

**KTU -Faculty Development Program  
on E Mobility**

26th June - 1st July 2019

**REGISTRATION FORM**

Name :  
Gender :  
D.O.B & Age :  
Designation:  
Institution :  
Qualification :  
Experience in Years :  
Address for Communication. :

Mobile No :  
E-mail ID:  
Preferred Cuisine : Veg./Non-Veg  
Accommodation Required(Payment Basis): Yes/No

**Sponsorship Certificate**

Mr/Mrs./  
Dr \_\_\_\_\_  
is an employee of our Institute/College and is hereby sponsored for attending the KTU-faculty development program on "E-Mobility" from 26th June to 2nd July 2019 at SCT College of Engineering Trivandrum. He/She will be permitted to attend the course if selected.

Place: \_\_\_\_\_ Signature of  
Date: \_\_\_\_\_ the sponsoring authority with seal

**Patrons:**

**Sri. K. R. Jyothilal IAS**, Principal Secretary  
(Transport) Govt. of Kerala  
**Prof(Dr.) K. Prabhakaran Nair**, Principal,  
SCTCE

**Coordinators:**

**Dr. Boby Philip**,  
Associate Professor in Electrical & Electronics  
Engg.  
**Dr. Anilkumar S. H.**,  
Professor in Mechanical Engg.

**Contact details:**

Mobile Numbers: 9447340870/  
9495741482  
Email: boby@sctce.ac.in  
College website: <https://www.sctce.ac.in/>

**Important dates:**

Last date for registration: **21<sup>st</sup> June 2019**  
Confirmation by selected participants: **24<sup>th</sup>  
June 2019**

**College Location** (Plus code for Google Map):  
FXCH+6Q Thiruvananthapuram, Kerala



APJ Abdul Kalam Technological  
University (*Kerala Technological  
University*)  
sponsored

*Interdisciplinary*  
**Faculty Development Program  
on  
E- Mobility**

**26<sup>th</sup> June to 1<sup>st</sup> July 2019**

Organised by  
Department of Mechanical Engg. &  
Division of Electrical Engg.

SCT College of Engineering,  
Pappanamcode, Thiruvananthapuram  
695018



**About the course:**

United Nations' Environment Program(UNEP) estimates that each year 2-4 million premature deaths occur due to outdoor pollution. Road transport which extensively uses fossil fuels, is a major contributor to local air pollution and smog.

World energy council in its 2017 report says that transport systems have significant impact on environment and account for 20 to 25% world energy consumption and carbon dioxide emission. Quest for low carbon systems and cleaner have pushed the transportation electrification to greater levels.

E-mobility or Electric – Mobility refers to transportation electrification and allied technological transformations and amalgamations.

**Course Objective:**

The course is designed to impart training to engineering college faculty on different aspects of E-mobility. The course intends to make faculty aware of major advancements and possibilities of transportation electrification such that they can motivate students to find environmentally safe and economically viable transportation solutions suiting Indian conditions.

**Areas covered:**

- Transformation from IC engine driven vehicles to hybrid and electric vehicles
- Power Electronics and Drives for E-Mobility
- Battery management systems of E Vehicles.
- Charging Infrastructure for E-vehicles
- Electric, Hybrid Electric and Plug-in Hybrid Electric Vehicle System Architectures
- Modelling Simulation and Control of EVs
- Connected Cars

**Resource Persons:**

Experts/ researchers from industries/CDAC-Trivandrum /ANERT and engineering college faculty will engage classes.

**About the organising institution:**

Sree Chitra Thirunal College of Engineering was established in 1995 under Department of Transport Government of Kerala with it being the first college in south India to offer a BTech program in Automobile Engineering. It also became one of the seven colleges in Kerala State to have come under the first phase of Technical Education Quality Improvement Program(TEQIP) of Government of India.

The college has the distinction of being one of the few colleges in Kerala to get accredited in early 2000's. Currently, four BTech programs are NBA accredited. The college has conducted training in Automobile Engineering to persons from Industry. At present Mahindra Pride School in collaboration with Mechanical Engineering Department conducts skill development courses in the college campus. TATA ELXSI had in 2016 chosen this institution from a group institutions from entire India for imparting training(State of the art Automobile Technologies) within the college campus for enabling new graduates to join the job as full fledged engineers on completion of their studies.

This Kerala Technological University sponsored faculty development program is being organised jointly by Division of Electrical Engg. and Department of Mechanical Engineering of SCT College of Engineering.

**How to apply:**

Advance registration for the course can be done through the link:

<http://bit.do/eTKko>

The hard copy registration application form in given format along with sponsorship certificate should be produced when the selected participants come for attending the program. Scanned copies of the above documents should also be submitted to the contact e-mail address indicated while applying for the course online.

**Who can apply:**

This being an interdisciplinary course, faculty from AICTE approved Engineering Colleges from all disciplines can apply. Number of participants is limited to 30.

**Registration fee:**

Registration is free for faculty from KTU affiliated engineering colleges. Others will have to pay a fee of Rs500.



APJ Abdul Kalam Technological University  
(KTU)  
Faculty Development Programme  
on  
E-Mobility  
16<sup>th</sup> June - 17<sup>th</sup> July 2019  
Department of Mechanical Engineering  
Faculty of Engineering  
Sree Narayana College of Engineering  
Punalur, Kerala  
Inauguration by  
**Sri. K. P. Mohilal I A**  
Principal Secretary, Govt. of Kerala





**KTU Sponsored FDP on “E-Mobility”@SCT College of Engg, TVM.  
26<sup>th</sup> June -1<sup>st</sup> July, 2019  
PROGRAMME SCHEDULE**

<b>Date</b>	<b>Session 1</b>		<b>Session 2</b>		<b>Session 3</b>		<b>Session 4</b>
<b>26/06/2019 Wednesday</b>	<b><i>Role of Utilities in E-Mobility</i></b>	<b>T E A  B R E A K  L U N C H  B R E A K</b>	<b><i>Efficient Motors for E-Mobility</i></b>	<b>L U N C H  B R E A K</b>	<b><i>Transformation to E-Mobility-I</i></b>	<b>T E A  B R E A K</b>	<b><i>Transformation to E-Mobility-II</i></b>
	<i>Er.K. R.Venugopal, DyCE,KSEB(Retd.)/Formerly Senior Manager Dubai Electricity and Water Authority</i>		<i>Er.K. R.Venugopal, DyCE,KSEB(Retd.)/Formerly Senior Manager Dubai Electricity and Water Authority</i>		<i>Prof. V. K. Chitrakumar, SCT</i>		<i>Prof. V. K. Chitrakumar, SCT</i>
<b>27/06/2019 Thursday</b>	<b><i>Renweable Energy for E-Vehicle Charging-I</i></b>		<b><i>Renewable Energy for E-Vehicle Charging-II</i></b>		<b><i>AI Applications in E-Mobility-I</i></b>		<b><i>AI-Applications in E-Mobility-II</i></b>
	<i>Er. Ajith Gopi, ANERT</i>		<i>Er. Ajith Gopi, ANERT</i>		<i>Dr. Indulal S.,GEC Idukki</i>		<i>Dr. Indulal S.,GEC Idukki</i>
<b>28/06/2019 Friday</b>	<b><i>Power Electronics and Drives for E-Mobility-I</i></b>		<b><i>Power Electronics and Drives for E-Mobility-II</i></b>		<b><i>E-Vehicle Technologies/Fuel Cell Electric Vehicle-I</i></b>		<b><i>E-Vehicle Technologies/Fuel Cell Electric Vehicle-II</i></b>
	<i>Dr. Dinesh Gopinath, CET</i>		<i>Dr. Dinesh Gopinath, CET</i>		<i>Dr. Prakash U., SCT</i>		<i>Dr. Prakash U., SCT</i>
<b>29/06/2019 Saturday</b>	<b><i>Challenges in Passenger Car Electrification</i></b>		<b><i>Power Electronics and Drives for E-Mobility-III</i></b>		<b><i>AI Applications in E-Mobility-III</i></b>		<b><i>AI Applications in E-Mobility-IV</i></b>
	<i>Er. Anurag R., Tata Elxsi</i>		<i>Dr. Z.V.Lakaparampil, (Former National Mobility Mission Technical Advisory Board Member)  Formerly Dy Director CDAC</i>		<i>Dr. Archana R.,FISAT, Angamaly</i>		<i>Dr.Archana R., FISAT, Angamaly</i>
<b>01/07/2019 Monday</b>	<b><i>Battery Systems and Charging Infrastructure-I</i></b>	<b><i>Battery Systems and Charging Infrastructure-II</i></b>	<b><i>E-Mobility and Environment-I</i></b>	<b><i>E-Mobility and Environment-II</i></b>			
	<i>Dr.Chandrasekar V,CDAC</i>	<i>Dr.Chandrasekar V,CDAC</i>	<i>Prof. V.K Damodaran,  Chairman, Centre for Environment(Formerly S&amp;TE Dept Director/ NIT-C Professor)</i>	<i>Prof. V.K Damodaran,  Chairman, Centre for Environment(Formerly S&amp;TE Dept Director/ NIT-C Professor)</i>			

\*On all days sessions are from 9:30 am to 4:30 pm; lunch break : 12:30 to 1:30pm

\*Inaugural Session at 9:30 am on 26<sup>th</sup> June 2019 and Valedictory at 4:30pm on 1<sup>st</sup> July 2019

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FACULTY DEVELOPMENT PROGRAMME (FDP)

PROFORMA FOR SENDING PROPOSALS

(FOR AFFILIATED COLLEGES, PROFESSIONAL BODIES & OTHER AGENCIES)

Note: Before filling up the proforma, please read carefully the rules and conditions

(To be filled in by the course coordinator)

1	Name and Address of the Host Institution	SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING, PAPPANAMCODE P.O, THIRUVANANTHAPURAM - 695018
2	Title of the programme (This should convey the content & main thrust of the programme)	E-Mobility
3	Name, Designation and Address of the course coordinator (s) (One coordinator preferred, more than two not permitted)	1. <b>Dr. S.H Anilkumar</b> , Professor in Mechanical Engineering, Sree ChitraThirunal College of Engineering 2. <b>Dr. Bobby Philip</b> Associate Professor, Electrical engg., Sree Chitra Thirunal College of Engineering
4	Telephone , Mobile and Email of the coordinator(s)	0471 2490772, 9447340870, <a href="mailto:shakumar69@gmail.com">shakumar69@gmail.com</a> 9495741482, <a href="mailto:write2bobby@gmail.com">write2bobby@gmail.com</a>
5	Highest Qualification of the coordinator(s)	PhD (NITC), PhD (IIT Kharagpur)
6	Area of specialization	1. Heat Transfer- Mechanical Engg., 2. Control systems- Electrical Engg.
7	Teaching Experience (Years)	22yrs, 17yrs
8	Industry Experience (Years)	Nil, 2yrs
9	Number of papers published	5, 5
10	Number of Short Term Courses attended	12, 10
11	Number of Short Term Courses conducted earlier	3, 1
12	Specilisation area for which the proposal is made (Please select one)	<b>Civil / Mechanical / Electrical and Electronics / Electronics / Computer science / Basic Science</b>

		Others ( Please Specify) <b>Inter disciplinary</b>
13	The course is basically (Please select one)	1. Subject updating course <b>2. Emerging area</b> 3. Pedagogy 4. Others (Specify)
14	Whether the proposal covers any of the categories indicated (Select one)	<b>1. Industry Involvement</b> <b>2. Emerging Area</b> 3. Education Technology 4. Others (Specify)
15	Duration of the programme (Select one)	<b>1. Five working days</b> 2. Three working days
16	Proposed dates for the programme ( Specify dates, which may be changed later, if required)	<b>27<sup>th</sup> May to 31<sup>st</sup> May 2019</b>
<b>COURSE DETAILS</b>		
1	Significance & Objective of the programme ( List one or two major objectives)	Impart training to Engineering college teachers on emerging area of E-mobility.
2	Course Content/Coverage (List 5 to 8 major topics with proposed duration of coverage in hours for each topic)	1. Electric mobility- transformation from IC engine driven vehicles to hybrid and electric vehicles 2. Power Electronics and Drives 3. Battery management systems 4. Charging Infrastructure for E-vehicles 5. Electric, Hybrid Electric and Plug-in Hybrid Electric Vehicle System Architectures 6. Modelling Simulation and Control of EVs
3	Course Schedule	1. Total working days = five 2. Lecture = 21 hrs 3. Lab/Practicals= 3 hrs 4. Industry visits =6 hrs 5. Others (Specify) = hrs <hr/> Total = 30 hrs
4	Details of special equipments or laboratory facilities available for the course.	Central Computing Facility

5	Collaboration with industry/ other institutions/ departments (indicate name of the organization, nature of collaboration and experts involved)	C-DAC, KAL E-auto facility (industrial visits)		
6	Details of course faculty (List details of faculty )			
	<i>Name and Designation</i>	<i>Institute</i>	<i>Highest Qualification</i>	<i>Specialisation</i>
	Dr. Z. V. Lakaparampil	Amal Jyothi College of Engineering	PhD	Power Electronics and Drives
	Dr. Dinesh Gopinath	GEC Idukki	PhD	Power Electronics, Switched Mode Power Conversion
	Er. Ajith Gopi	ANERT	M Tech	Power Systems
	Dr. Archana R.	Federal Institute of Science and Technology Angamally	PhD	System Modelling Control Systems
	Er. Amal S.	CDAC-T	BTech	Electrical and Electronics, Modelling and Control of EVs
	Prof. Chitrakumar V K	SCT College of Engineering	MTech	Thermal Engineering, Electric and Hybrid Vehicles
7	Facilities available (Tick the relevant items)	1 <b>Smart class rooms</b> 2 <b>Video conferencing</b> 3 Live streaming facility 4 Others (Specify)		
<b>Budget</b>				
No of days = five		No of participants = 40		
<b>Sl:No</b>	<b>Particulars</b>	<b>Amount</b>		
1	Honorarium to faculty/ External experts	24000		
2	TA to external experts	5000		
3	Accommodation to external experts	5000		
3	Local conveyance of external experts	1000		

4	Honorarium to centre coordinator	5000
5	Honorarium to course coordinators	2x 5000=10000
6	Honorarium to technical assistants for venue arrangement, purchase assistance, data entry etc. (Please specify the number of persons employed for these activities)	2x1000x5=10000
7	Cost of training material (Soft Copy / Hard copy / text book etc, Please specify the cost per participant)	40000
8	Cost of stationeries, consumables, certificate printing, report printing, photography etc.	15000
9	Food& refreshments to external experts / Guests	4000
10	Food& refreshments to participants	50000
11	Any other items (Please specify)	2000
12	Miscellaneous	5000
<b>TOTAL</b>		<b>161000/-</b>
Expected cost per participant		Rs 4025/-

We certify that the details given above are correct to the best of my knowledge and belief and I will organize the programme satisfactorily if approved. I also promise that I will abide by the terms and conditions of the University for conducting the Faculty Development Programmes and submit the final report within 15 days of the programme.

1. Dr. S H Anilkumar

2. Dr. Boby Philip

Professor in Mech. Engg.

Associate Professor in Electrical Engg.

Dated signature of the coordinators with name and designation

I agree to provide all necessary assistance and facilities of the institute for the conduct of the above programme.

Dated signature of the Head of the institution.



Submitted

We are planning to apply for conducting a faculty development programme on “**E-Mobility**” from **18<sup>th</sup> June** to **22<sup>nd</sup> June 2019**. Kindly forward the application for five days faculty development programme.

1. Dr. Bobby Philip,

Associate Professor,

Electrical Engg.,

2. Dr. S H Anilkumar

Professor,

Mechanical Engg.,