

Battery Coast

University of Agder

Williams Agyei Appiah, PhD
Assoc. Prof. Battery Simulation



industrial strategies establish battery value chain in South Norway

What is  UiA 's role in
the battery strategy?



university since 2007



two campuses



6 faculties + teacher education



1500 employees (2021)



14200 students (2021)



Faculty of Engineering and Science

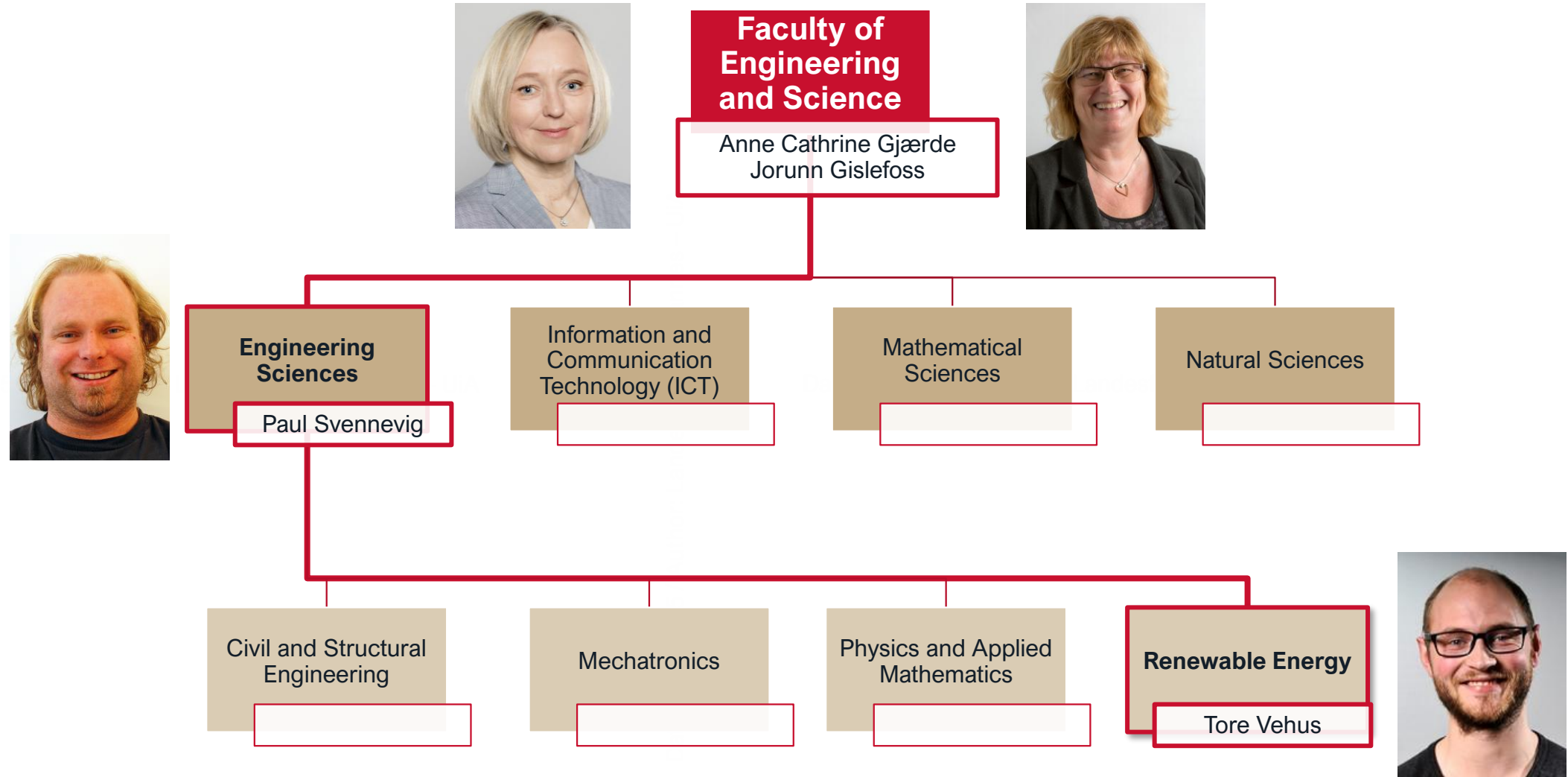
Faculty



Department



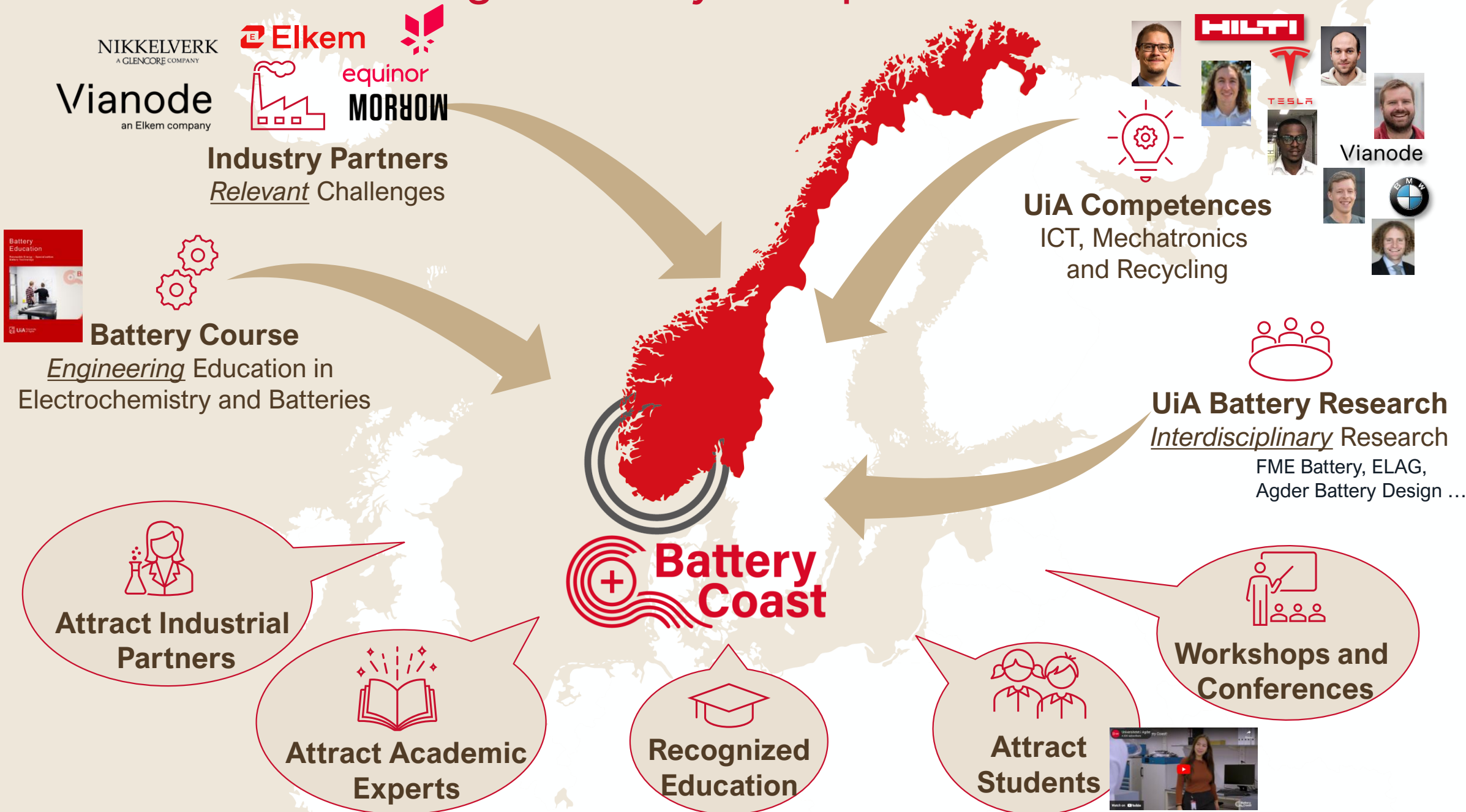
Section





Creating a Battery Competence Hub

Creating a Battery Competence Hub



Overview - Battery Coast Project



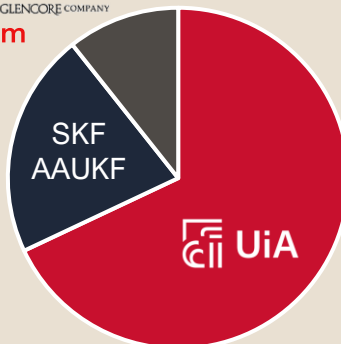
4 Profs.

3 Researchers

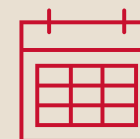
6 PhDs

BAs/MAs

Team



6 Partners



5 years

beg. 2022 – end 2026
new projects ensure sustainability



Battery Engineer

Interdisciplinary Education



*illustration

Electrochemistry and Cell Laboratory



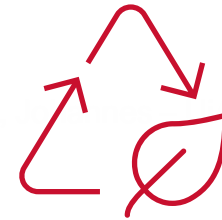
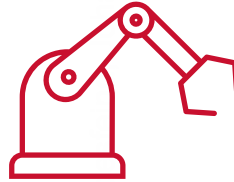
Relevant Research

through Industry
Partners Projects



Team

Three major Directions on Batteries at UiA



Battery Components and Design

Automation in the Battery Industry

Circular Battery Value Chains



Johannes Landesfeind
Associate Professor /
Electrochemistry
Renew. Eng. @ Dept. of Eng. Sc.



Martin Choux
Associate Professor
Mechatronics @ Dept. of Eng. Sc.



Stina Torjesen
Associate Professor
Dept. of Management

Battery Components and Design

Automation in the Battery Industry

Circular Battery Value Chains

People



Materials and Electrochemistry



Johannes Landesfeind
Associate Professor
Electrochemistry



Antoine de Padoue Shyikira
Researcher
Electrochemistry



Marlene Nham
PhD Student
Electrochemistry



Mahla Bakhshi
PhD Student
Electrochemistry



Ashvini Sivasengaran
PhD Student
Electrochemistry



Rafal Pakula
PhD Student
Battery Models



Commercial Cells and Systems



Eric Logan
Associate Professor
Cell Design



Mahdi Amani
Researcher
Data Analysis



announced
PhD Student



announced
PhD Student



Simulation of Batteries



Williams Agyei Appiah
Associate Professor
Simulation



Ekta Shrinet
Researcher
Simulation



Johannes Bakkelund
PhD Student
Simulation



Announced (FME Battery)
PhD Student



Industrial Relevance



Gunstein Skomedal
Ass. Professor 20% / Vianode
Materials



Johannes Wandt
Ass. Professor 20% / BMW
Degradation



Bernhard Fäßler
Ass. Professor 20%
illwerke vkw (Systems).



Naveen Singh
Ass. Professor 20%
Norner AS (Polymers).



tbd.
Professor 20%

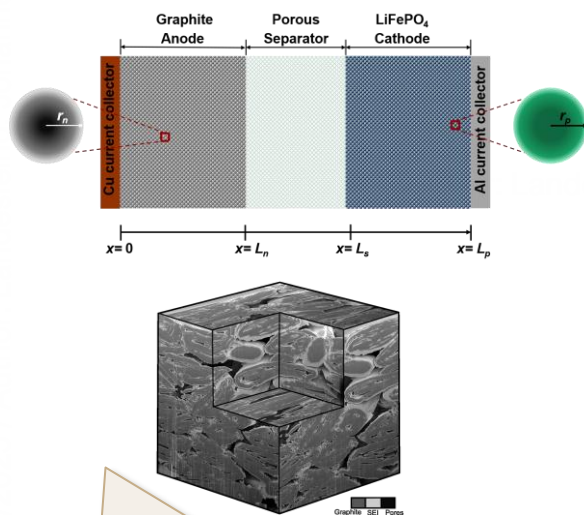


announced
PhD Student

Multiscale Models & Simulations



Williams Appiah
Associate Professor
Simulation



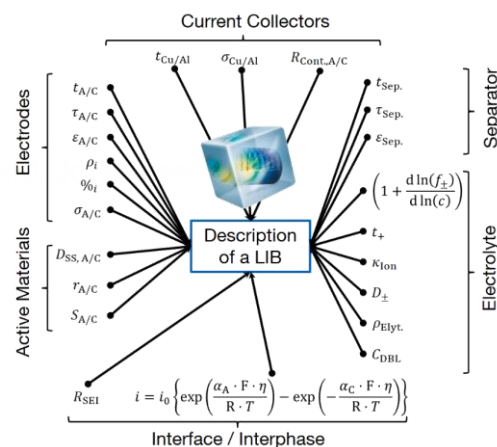
“accelerating battery design at different length and times scales”

W.A. Appiah et al., *J. Electrochem. Soc.*, **166**, A5109 (2019).
W.A. Appiah et al., *Batteries & Supercaps*, **2**, 541 (2019).
W.A. Appiah et al., *J. Electrochem. Soc.*, **167**, 080542 (2020).

Electrochemical Parameterization



Johannes Landesfeind
Associate Professor
Electrochemistry



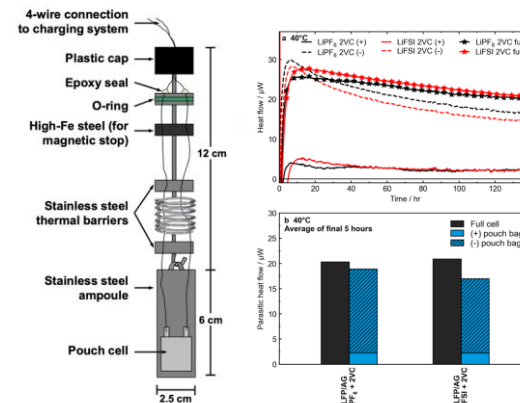
“how battery components limit operation e.g., during fast charging”

J. Landesfeind et al., *J. Electrochem. Soc.*, **166**, A3079–A3097 (2019).
J. Landesfeind et al., *J. Electrochem. Soc.*, **163**, A1373–A1387 (2016).
J. Landesfeind et al., *J. Electrochem. Soc.*, **164**, A1773–A1783 (2017).

Aging and Degradation



Eric Logan
Associate Professor
Cell Design



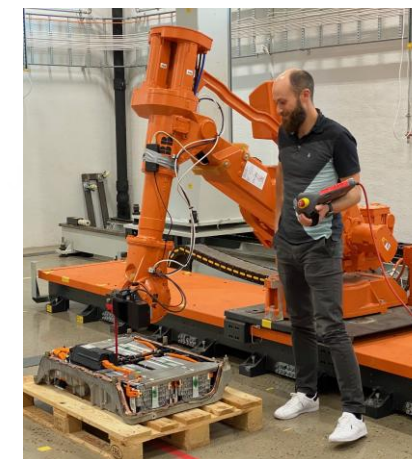
“Non-destructive studies of battery degradation, how cell components interact”

E.R. Logan et al. *J. Electrochem. Soc.* **167**, 060530 (2020).
E.R. Logan et al. *J. Electrochem. Soc.* **168**, 060527 (2021).
E.R. Logan et al. *J. Electrochem. Soc.* **169**, 040560 (2022).

Automation for Demanufacturing

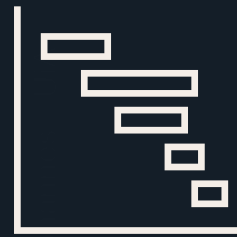


Martin Choux
Associate Professor
Mechatronics



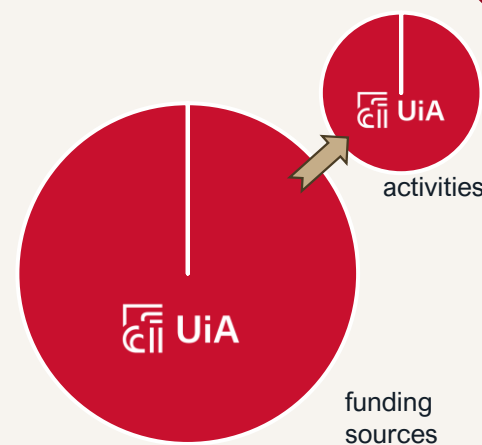
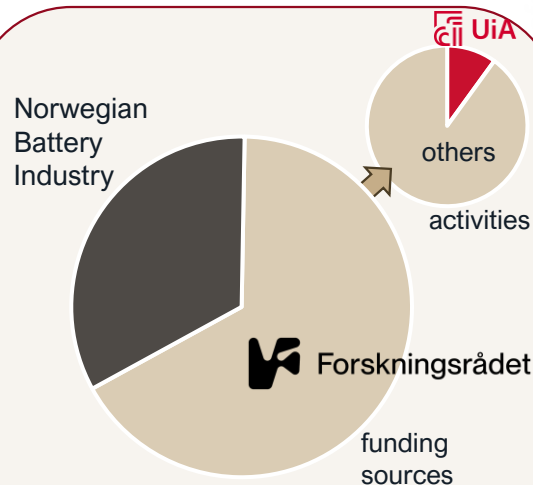
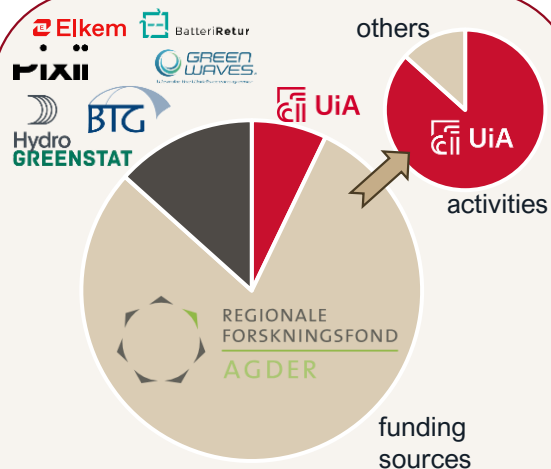
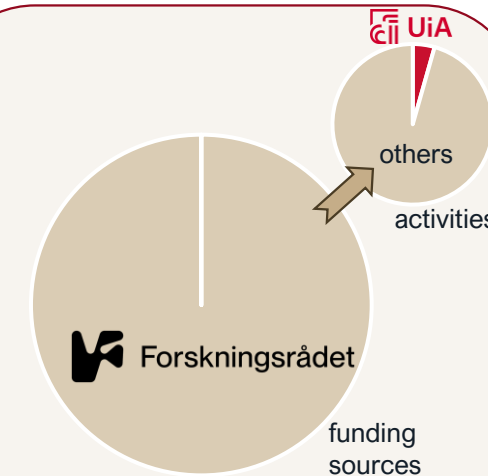
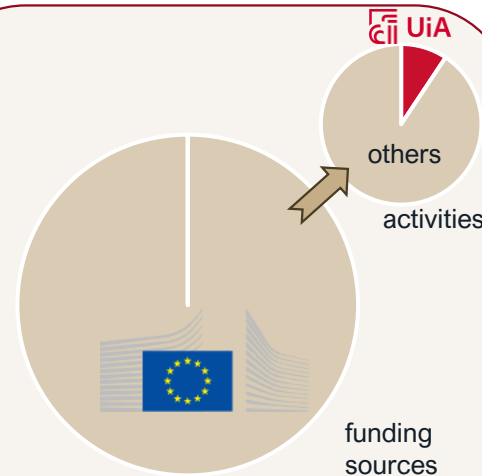
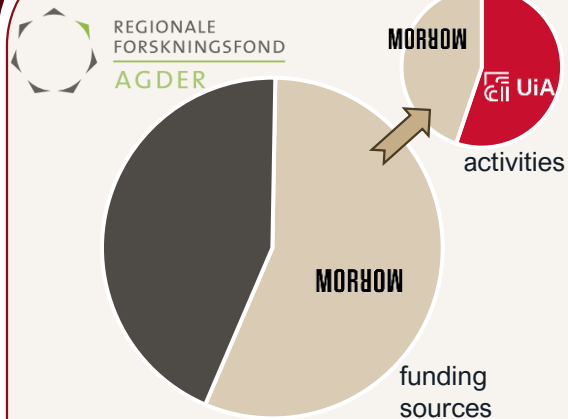
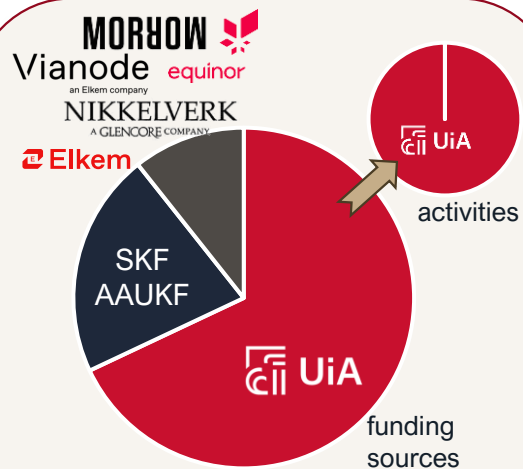
“how to improve recycling efficiency of EV battery packs”

M. Choux et al. *Metals* **11**, 387 (2021).
M. Choux et al. *Res., Conserv. and Recyc.* **203**, 107430 (2024).
M.T. Bilal et al. *11th Int. Conference on Control*. 19-24 (2023).



Project Examples

Overview - Battery Coast Projects



Battery Coast leading biggest work package in FME Battery on digitalization

Thank you

check out  battery-coast.uia.no
or visit for a

