



# Aura CDT in Offshore Wind Energy & the Environment Annual Conference

Venue: Aura Innovation Centre, Hessle

## DAY 1 Monday 20<sup>th</sup> September 2021

### Registration

09:00 – 09:30 Registration and breakfast

### Welcome

09:30 – 09:45 Welcome Speech

Professor Dan Parsons, Director of Aura Centre for Doctoral Training, University of Hull

09:45 – 10:15 **Industry speaker** – Lauren Little, Stakeholder Advisor for Ørsted

Title: **The hidden world of offshore wind: A chance to change the future from your hometown**

10:15 – 11:00 Discussion stations, Main Foyer

### BREAK

11:00 – 11:30 Mezzanine and Main Foyer

### Presentation Session 1 - Theme: On the seabed

11:30 – 12:15 Chair: Sarah Bee

Maisy Bradbury, **'Testing scour mitigation measures,'** University of Hull

Jason Harrison, **'Fibre Optic Sensing for Cable Lifetime Performance Monitoring'** University of Hull



Ellie-Mae Cook, **'Cumulative impacts on ecological resources,'** University of Hull

## CHANGE OVER

### Presentation Session 2 - Theme: Under water

12:15 – 13:00 Chair: Emily Settle  
Ethan Clark, **'Integration of seaweed aquaculture around offshore wind farms,'** Newcastle University  
Gemma Hoyes, **'Satellite detection and mapping of sandbank crests,'** Newcastle University  
Sarah Dickson, **'Acoustic monitoring of dolphins and porpoise,'** Newcastle University

## LUNCH

13:00 – 14:00 Mezzanine and Main Foyer

### Presentation Session 3 - Theme: In the air

14:00 – 15:00 Chair: Daniel Whitt  
Sarah Bee, **'Advanced data analysis and robust statistics for structural health monitoring of wind turbines,'** University of Sheffield  
Oliver Morgan-Clague, **'Numerical modelling of wind turbine manufacture,'** University of Hull  
Paul Hambly, **'Condition monitoring of generators and bearings,'** University of Sheffield  
Harry Burton, **'Low power high performance neuromorphic circuits for turbine blade fault detection,'** University of Hull

## BREAK

15:00 – 15:30 Mezzanine and Main Foyer

### Presentation session 4 - Theme: Around a wind turbine

15:30 – 16:30 Chair: Hannah Marsden



Lisa Somerville, '**You make me sick: motion sickness in the human body and leading theories as to its causes,**' University of Hull

Victoria Bessonova, '**Climate change impacts on offshore wind industry,**' University of Hull

Ben Pickett, '**Tsunami risk to offshore wind infrastructure,**' University of Hull

Woolaganathan Naidoo, '**Economic and social impact on fisheries,**' University of Hull

## CHANGE OVER

### Presentation session 5 - Theme: Grid integration

16:30 – 17:15

Chair: Ethan Clark

Daniel Whitt, '**Wind Sourced Energy Storage**' University of Hull

Siti Hamzah, '**Linking multiple wind farms in a supergrid,**' Durham University

Emily Settle, '**Using Digital Twins to create a coordinated energy supply,**' Durham University

## CLOSING

17:15 – 17:45

**Closing Summary**

Professor Dan Parsons, Director, Energy and Environment Institute



## DAY 2      Tuesday 21<sup>st</sup> September 2021

### Registration

08:45 – 09:15      **Registration and breakfast**

### Plenary: The Role of the Offshore Wind Sector in Tackling Climate Change

09:15 – 09:20      **Welcome**, Professor Dan Parsons, Director of Aura Centre for Doctoral Training, University of Hull

09:20 – 09:45      **Keynote Speaker** – Danielle Lane, Vattenfall

Title: **Offshore Wind Sector Deal: progress and future opportunities.**

09:45 – 10:00      **Guest Speaker** – Jo Burgess, Innovate UK

Title: **Importance of our People and Skills – inspiring and enabling talented people and teams**

10:00 – 10:15      **Guest Speaker** – Professor Deborah Greaves, Director of ORE Hub at SuperGen, Professor of Ocean Engineering and Director of the COAST at Plymouth University

Title: **The Supergen ORE Hub**

### Plenary Discussion Panel

10:15 – 11:00      **Topic: How can we grow the right talent needed to deliver the OSW sector deal?**

Chair: **Louise Smith, Director of Aura**

Panel: **Prof Dan Parsons**, Director of Energy and Environment Institute

**Danielle Lane**, Vattenfall, Head of Asset Value and Partnering and Chair of OWIC

**Jo Burgess**, Innovate UK, Head of Innovation Talent Skills

**Prof Deborah Greaves**, Director of ORE Hub at SuperGen, Professor of Ocean Engineering and Director of the COAST at Plymouth University

**Prof Jim Fleming**, EPSRC, Head of Energy Themes



## BREAK

11:00 – 11:30 Mezzanine and Main Foyer

## Session 1: Energy Systems

11:30 – 12:45 Chair: **Dr Peter Osborne**, AMRC, University of Sheffield

Presenters: Rachael Keslake, **Incorporation of Energy storage into offshore wind farms for load levelling and energy security**, University of Sheffield

Favad Mobahriz, **Wind to Hydrogen and ePTA: Chemical Manufacture through Electrolysis**, University of Hull

Dr Behzad Kazemtabrizi, **Large-scale Offshore Wind Energy Integration (Reliability and Operation)** Durham University

Dileep Padinharu, **High Torque Density Permanent Magnet Vernier Machines for Direct-Drive Offshore Wind Turbines**, University of Sheffield

Dr Richard Williams, **Remote monitoring of wind turbine gear oil**, Durham University

## LUNCH

12:45 – 13:45 Mezzanine and Main Foyer

## Industry

13:45 – 14:15 **Andrew Elmes, Head of Business Development – UK&I**, Siemens Gamesa Renewable Energy  
Title: **Surfing the Winds of Change**

## Session 2: Sustainability

14:15 – 15:30 Chair: **Dr Nikos Dervilis**, University of Sheffield

Hannah Marsden, **'From textile waste to advanced carbon material for offshore wind turbine blades'** University of Hull



Dr Waseem Tahir, '**Challenges involved in the digitalization of manufacturing of Wind Turbine blades**',  
University of Hull

Dr Asimina Manta, '**Simulation and Design methods for novel composite wind turbine blade**' University  
of Sheffield

Prof Lizzy Cross, '**Physics-informed machine learning for wind turbine health monitoring**', University of  
Sheffield

Aidan Duffy, '**An analytical model for predicting the leading-edge coverage of erosion**', Durham  
University

## BREAK

15:30 – 16:00 *Turning the Tide project demonstration*, Main Foyer – Dr Christina Roggatz (EEI, University of Hull) &  
Fred Garland (Tenfoot Dance Company)

## Session 3: The Marine Environment

16:00 – 17:15 Chair: **Professor Jim Gilbert**, University of Hull

Jordan Burgess, '**Wind farm associated noise and commercially important invertebrates**', University of  
Hull

Niall Tracey, '**Novel Acoustic Methods for Directly Monitoring Seabed Sediment Transport, Geo-  
hazards & Scour**', Durham University

Sophie Al-Mudallal, '**Impacts of offshore wind associated noise and vibration on infaunal invertebrates**',  
University of Hull

Dr Evodokia Tapoglou, '**Machine learning and remote sensing for wave simulation and forecasting in  
Offshore wind farms**', University of Hull



Dr Agota Mockute, '**Enabling sustainable exponential growth of offshore wind, built on UK-based NERC research**', University of Hull

## BREAK

17:15 – 17:45 PhD Research Showcase, Mezzanine

## CLOSING

17:45 – 18:00 **Closing Summary**  
Professor Dan Parsons