

## Invited talk on "Electrical Sailing Ship Research & AI in Ship Life Cycle"

SCMS School of Engineering and Technology, Karukutty

Department of Mechanical Engineering

### Report

Department of Mechanical Engineering, SCMS School of Engineering and Technology, Karukutty conducted an invited talk on "Electrical Sailing Ship Research & AI in Ship Life Cycle". Details are as follows;

**Title: "Electrical Sailing Ship Research & AI in Ship Life Cycle"**

Coordinator: Dr. Vidya Chandran, Associate Professor, ME Department, SSET

Co-coordinator: Mr. Sujith R, Assistant Professor, ME Department, SSET, Mr. Dinil Babu, Assistant Professor, ME Department.

Dates: 23<sup>rd</sup> February 2024



The poster is a dark blue rectangular graphic with white and yellow text. At the top right, it says "Department of Mechanical Engineering" next to a logo with the letters "ABME". A light blue speech bubble on the left contains the words "INVITED TALK" in bold blue letters. The main title "Electrical Sailing Ship Research & AI in Ship Life Cycle" is written in large yellow font. Below the title, a calendar icon is followed by "23 FEB 2024" and a clock icon is followed by "01:30 PM IST". A white box with a blue border contains the text "Venue: Mini Conference Hall". On the right side, there is a circular portrait of a man with grey hair and glasses, wearing a dark suit and tie. Below the portrait, the text reads "Prof. Dr. Ir. Dean Vučinić" in bold yellow, followed by "Managing Director and Founder, VICORE SA, Brussels, Belgium" and "Emeritus Professor, Vrije Universiteit Brussel (VUB), Belgium" in white. At the bottom left, it lists "Faculty Coordinators - Mr. Sujith R" and "Mr. Ajith Kumar R" in white.



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## Speaker Details



Prof. Dean Vucinic, Managing Director and Founder, VICORE SA, Brussels, Belgium, Professor Emeritus, Department of Mechanical Engineering, Department of Electronics and Informatics, Vrije Universiteit Brussel, Belgium Biography: Dean Vucinic, Professor at the Vrije Universiteit Brussel (VUB), is member of 2 departments: Mechanical Engineering and Electronics & Informatics, responsible for the Research and Development (R&D) in multidisciplinary engineering and computer science domains. His Ph.D. thesis became a book in 2010, ISBN 978-3-8383-3500-1. In early 90's he developed "CFView - Computational Field Visualization System", firsttime-ever interactive visualization software adapted to numerical simulation solvers, completely based on the object-oriented technology, and fully implemented in C++. During these last 25 years at VUB, he successfully participated in more than 20 European projects under the European Framework, EUREKA and Tempus educational programs, where more than 20 PhD-s based their visualization and data analysis applying CFView. He is author of more than 50 scientific papers in the international reviewed journals and conferences proceedings. Member of several International Conferences Scientific and Technical Committees, and Editorial Boards of International Journals. He is also the European Commission expert in H2020. Member of AIAA, IEEE, ACM & ASME.

<https://scholar.google.com/citations?user=HkF-5QcAAAAJ&hl=en>

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**Dates: 23<sup>rd</sup> February 2024**

Dr. Rag R L, Professor and Head, Department of Mechanical Engineering, SSET, delivered the welcome address for the program. Prof. Dean Vucinic delivered the technical talk about nearly one hour duration and followed by active discussions from the participants.

Major points delivered in Prof. Dean's talk are summarised below;

- Electrical sailing ships, also known as electric sailboats or e-sailboats, represent a fusion of traditional sailing techniques with modern electric propulsion systems. These vessels utilize renewable energy sources to power their electric engines, offering a sustainable alternative to conventional sailing and fossil fuel-powered ships. This report delves into the technology, benefits, challenges, and future prospects of electrical sailing ships.
- Electrical sailing ships offer a promising pathway towards sustainable maritime transportation, combining traditional sailing heritage with modern clean energy technology. While challenges such as limited range and infrastructure constraints exist, ongoing advancements in battery technology and supportive regulatory measures are expected to accelerate the adoption of e-sailboats, contributing to a greener and more environmentally friendly maritime industry.
- Electrical sailing ship technology involves a blend of various engineering disciplines, including:
  - Electrical Engineering: Designing and implementing the electrical systems, including propulsion motors, power distribution, energy storage (batteries), and control systems for sails and other components.
  - Mechanical Engineering: Designing the mechanical systems such as the hull, propulsion systems, rigging, and structural components to withstand the forces encountered at sea.
  - Computer Engineering: Developing onboard computer systems for automation, navigation, and monitoring, including sensor integration and data analysis for optimizing performance.
  - Software Engineering: Developing software for simulating and optimizing sailing routes, managing energy usage, and coordinating various subsystems for maximum efficiency.
  - Renewable Energy Engineering: Integrating renewable energy sources such as solar panels or wind turbines to supplement the electrical power and extend range, reducing reliance on fossil fuels.
  - Environmental Engineering: Implementing technologies for minimizing environmental impact, such as waste management systems and eco-friendly antifouling coatings.
- Overall, multidisciplinary collaboration is essential for the successful development and implementation of electrical sailing ship technology, leveraging expertise from various fields to create efficient, sustainable, and environmentally friendly vessels.

The ceremony was concluded with vote of thanks by Dr. Vidya Chandran, program Coordinator.

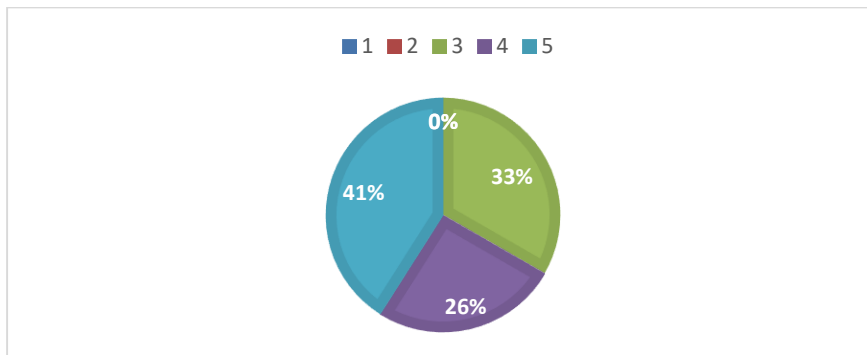
## Glimpses of FDP



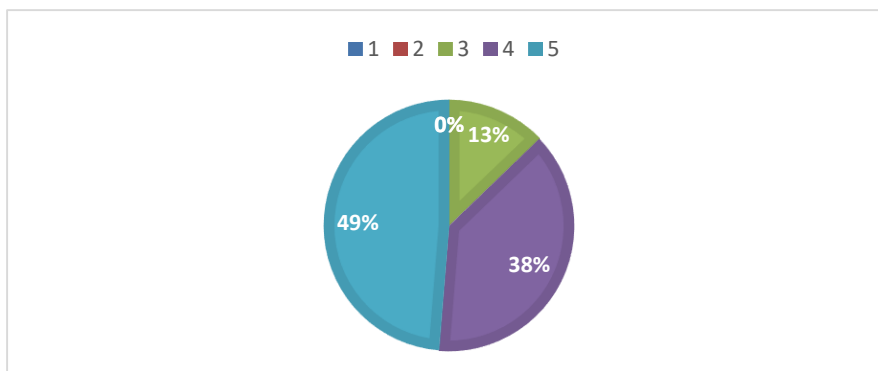
## Feedback

39 participants have responded through Google form and marked their feedback.

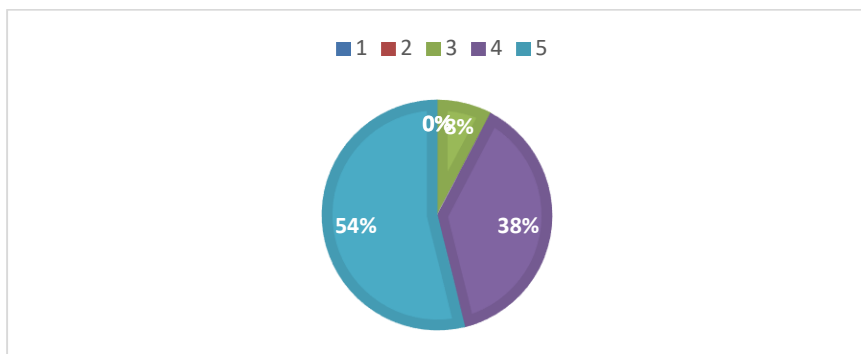
Was the content delivered is significant to Mechanical engineering.



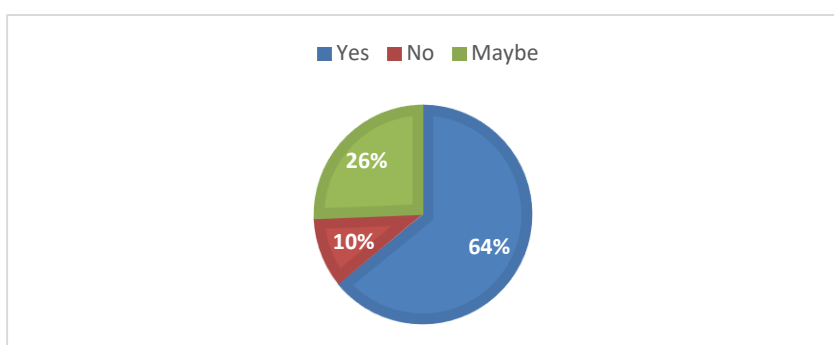
Participation and interaction are encouraged during the session.



The topic covered is relevant to you?



Will you attend the similar talks in the future?



Sl. No.	Name of Faculty	Department
1	Dr. Manoj Kumar B.	AU
2	Mr. Vipin Raj P. G.	AU
3	Mr. Aravind P. V.	AU
4	Mr. Sujay K.	AU
5	Mr. Koshy P. Joseph	AU
6	Mr. Amal P. Dev	AU
7	Mr. Anoop M. S.	AU
8	Dr. Jayadevan P. C.	AU
9	Mr. Mobin C. M.	AU
10	Ms. Deepa S.	EE
11	Dr. Divya Nath K.	EE
12	Ms. Jayalakshmi S.	EE
13	Ms. Beena Puthillath	EE
14	Mr. Varun Jose	EE
15	Ms. Priya Venugopal	EE
16	Ms. Megha Jasmin Benny	EE
17	Mr. Francis Thomas	ME

18	Dr. Mahesa Rengaraj R.	ME
19	Mr. Jose Sheril D'Cotha	ME
20	Mr. Nikhil Ashok N.	ME
21	Dr. Vidya Chandran	ME
22	Mr. Rakesh A.	ME
23	Mr. Noel Joseph Gomez	ME
24	Mr. Vishnu H.	ME
25	Mr. R. Sujith	ME
26	Mr. Ajith Kumar R.	ME
27	Mr. Dhanesh S.	ME
28	Dr. Anjana Viswanath	ME
29	Mr. Suraj R.	ME
30	Dr. Raghav G. R.	ME
31	Dr. Gibin George	ME
32	Mr. Dinil Babu C.	ME
33	1 Dr. Nisha L	CE
34	Jerry Anto	CE
35	Dr. Rahul R Pai	CE
36	Nandita Mohan	CE
37	Merin Mathew	CE
38	Geethu R Babu	CE
39	Dr. Ratish Menon	CE

Programme Coordinator

Sujith R

27/2/24

HOD/ME

Dr. Raghav R. L.

27/02/24