

## **TWO-DAY WORKSHOP ON**

### **“ELECTRIC VEHICLES”**

**8<sup>th</sup> & 9<sup>th</sup> JANUARY 2024**

**Organized by: DEPARTMENT OF PHYSICS & ELECTRONICS**

The Department of Physics & Electronics organized a Two day Workshop on “**ELECTRIC VEHICLES**” by the Resource person **Sri L. GOPAL REDDY**, Director & Tech Head, SYTIQHUB EV Solutions Pvt. Ltd, Vijayawada.

#### **OBJECTIVES:**

The Workshop on “Electric Vehicle” aims to facilitate teaching fraternity & aspirants on industry practices in this domain essential for design of next generation EVs. The workshop is to extend and share knowledge in the Electrical & Mechatronics design aspects using software & Hardware integrations for development of smart EV. The course content will be rich inclusive of discussions from industry resource persons to carry forward the training experience for the benefit of students towards their placements or entrepreneurial career choice in the EV industry.

#### **DAY-1**

##### **MORNING SESSION:**

In this session the resource person explained about Introduction elaborating the History & Working of Electric Vehicles, Existing Electric Vehicle technology and their mechanism, Dismantling of the Electric vehicle parts step by step and explanation of each process.

##### **AFTERNOON SESSION:**

In this session the resource person explained EV Technology, Electric vehicle configuration, Safety aspects of various Electric vehicles, Comparison of Electric vs Petrol vs Hybrid Vehicles, Motion and dynamic equations for vehicles, Propulsion requirements for vehicles, Hybrid Electric Vehicles Plug-in, Hybrids Battery Electric Vehicles.

##### **Practical Work**

- ✓ Motor --removing & assembling
- ✓ Controller ---removing & assembling
- ✓ Converter ---removing & assembling

## **DAY-2**

### **MORNING SESSION:**

In this session the resource person explained about Fundamental of EV, Mechanical systems used in EVs , Vehicle hardware - Fundamentals of motor components and its functioning, Vehicle and grid communication and coordination , Electrical machines for EVs and HEVs , Electric vehicle supply equipment (EVSE) standards , Battery and fire safety standards , Installation and EVSE equipment issues.

- Practical Demonstration of EV charging components, motor.

### **AFTERNOON SESSION:**

In this session the resource person explained about Brief history: Batteries and BMS , Circuit design and battery designing skills , Types of Batteries and controllers, Cell spot welding , Configuration of battery and controllers , EV Battery grading , charging and discharging mechanism and sorting , Charging and Discharging Machine and their working , Fundamentals of Regenerative Braking , Motors , Steering , Relation between Power, Torque, RPM & CC, Analyze and simulate power converters ,Fuel cell and super capacitors , Electric vehicle charger , Electric vehicle charger technology, Advanced battery management system(BMS) integration, motors and vehicle controllers, Battery pack enclosure installation , Voltage Control of DC-AC Inverters Using PWM ,Control Systems for the EVs , Fault detection and retrieving in the vehicle , Setting up all the components i.e. installation of battery, controllers, BMS, mechanical parts.

### **PRACTICAL WORK:**

- ✓ Battery ---removing & assembling
- ✓ Thermal analysis of Li-ion cells
- ✓ Total body wiring, horn, display, lights & signal controlling and power checking.

By completing the EV, students will be introduced to electric vehicles, their importance and identify various components of an EV.

- Get introduced to electric vehicles, understand how EVs are different from ICE vehicles and identify various parts of an electric vehicle.
- Learn the fundamentals of Lithium-ion cells.

- Analyze EVs based on power sources and calculate range of an EV.
- Perform motor power and torque calculations to select a motor to build their own EV.
- Learn the basics of converting any petrol 2-wheeler into an electric vehicle.

In this Workshop, Department Head Mr. R. Uday Kumar, Mr. A.H.D. PRAKASH, Lecturer in Physics Mrs. P.Mounica, Lecturer in Physics, Ms. B.Sruthi, Lecturer in Electronics, Ms.G.Hemalatha, Lecturer in Electronics, Ms.I.Bhavani, Lecturer in Electronics and also 60students from I B.Sc.(MECS), II.B.Sc(MECS), III.B.Sc(MECS), III B.Sc (IOT) have participated the programme.

# PHOTO GALLERY

## Inaugural Session:



**Lighting Lamp by Our Beloved Principal Dr.V.Narayanarao Garu**



**Resource Person Sri L. Gopal Reddy,  
Director & Tech Head  
Sytiquhub EV Solutions Pvt. Ltd, Vijayawada.**



**Theme of the Workshop by  
Sri R. Uday Kumar, Convenor  
HOD, Dept. of Physics & Electronics**

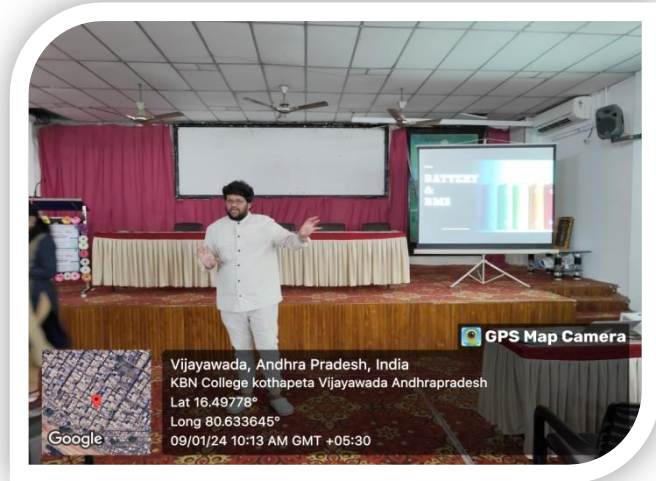


**Student Participants at the Programme**

# TECHNICAL/PRACTICALSESSIONS-DAY-1(8.1.2024)



## TECHNICAL/PRACTICALSESSIONS-DAY-2(9.1.2024)



## VALEDICTORY SESSION



## Feedback from the Student Participants



**Certificate Presentation by the Resource Person & the Principal**



# సాక్షి

లక్ష్యం.. పర్యావరణ పరిరక్షణ



**వన్‌టౌన్(విజయవాడపశ్చిమ):** పర్యావరణ పరిరక్షణ అందరి లక్ష్యం కావాలని స్థిక్ హాబ్ ఈవీ సొల్యూషన్స్ డైరెక్టర్ లక్ష్మిరెడ్డి గోపాల్‌రెడ్డి అన్నారు. కాకరపర్తి భావనారాయణ కళాశాల ఎలక్ట్రానిక్స్ విభాగం ఆధ్వర్యంలో ఎలక్ట్రికల్ వాహనాల పరిశ్రమలోని వివిధ పురోగతులు, సవాళ్లు అంశంపై నిర్వహించిన వర్క్‌షాప్ బుధవారం ముగిసింది. ముఖ్యఅతిథిగా హాజరైన లక్ష్మిరెడ్డి గోపాల్‌రెడ్డి మాట్లాడుతూ పర్యావరణ పరిరక్షణకు సంప్రదాయేతర ఇంధన వనరుల ఆవశ్యకతను అందరూ గుర్తించాలన్నారు. ఆ క్రమంలో ఎలక్ట్రికల్ వాహనాల పరిశ్రమ ఇటీవల విశేషమైన పురోగతిని సాధించిందన్నారు. రానున్న కాలంలో దాదాపుగా వంద శాతం ఎలక్ట్రికల్ వాహనాలే అందుబాటులోకి రానున్నాయన్నారు. కళాశాల ప్రిన్సిపాల్ డాక్టర్ పి. నారాయణరావు, విభాగాధిపతి ఆర్. ఉదయ్‌కుమార్, అధ్యాపకులు పాల్గొన్నారు.

11/01/2024 | Vijayawada(Vijayawada West) |  
Page : 11  
Source : <https://epaper.sakshi.com/>

## 'పర్యావరణ పరిరక్షణకు పాటుపడాలి'


**ప్రజాశక్తి-వన్‌టౌన్:** పర్యావరణ పరిరక్షణకు అందరూ పాటుపడాలని స్థిక్ హాబ్ ఈవీ సొల్యూషన్స్ డైరెక్టర్ లక్ష్మిరెడ్డి గోపాల్‌రెడ్డి అన్నారు. కాకరపర్తి భావనారాయణ కళాశాల ఎలక్ట్రానిక్స్ విభాగం ఆధ్వర్యంలో ఎలక్ట్రికల్ వాహనాల పరిశ్రమలోని వివిధ పురోగతులు, సవాళ్లు అంశంపై నిర్వహించిన వర్క్‌షాప్ బుధవారం ముగిసింది. ఈ సందర్భంగా ముఖ్యఅతిథిగా హాజరైన లక్ష్మిరెడ్డి గోపాల్‌రెడ్డి మాట్లాడుతూ పర్యావరణ పరిరక్షణకు సంప్రదాయేతర ఇంధన వనరుల ఆవశ్యకతను అందరూ గుర్తించాలన్నారు. ఈ కార్యక్రమంలో కళాశాల ప్రిన్సిపాల్ డాక్టర్ పి. నారాయణరావు, విభాగాధిపతి ఆర్. ఉదయ్‌కుమార్ పాల్గొన్నారు.

# BROCHURE

ISO 9001-2015 CERTIFIED  
NAAC 'A' GRADE CYCLE 3  
**KAKARAPARTI BHAVANARAYANA COLLEGE**  
(Sponsored by S.K.P.V.V. Hindu High School's Committee), (AUTONOMOUS)  
Kothapeta, Vijayawada - 520 001.

INSTITUTIONS INNOVATION COUNCIL  
UNIVERSITY OF PASTOR THEOLOGICAL  
INDIA'S INNOVATION CELL  
(GOVT. OF INDIA)

Two-Day workshop on  
**"ELECTRIC VEHICLES (EV)"**  
8<sup>th</sup>-9<sup>th</sup> January, 2024 @ 9.30 A.M.



Resource Person  
**Sri . Gopal Reddy Lakki Reddy**  
Director & Tech Head,  
SYTIQHUB EV Solutions PVT. LTD

Organized by  
**Dept. of Physics & Electronics**

## About the College

Kakaraparti Bhavanarayana College is a vivacious outcome of a century old renowned charitable organization, S.K.P.V.V. Hindu High Schools Society with "Tejaswina Vadheethamasthu" as its motto. Since its inception in 1965, it marked an epoch in innovative education, in an academically and economically impoverished area. The college with heightened social imagination and ardent zeal, shone like a lodestar led innumerable students towards the goal of an illustrious life. The ever vibrant college grew by leaps and bounds and has evolved with times. It has been adorned with the Autonomous status by the UGC in the year 2010, and received "Best Laboratory", "Best Academic Achievement", "Best Library", "Best NSS Unit" awards. The College has never rested on its laurels and has been relentlessly raising the bar. It is certified with ISO 9001-2015 which has been given for Quality Management Standard and accorded with CPE in 2016 by UGC. It has been reaccredited with "A" Grade by NAAC in 2019.

## About Department

The Department of Physics, KBN College, Vijayawada was established in the 1965. It has a great reputation and distinction of producing many scholars, Administrators, Scientists, Physicists, mathematicians, chemists and other illustrious personalities in various fields. The Department is having the pride possession of some rare and exclusive instruments. One such instrument is Astronomical Telescope to observe celestial bodies. Another notable instrument is a working model of the Super Heterodyne Radio receiver which is used to have a clear view of the electronic components. The Department has been declared as a Model Department by the Andhra University. The year 2003 happens to be a landmark in the history department when the course B.Sc Electronics was started. The students of Electronics exhibit their prowess in many live projects every year especially during the National Science Day celebrations.

## About the workshop

An electric vehicle, also called an EV, uses one or more electric motors or traction motors for propulsion. This program is conceptualized to impart industrial work flow to students on how electric automobile components function, how vehicles are conceptualized, designed and manufactured. This program provides a platform for the students which supports their engineering thoughts and gives them a pragmatic experience. The workshop aims that the participant is able to learn multiple vehicle systems and design skills, including system design and motor design skills, covering various aspects of EV design.

## Themes

- ▶ Introduction and History to EV.
- ▶ Dismantling of the Electric vehicle parts step by step and explanation of each process.
- ▶ Introduction about Automobiles.
- ▶ Latest Technologies in Automobiles.
- ▶ Fundamental of EV.
- ▶ EV Battery and Controllers Mechanism
- ▶ Battery Assembly and Charger
- ▶ Further aspects of EV in future and industries

## Sub Themes

- ▶ 1. Motor ---removing & assembling
- ▶ 2. Controller ---removing & assembling
- ▶ 3. Converter ---removing & assembling
- ▶ 4. Battery---removing & assembling
- ▶ 5. Thermal analysis of Li-ion cells
- ▶ 6. Total body wiring, horn, display, lights & signal controlling and power checking



## CHIEF PATRON

**Sri T. Srinivasu,**

Secretary & Correspondent, K.B.N. College (Autonomous)

## PATRON

**Dr. V. Narayana Rao,** Principal, K.B.N. College (Autonomous)

## Convenor

**Sri R. Uday Kumar,** Incharge, Dept. of Electronics

## ADVISORY COMMITTEE

- Sri P.L. Ramesh,** Vice-Principal, K.B.N. College (Autonomous)
- Dr. M. Venkateswara Rao,** Vice-Principal, K.B.N. College (Autonomous)
- Dr. G. Krishnaveni,** Head, Dept. of Chemistry & IQAC Co-ordinator
- Sri P. Ravindra,** Head, Dept. of Computer Science, K.B.N. College (Autonomous)

## ORGANISING COMMITTEE

- Sri Ch. Nagabhushanam,** HOD Dept. of Physics & Electronics
- Ms. B. Sruthi**
- Ms. G. Hemalatha**
- Ms. I. Bhavani**
- Mrs. P. Mounica**
- Sri A.H.D. Prakash**

For further Details Contact

**Sri R. Uday Kumar,** Ph: 9489543772  
**Sri A.H.D. Prakash,** Ph: 7075278688

# INVITATION



ISO 9001:2015

NAAC 'A' GRADE CYCLE 3

**KAKRAPARTI BHAVANARAYANA COLLEGE**

Kothapet, Vijayawada - 520001,

(AUTONOMOUS)

(Sponsored by S.K.P.V.V. Hindu High Schools' Committee)

**SKPVV**  
INSTITUTIONS  
Educating the Community  
since 1907

## *Invitation*

You are cordially invited to the Two Day Workshop on  
**“ELECTRIC VEHICLES (EV)”**

**8<sup>th</sup> & 9<sup>th</sup> January, 2024 @ 9.30 A.M.**

**Venue: Reading Room**

**Resource Person**

**Sri . Gopal Reddy Lakki Reddy**

**Director & Tech Head,**

**SYTIQHUB EV Solutions PVT. LTD**

**Presided by**

**Dr. V. NARAYANA RAO**

**Principal, K.B.N. College**

**Organized by**

**Department of Physics & Electronics**

# CERTIFICATE



ISO 9001-2015 CERTIFIED

NAAC 'A' GRADE CYCLE 3

## KAKARAPARTI BHAVANARAYANA COLLEGE

(AUTONOMOUS)

Sponsored by S.K.P.V.V. Hindu High School's Committee, Kothapeta, Vijayawada - 520 001.



Two-Day Workshop on

### "ELECTRIC VEHICLES (EV)"

Certificate of Participation

This is to certify that Mr./Ms. \_\_\_\_\_

of \_\_\_\_\_ K.B.N. College has participated in **Two-Day Workshop on "ELECTRIC VEHICLES (EV)"**

-A Skill Development Programme, organized by **Department of Physics & Electronics, K.B.N. College** in association with **Sytiqhub EV Solutions Pvt. Ltd. Vijayawada**, on **8<sup>th</sup> & 9<sup>th</sup> January, 2024**.

Convenor

Director & Tech Head

Sytiqhub Ev Solutions PVT.LTD

Principal

# **STUDENT ENROLLMENT SHEET**

**Around 60 students participated**

## **I B.SC (ELECTRONICS)**

1. B.Triveni
2. G.Bhavya
3. V.Roja Naga Susmitha
4. N.SindhuPriya
5. G.Sasi Harsha
6. V.Dhanush
7. K.Shanmukha Naga DurgaCharan
8. M.Leela Prakash
9. S.Kusuma
10. A.Devadasu
11. SK.Akbar
12. S.Lokesh
13. D.Pavan Kumar
14. D.Leela Prasad Naidu
15. D.Triveni

## **II B.Sc MECS**

1. Ch.KanakaBhavani
2. B.Tejaventkat
3. MD.AbdulKhayyum
4. R.Sudhakar
5. G.Bujji
6. N.Gopichand
7. G.Vijaykumar
8. K.Dileepkumar
9. S.Jaspalsingh
10. T.Kripalsingh
11. J.Bala Sai

## **III B.Sc .IOT**

1. S.Shiva Shankar reddy
2. G.Kumar Vardhan
3. N.Suvartharaju
4. P.Ganapathi
5. N.Durga Prasad
6. J.Hanoknayak

### III B.Sc (MECS)

1. I.Bhanu Prakash
2. T.Karthik
3. B.BhargavMaruthi
4. K.Vishal Kumar
5. V.V.S.Narayana
6. S.Sai
7. L.Lakshmi Priyanka
8. P.Fahamiya
9. S.SyamPriya
10. G.Poojitha
11. M.Ravalika
12. B.Eswari Usha
13. P.Sajid Khan
14. P.Sai Rahul
15. G.Raghava
16. P.Likhith
17. A.Durga Prasad
18. V.Kanaka Kumar
19. M.Gangadhar
20. M.Ijak
21. G.Hemanth Satya Krishna Kumar
22. R.BinduMadhuri
23. P.LeelaJyothi
24. S.SiriSadvika
25. K.AmruthaNagavalli
26. Meghamala.Ch
27. T.Nivas
28. S.V.Tulasi

# KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

(Sponsored by S.K.P.V.V. Hindu High Schools' Committee)

Kothapeta, Vijayawada - 520001

Affiliated to Krishna University, Machilipatnam

Accredited with 'A' Grade in Cycle 3 by NAAC



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## DEPARTMENT OF PHYSICS & ELECTRONICS

Date: 2-1-2024

### STUDENT NOTICE

#### **WORKSHOP ON "ELECTRIC VEHICLES"**

A Two-day workshop on "ELECTRIC VEHICLES " will be organized by the Department of Physics & Electronics in association with SYTIQHUB EV Solutions Pvt. Ltd, Vijayawada on 8<sup>th</sup> & 9<sup>th</sup> January 2024 at Reading room from 9:30 am to 4:00 pm for Electronics & IOT students. Only 60 Seats are available, Students have to pre-register it at the Department of Undersigned till 6<sup>th</sup> January 2024. Seats will be filled on first come first Serve basis.

#### **NOTE:**

1. Students have to report to the venue at 9:00 AM.
2. Certificate will be given to only those students who will attend the complete workshop.



HEAD, DEPT. OF PHYSICS & ELECTRONICS