04:36 PM GMT +05:30
Google


SHIRPUR EDUCATION SOCIETY'S
R.C.PATEL ENGLISH MEDIUM
SECONDARY SCHOOL AND JUNIOR COLLEGE
SHIRPUR DIST.DHULE

ACTIVITY HIGHLIGHTS

- One-day technical outreach workshop conducted at R. C. Patel English Medium Secondary School, Shirpur.
- Participation of 250 school students and 4 faculty members.
- Four expert sessions on electronics, microcontrollers, and sensor technologies.
- Hands-on Arduino demonstrations in the Atal Tinkering Laboratory.
- Interactive quiz conducted to reinforce learning.
- Active involvement of Energy Club student volunteers in coordination and technical demonstrations.
- Strengthened institute–school collaboration through STEM outreach.
- Promoted awareness of embedded systems, automation, and energy-efficient technologies among young learners.