

Department of Mechanical Engineering SAEINDIA SKIT COLLEGIATE CLUB

Two days Webinar on “Design and development of E- Vehicles using Ansys”

- 1. Objective:** To understand the basic structural configuration of E vehicle with the functionality of components using ANSYS.

Outcome: After attending the webinar participants will get an understanding of the four pillars which form the basis electrification of electric vehicle namely Battery, Traction Motor, Power Electronics and Systems Engineering and how ANSYS helps in different aspects like reducing battery cost and increasing life, eliminating battery catastrophic failure modes, making the traction motor highly efficient, minimizing reliance on rare earth elements, meeting EMI–EMC regulations, and developing fuel cells

2. Event brochure



CERTIFIED CHANNEL PARTNER

Design & Development of Electric Vehicle using Ansys

Strong customer demand and governmental push for higher mileage, greener vehicles means that car and truck makers have to develop and deploy electric vehicle and hybrid technology. Ansys automotive simulation tools and best practices of integrated Multiphysics, multi-scale platform model hybrid technology aspects such as batteries, fuel cells, motors, power electronics, and controllers, from end-to-end, using in-depth models/sub-models, with precision and accuracy is helping vehicle manufacturers make rapid advances in hybrid technology. SAE INDIA SKIT COLLEGIATE CLUB is organizing a webinar on “Electric Vehicle” with industrial partner ARK Infosolutions, the Elite channel partner of ANSYS.

Who should attend?

- Academia, Industry

What to expect?

The participants will get an understanding of the four pillars which form the basis electrification of electric vehicle namely Battery, Traction Motor, Power Electronics and Systems Engineering and how ANSYS helps in different aspects like reducing battery cost and increasing life, eliminating battery catastrophic failure modes, making the traction motor highly efficient, minimizing reliance on rare earth elements, meeting EMI–EMC regulations, and developing fuel cells.

Organizing Team:
Dr. Ashish Nayyar
Mr. Yogesh Sharma
Ms. Monika Khurana

Topics:

- Battery Cell Electro Thermal Coupled (ETC) Analysis
- Design and analysis of Electric Motor
- Power Device Characterization (IGBT)
- Design of Inverter
- Tracking of Driver reference velocity
- Calculated vehicle vs Battery SOC

Electrification
ANSYS provides the most comprehensive multiphysics simulation & software platform for automotive electrification

Addressing Four pillars of Electrification using ANSYS Integrated Simulation Environment:

- Battery:** Thermal, Abuse, Life, Electrochemistry, BMS
- Traction Motor:** Magnetic Stating, Cooling, Durability, NVH
- Power Electronics:** Inverter, Converter, Chargers, FEM-FEM, Thermal reliability
- Systems Engineering:** Function Safety, System Integration, RMI

17th & 18th Sept 2021
Time: 11 am-1 pm & 2.30 pm - 4.30 pm

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STRUCTURES FLUIDS ELECTRONICS SEMICONDUCTOR OPTICS & VR MATERIALS SYSTEMS 3D DESIGN

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Contact: channel.success@arkinfo.in

Swami Keshvanand Institute of Technology,
Management & Gramothan, Jaipur

College Code REAP : 1031, CMAT : 302

3. Schedule of the event

Date: 17-18 September, 2021

Time: 1st session 11:00AM – 1:00PM IST

2nd session 2.30 PM-4.30 PM

Venue: Online via Webex

4. List of invited guest/speakers (along with consent of invited guest/speakers)

Keynote Speaker: Mr. Kartikesh Kumar Jha

Profile: Application Engineer in ARK Infosolutions Pvt Ltd. (elite channel partner of Ansys)

Mr. Kartikesh received the B.E degree (First Class, 2012), M.E degree (First Class, 2015) and pursuing Ph.D. all in Electrical Engineering, from Dr. T. Thimmaiah Institute of Technology, Birla Institute of Technology Mesra, National Institute of Technology Patna, respectively. He joined as an Assistant Professor at Central university of Jharkhand Ranchi in 2016. He Joined as a Junior Research fellow in 2017 for DST-SERB Sponsored Project Entitled “Design and Development of a Low-Cost BLDC Motor Drive Solar PV Based Irrigation System” In the Department of Electrical Engineering at NIT Patna. His interests are in power electronics, control systems, electrical machines, and electric vehicle simulation design. Presently he is working as an Application Engineer at ARK Infosolutions Pvt Ltd. He is a Ansys Certified Engineer. He works in the Low frequency and Electrification. He has received many certificates of appreciation as an expert speaker during webinars organized by many reputed Universities on the topic of Electric Vehicle. He is also a co-founder of Bihar startup program named Navomesh Stavva India Pvt. Ltd, Incubation center at Indian Institute of Technology Patna.

5. List of registered participants with details of affiliating institute (for SKITians, list with enrollment RTU Roll No., Semester, branch etc.) along with their contact details (SKIT JAIPUR students and faculty)

Department of Mechanical Engineering

2 day workshop on Design and development of E- Vehicles using Ansys

S.No	Prefix	Name of participant	Designation	Name of Institute/ Company	Email id	Mobile Number	University Roll No. (In case if SKIT student)
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47	Mr.	Himanshu Kushwah	Student	SKIT	hk9588895518@gmail.com	9588895518	18ESKME047

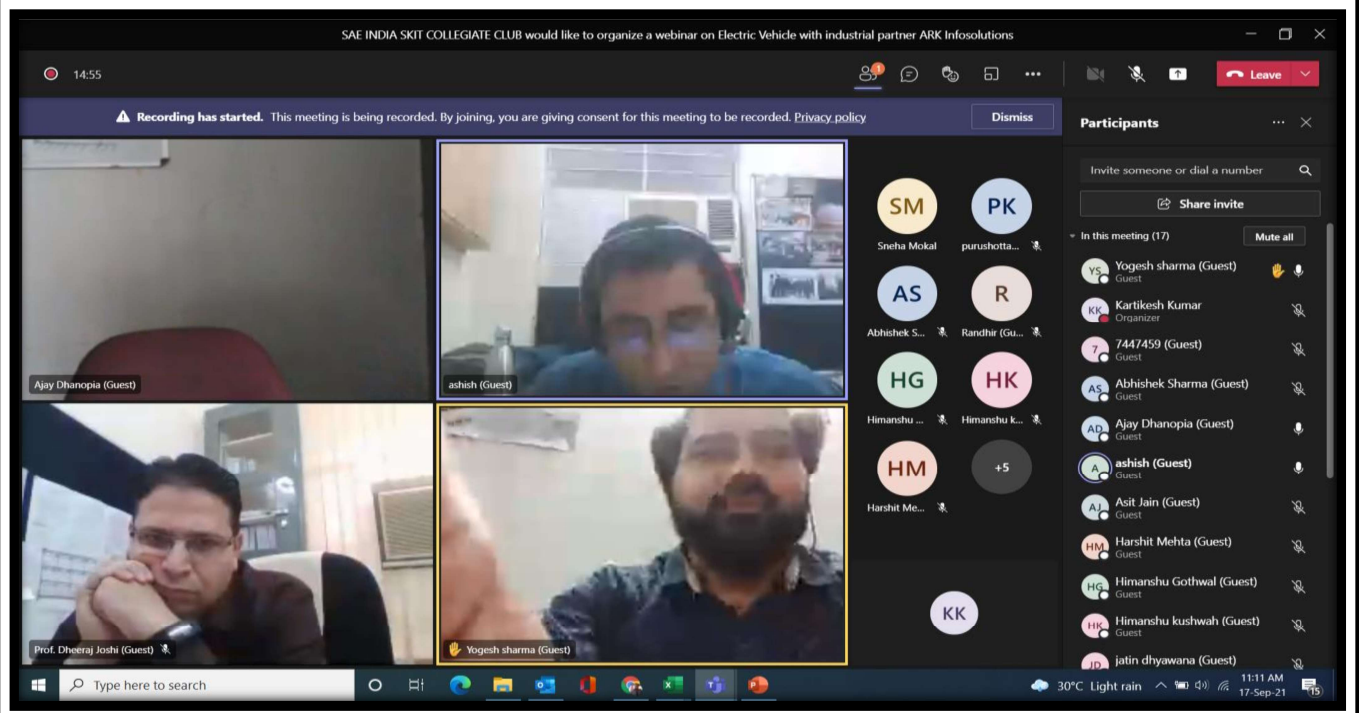
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55	Mr.	Divik Mathur	Student	SKIT	divikmathur1312@gmail.com	8107381263	
56	Mr.	Akshay Mewara	Student	SKIT	akshaymewara7@gmail.com	6377678738	18ESKME011
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6. Attendance record of participants for the duration of event

Details/List of teacher participants:-

Department of Mechanical Engineering						
2 day workshop on Design and development of E- Vehicles using Ansys						
S.No.	Prefix	Name of participant	Designation	Name of Institute/ Company	Email id	Mobile Number
1	Ms.	Monika khurana	Assistant Professor	Swami keshvanand Institute of technology, management and	monika.khurana@skit.ac.in	9887775699
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12	Mr.	Nitin Goyal	Assistant Professor	SKIT	Nitingoyal089@gmail.com	9024578382
13	Mr.	Ajay Dhanopia	Associate Professor	SKIT	ajay.dhanopia@skit.ac.in	9928909235
14	Mr.	Mahipal Bukya	Assistant Professor	Manipal University Jaipur	mahipalbukya@gmail.com	9521099200
15	Prof.	Dr. Ashish Nayyar	Professor	SKIT, Jaipur	yoursashish2@gmail.com	9314256263

7. Photographs/Screenshots of event (online event)



एसकेआईटी में दो दिवसीय वेबिनार का समापन

P3 Police Public Politics

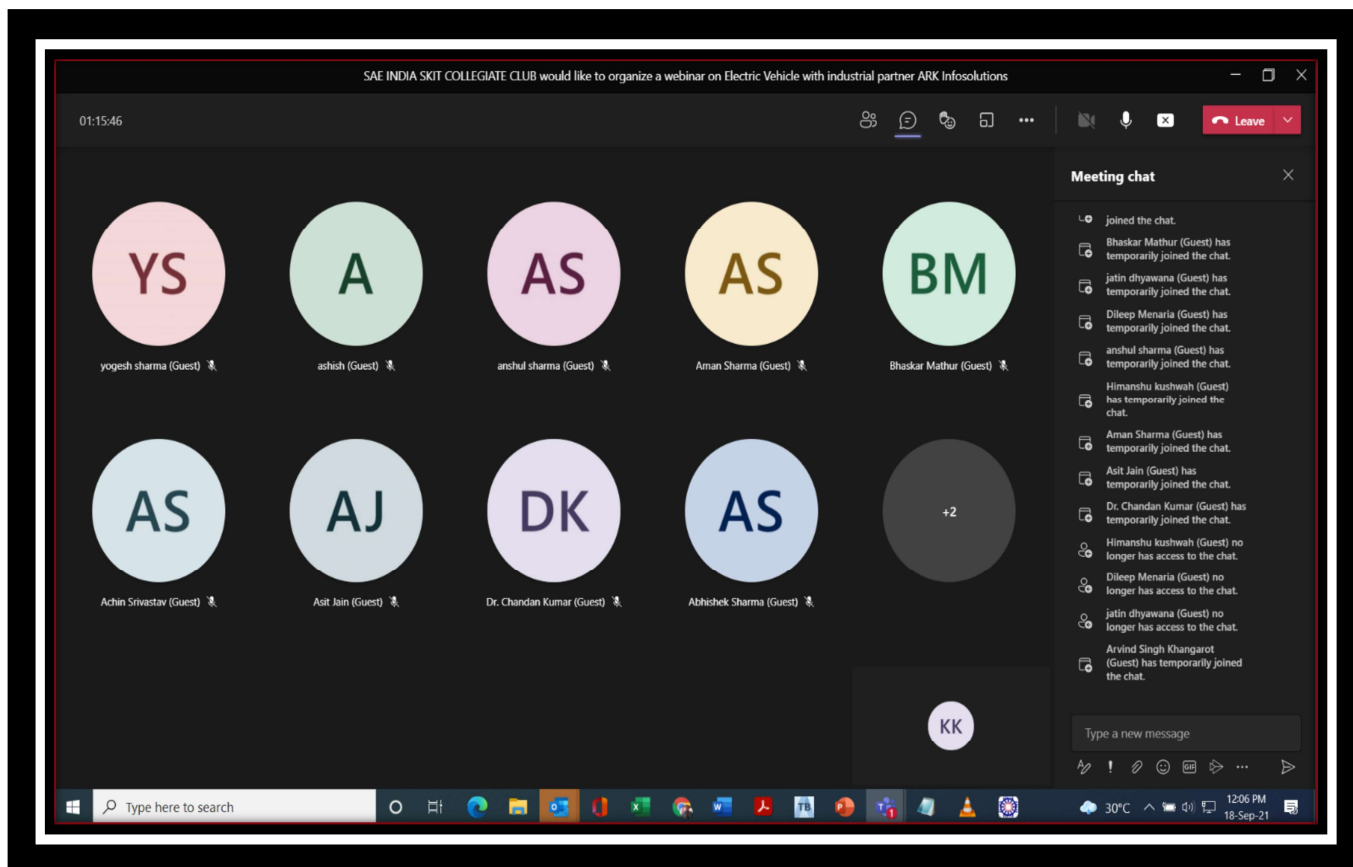
जयपुर ! स्वामी केशवानंद इंस्टीट्यूट ऑफ टेक्नोलॉजी मैनेजमेंट एंड ग्रामोत्थान (एसकेआईटी) रामनगरिया, जगतपुरा, जयपुर में इंडस्ट्रियल पार्टनर ऐआरके इन्फोसोल्यूशन्स और इलीट चैनल पार्टनर ऑफ एनसीस के सहयोग से ऑनलाइन प्लेटफॉर्म पर एसआई इंडिया एसकेआईटी कॉलेजिएट क्लब (मैकेनिकल इंजीनियरिंग डिपार्टमेंट) द्वारा इलेक्ट्रिक व्हीकल विषय पर दो दिवसीय वेबिनार का समापन हुआ।

इस वेबिनार में विशेषज्ञों ने इलेक्ट्रिक व्हीकल्स टेक्नोलॉजी के विभिन्न आयामों और इलेक्ट्रिक व्हीकल्स के भारत में चुनौतियों पर विस्तृत चर्चा की। डॉ. धीरज जोशी, विभागाध्यक्ष, (मैकेनिकल इंजीनियरिंग) ने सभी आगंतुकों का ऑनलाइन प्लेटफॉर्म पर

स्वागत किया और इ-व्हीकल्स के लाभ एवं उसके चैलेंजेज पर प्रकाश डाला। श्री कार्तिकेश कुमार झा (एप्लीकेशन इंजीनियर, ऐआरके इन्फोसोल्यूशन्स) ने डिजाइन एंड डेवलपमेंट ऑफ इलेक्ट्रिक व्हीकल्स यूसिंग एनसीस पर



विस्तृत चर्चा की। वेबिनार समापन समारोह में वेबिनार के कोऑर्डिनेटर डॉ. आशीष नैय्यर (प्रोफेसर, मैकेनिकल इंजीनियरिंग डिपार्टमेंट), ने सभी वक्ताओं तथा प्रतिभागियों का धन्यवाद ज्ञापित किया। कार्यक्रम का संचालन मैकेनिकल इंजीनियरिंग डिपार्टमेंट के फैकल्टीज, योगेश शर्मा और मोनिका खुराना ने किया।



8. Feedback report from participants and invited guest/speakers

The event was a successful event as it got a very good feedback from both guest speakers and participants. The speaker **Mr. Kartikesh** was happy with the way the webinar organized. We also got feedback from participants that the event was very good and helped them in understanding concept of e vehicle and the research area in future for one of the most relevant topic.

The participants also shared their views on social media platforms like Instagram, Facebook, etc. They also asked several questions to our guest speaker related to the topic, and were satisfied with the answer/reply they got from the guest speaker.

9. Day wise detailed report

Day 01: 17th September

Mr. Kartikesh was the key note speaker for the webinar, which was held on the 17th of September, 2021, on the Webex meeting platform.

He conveyed his viral knowledge in a very unique way to make participants understand about the general aspect of e vehicle and its constructional pillars.

To convey the concept, he used straightforward language and real-life examples. We need to set a deadline for completing particular tasks because it will aid in their completion quickly and correctly.

Day 02: 18th September

Mr. Kartikesh continued for second day in which he explained various advanced features of ANSYS and how the simulation can be done.