Name of the programme	**Electric Vehicle Design by BCCL and SIEMENS**
Date	**25.04.2020**
No. of Participants	**12**
Nature of participants	**Internal Faculty**

B.S. Abdur Rahman Crescent Institute of Science & Technology
Deemed to be University u/s 3 of the UGC Act, 1956
GST Road, Vandalur, Chennai 600 048

Webinar on Electric Vehicle Design by BCCL and SIEMENS

25.04.2020

On 25th April 2020

Department of Mechanical Engineering, BSACIST Organized a Webinar

In collaboration with SIEMENS

On the topic Electric Vehicle design

Coordinator	**Coordinator from SIEMENS**
Dr. Rasool Mohideen, Professor & Dean, School of Mechanical Sciences, BSACIST.	Mr. Pradeep Singh, PLM, SIEMENS.

PREAMBLE

The webinar on “Electric Vehicle (EV) design” was organized in collaboration with the Corporate product marketing centre SIEMENS. The presentation was delivered by Mr. Pradeep Singh of PLM team SIEMENS. The webinar offers a brief introduction about the EV and the importance of Mechanical and Automobile Engineering in the current automotive industries. The presentation delivers a detailed view on the electric motor control system and Heat dissipation unit of the EVs. The presenter also delivers the proposal of offering the partial syllabus on EV design, simulation with **Simcentre** CAE software. Faculties have suggested few topics to be incorporated in the course content before the implementation of the SIEMENS courses.

COORDINATOR
(Dr. Rasool Mohideen)

HEAD OF THE DEPARTMENT
(Dr. H. Siddhi Jailani)

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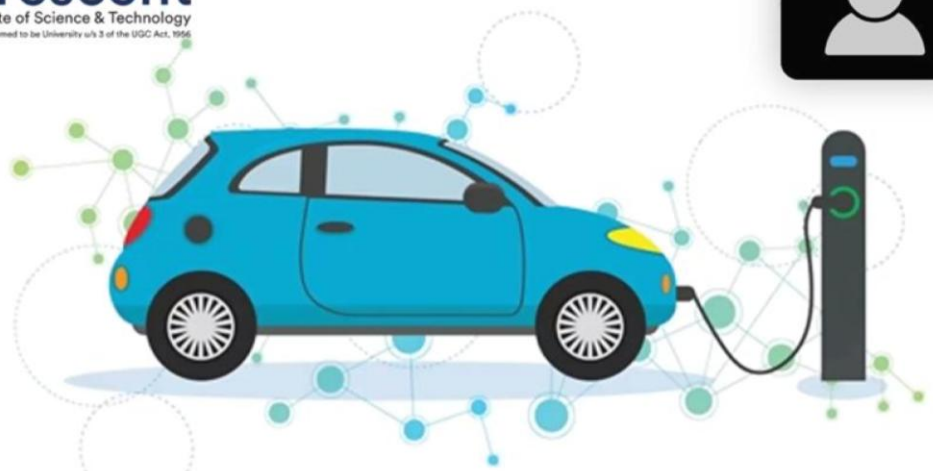
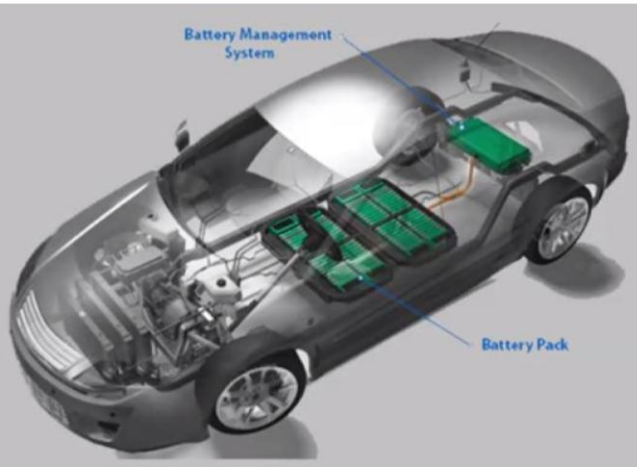


ELECTRIC VEHICLE DESIGN PROGRAM - BY SIEMENS PLM

Pardeep Singh's screen

REC

SIEMENS



Why do we need a Battery Management System (BMS)?

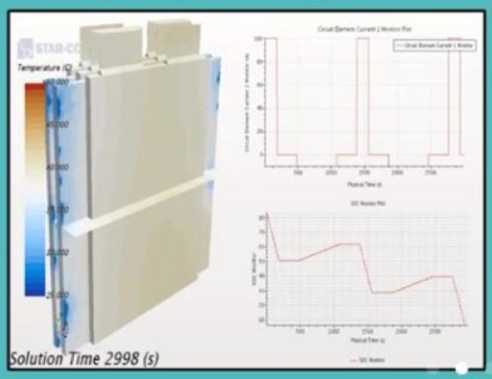
The Lithium-ion batteries have proved to be the battery of interest for Electric Vehicle manufacturers because of its high charge density and low weight. Even though these batteries pack in a lot of punch for its size they are highly unstable in nature. It is very important that these batteries should never be over charged or under discharge at any circumstance which brings in the need to monitor its voltage and current. This process gets a bit tougher since there are a lot of cells put together to form a battery pack in EV and every cell should be individually monitored for its safety and efficient operation which requires a special dedicated system called the **Battery Management System**.

Battery Cooling Strategies

Battery Cooling Types

- Phase Change Material (PCM)
  - Cooling by PCM for battery simulations. This is a novel technique within the industry.
  - PCM starts melting with temperatures > 35C

Temperature battery without cooling



Temperature battery with PCM cooling