

The Science of Making Torque from Wind 2022 (TORQUE 2022)

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The Science of Making Torque from Wind 2022 (TORQUE 2022)

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Wind energy continues to make great strides in its contribution to the net CO₂-zero targets of countries around the world. Both wind farms onshore and offshore are being built, but scientific challenges lie ahead if their generation is to be both reliable and economic. These challenges relate to better understanding the characteristics of the wind, how the wind inflow translates to loads and performance, and how best to build and operate the wind farms of the future so that their output can best be integrated into a 21st century energy system. Europe continues to be a hub for scientific research in wind energy and the European Academy of Wind Energy (EAWE) was created to bring together the top research institutes active in wind energy to cooperate, share knowledge and promote scientific excellence. As part of this remit, the conference, *The Science of Making Torque from Wind* (or TORQUE, for short) was inaugurated in 2004 in the beautiful city of Delft. The conference has gone from strength to strength and is probably the largest scientific conference devoted to wind energy in the world. History came full circle and the eighth edition, TORQUE 2020 was due to be held in Delft. Unfortunately, the global pandemic meant that this conference had to be held online, but the TU Delft Wind Energy Institute was given a further opportunity to host the ninth edition, TORQUE 2022, in person.

Following the call for three-page abstracts, 435 submissions were made and, after a two-stage peer review process by over 100 reviewers, 300 full papers were accepted for publication in the proceedings. The conference consisted of three plenary sessions, 28 parallel oral sessions and two poster sessions. Oral presenters had 15 minutes to present their work followed by 5 minutes of questions. All poster presenters were allowed a recorded one-minute pitch which could be accessed in advance of the live 90-minute poster sessions.

Posters and parallel sessions are grouped under eight broad themes that have been overseen by several experts in the field. These are:

- Turbine Technology - Carlos Simão Ferreira (TU Delft)
- Wind and Wind Farms – Sukanta Basu (TU Delft)
- Artificial Intelligence, Control and Monitoring – Jan-Willem van Wingerden (TU Delft)
- Floating Wind – Axelle Viré (TU Delft)
- Measurement and Testing – Martin Kühn/Michael Hölling (University of Oldenburg)
- Systems Design and Multi-Fidelity/Multi-Disciplinary Modelling – Katherine Dykes (DTU Wind Energy)
- Future Wind – Dominic von Terzi (TU Delft)



- Smaller Wind Turbines – David Wood (University of Calgary)

The conference could not have been made possible without an army of people, too numerous to mention personally. However, I would like to give a special thank you to Sarah Nietiedt, Lily Li and Alizé Hall who managed the arrangements for the conference ably assisted by Marie Louise Verhagen and her team at Event Solutions.

*Simon Watson
Chairman of TORQUE 2022
Delft, June 2022*