

Program at a Glance

Day 1: Monday 21 September 2020

09:00	Welcome
09:10	<u>Session 1: RA4 – Policy & Techno-Economic Analysis</u>
10:45	<u>Poster Session I</u>
11:15	Lunch Break
13:00	<u>Session 2: RA1 - Batteries</u>
14:30	Summary & Discussion
15:00	End of Day 1

Day 2: Tuesday 22 September 2020

09:00	<u>Session 3: RA2 – Hydrogen</u>
10:40	<u>Poster Session II</u>
11:10	Lunch Break
13:00	<u>Session 4: RA3 – Systems & Applications</u>
14:30	Summary & Discussion
15:00	End of Day 2

Day 3: Wednesday 23 September 2020

09:00	<u>MoZEES Battery Innovation Activities</u>
11:00	Lunch Break
13:00	<u>MoZEES Hydrogen Innovation Activities</u>
14:30	Closing Remarks
15:00	End of Day 3

Day1

Monday 21 September 2020

Arrival & Login

08:50 Login

09:00 **Welcome**

Øystein Ulleberg
Director MoZEES

Session 1: Techno-Economic Studies and Policy

(Chair: Erik Figenbaum, TØI)

09:10 **Keynote:** Battery electric and hydrogen vehicles – technology progress, cost reduction, and prospects in California

Lew Fulton, UC Davis

09:30 Economic Effects of Green Water Transport

Gerardo A. Perez-Valdes,
SINTEF Industri

Coffee Refill 09:50-09:55

09:55 Estimating the conversion potential of Norwegian high-speed passenger vessels to zero emission solutions

Ingrid Sundvor, TØI

10:15 Design and Operation of a Zero Emission Transport System

Peter Schütz, NTNU

Coffee Refill 10:35-10:45

Poster Pitch Session I

(Chair: Øystein Ulleberg, IFE)

10:45 **2-minute poster pitches + questions (RA4 + RA1):**

- Optimization of maritime zero emission transport systems
- Economic analysis of a zero-emission transport system
- Investigation of the stabilizing effect of Al₂O₃-coated high-voltage LNMO
- Investigation of selected ionic liquids as electrolytes for silicon anodes
- Understanding the details of crystal structure and electronic states in LNMO
- Beyond Insertion: Conversion alloying Bi/RGO-based materials as anode for Na-ion batteries
- PDF Analysis of Batteries Using Diffraction Computed Tomography

Sarka Stadlerova, NTNU
Jonas Martin, NTNU
Elise Ramleth Østli, NTNU
Daniel Tevik Rogstad, NTNU
Halvor Høen Hval, UiO
Carmen Cavallo, UiO
David Wragg, UiO

Lunch Break 11:15-13:00

Session 2: Battery Materials

(Chair: Ann Mari Svensson, NTNU)

13:00 **Keynote:** Polyesters as next-generation solid electrolytes for Li- and Na-batteries

Daniel Brandell, Uppsala

13:20 Additive for silicon anode

Alok Mani Tripathi, UiO

Coffee Refill 13:40-13:50

13:50 Shedding light on the working mechanism of the carboxylic acid derived additives for high capacity micro silicon anodes

Nils Peter Wagner, SINTEF

14:10 Industrial grade crystalline silicon for Li-ion batteries

Carl Erik Foss, IFE

14:30 Summary and Discussions – Day 1

15h00 End of Day 1

Day 2

Tuesday 22 September 2020

08:55 **Login**

Session 3: Hydrogen and Fuel cell Materials & Components (Chair: Magnus Thomassen, SINTEF)

09:00 **Keynote:** Strategies for cost reduction beyond the membrane electrode assemblies Tom Smolinka, Fraunhofer ISE

09:20 Fatigue Issues in Composite Pressure Vessels Eivind Hugaas, NTNU

Coffee Refill 09:40-09:50

09:50 Synthesis of high-performance ORR catalysts for PEM fuel cells by galvanic replacement Tor Olav Sunde, SINTEF

10:10 In-Situ performance of activated Stainless Steel 316 as anode in alkaline electrolyser Hamid R. Zamanizadeh, NTNU

Coffee Refill 10:30-10:40

Poster Pitch Session II (Chair: Øystein Ulleberg, IFE)

10:40 **2-minute poster pitches + questions (RA2 + RA3):**

- Electrochemical Low-Frequency Impedance Spectroscopy Federico Zenith, SINTEF
- Interactive Map for Future Maritime Hydrogen Demand Trond Strømgren, Ocean Hyway Cluster
- Protonic conductivity of polymer-ceramic composite membranes for PEM applications Xinwei Sun, UiO
- Scheduling of fuel cell electric buses Jørgen Tuset, UiO
- H₂ refuelling infrastructure for large bus fleet Ragnhild Hancke, IFE

Lunch Break 11:10-13:00

Session 4: Battery & Hydrogen Systems & Applications (Chair: Ragnhild Hancke, IFE)

13:00 **Keynote:** State of the Art of Silicon in Commercial Lithium Ion Batteries Cells and Perspectives on Higher Silicon Loadings Enabled by Electrolyte Additives Egbert Figgemeier, RWTH

13:20 Energy and cost analysis of a hydrogen driven high speed passenger ferry Janis Danebergs, IFE

Coffee Refill 13:40-13:50

13:50 Changes in Thermal Stability of Cyclic Aged Commercial Lithium-Ion Cells Torleif Lian, FFI

14:10 Pressure Peaking Phenomenon - Hazards of indoor leakages André Vagner Gaathaug, USN

14:30 Summary and Discussions – Day 2

15:00 **End of Day 2**

Day 3

MoZEEES Industry & Innovation Day

Program Wednesday 23 September 2020

08:55 Login

Session I-1: MoZEEES Battery Innovation Activities

(Chair: Sissel Forseth, FFI)

09:00	Introduction by Chair of Session	Sissel Forseth, FFI
09:10	Battery systems presentation	Egil Mollestad, ZEM Energy
09:20	Battery Norway industry network	Stephen Sayfritz, NCE Eyde Cluster

Coffee Refill 09:30-09:40

09:40	Towards high energy advanced Li-ion batteries	Cecile Tessier, SAFT
09:50	What will it take to turn Norway into a battery manufacturing hub?	Bård Karlsen, Morrow Batteries
10:00	Cenate – Finding a place in the battery value chain	Martin Kirkengen, Cenate
10:10	Elkem's Northern Recharge project – Sustainable production of active anode materials	Stian Madshus, Elkem

10:20 Summary & Discussions – Battery Innovation Activities

Lunch Break 11:00-13:00

Session I-2: MoZEEES Hydrogen Innovation Activities

(Chair: Geir Brekke, Statkraft)

13:00	Introduction by Chair of Session	Geir Brekke, Statkraft
13:10	Hydrogen in Maritime Sector – Public Procurement as Key Driver?	Trond Strømgen, Hub for Ocean
13:20	Hydrogen as route to decarbonising Norway's coastal shipping	Kevin Gould, Statkraft
13:30	Safety First	Olav Hansen, Lloyd's Register

Coffee Refill 13:40-13:50

13:50	Product and process development of low-cost bi-polar plates	Adrian Murgau, Nel Hydrogen
14:00	Fuel cell systems for heavy duty applications	John Winterbourne, Ballard
14:10	Hydrogen storage vessels	Håvard Stave, Hexagon

14:20 Summary & Discussions – Hydrogen Innovation Activities

14:45 Closing Remarks (Øystein Ulleberg, Director MoZEEES)

15:00 End of Meeting

Practical Information

The MoZEES Annual Meeting 2020 will be an online event including:

- Presentation Sessions
- Virtual Poster Sessions
- Online discussion forum

For more information and updates please visit:

<https://mozees.no/event/mozees-annual-meeting-2020/>

The meeting will be held as a **Microsoft Live Event** (no registration required), supported by active conversations & discussions in the *Microsoft Teams: PUBLIC MoZEES Annual Meeting* (registration required).

PRESENTATIONS

Presentations will be held as *Live Events*. Each Session will have their own access link. The links will be posted on the MoZEES website and on the respective Teams Channel. Make sure to use the correct link to join each Session. It is possible to join the Live sessions within the Teams App, as well as in a Web Browser.

The Live Events are public, and no registration is necessary.

DISCUSSION FORUM

The **PUBLIC MoZEES Annual Meeting** Teams will be used for communication, access information to the Live Events and discussions during and after the presentations.

There will be one Channel in the Teams for each Session and Poster Session. This will also be the place for questions and discussions. Presentations and posters will be uploaded and made available there.

To participate in the discussion forum on Microsoft Teams throughout the meeting, **registration is necessary.**

PRACTICAL INFORMATION FOR PRESENTERS

Presentation slides should be uploaded to Teams latest Friday 18 September. Presenters are asked to login to their respective sessions 15 minutes early to test the setup.

Posters should be landscape format and easily readable on a standard computer/laptop screen. Posters should be uploaded in pdf format (1 page!) to the respective Teams Channel latest **Friday 18 September.**

All presenters (Presentations & Posters) are kindly asked to answer and follow-up questions to their presentations and contribute to discussions on Teams.

MoZEEES

Mobility Zero Emission Energy Systems

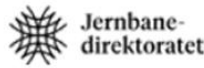
MoZEEES Annual Meeting 2020

21-23 September 2020

Final Program



KYSTVERKET



Jernbane-direktoratet



Statens vegvesen
Norwegian Public Roads
Administration



Trøndelag
fylkeskommune



-vi fornyer Norge med mat



HEXAGON
COMPOSITES



UiO : University of Oslo

