



Ari Huusela was extremely pleased with his new keel during the race.

## Low-emission transportation on inland waterways

Two vessel concept designs have been generated in cooperation between Aalto University and Aker Arctic for the "Future Potential of Inland Waterways" (INFUTURE) project: ice class 1A for escorted and 1A Super for independent operation.

The vessel concepts have been designed with the expanded Saimaa Canal locks in mind. Both are of a similar size and capable of handling a variety of general cargo. They have a speed of 11.5 knots and are equipped with lift away hatch covers, movable tween-decks and bulkheads, and an option for gantry cranes. The main difference is their ice capability; the one concept having a traditional hull form and a single fixed pitch propeller, and the other having a double-acting ship hull and azimuthing propulsion, allowing independent operations in ice.

## Reduced emissions

Both concepts would be able to extend the navigating season significantly when compared to existing vessels. They are designed to run on biofuels with the potential to reduce carbon emissions. Furthermore, they comply with the IMO BWM Convention to prevent the transportation of foreign species.

To validate the new concept designs, model-scale ice tests were conducted in the Aalto ice tank in March and April 2021.

Since 2018, INFUTURE has been evaluating attractive business opportunities in the context of inland waterway utilization and joint ventures between some key partners from Finland and Russia.

Read the full article written by Pentti Kujala and Li Fang from Aalto University at

<https://www.vesitiet.org/post/inland-waterways-can-form-the-leading-edge-for-zero-emission-transport/>

# ANNOUNCEMENT



*Mikko Patalainen* has joined Aker Arctic as a structural design specialist in the Machinery and Structures team.

Mikko graduated from the Mechanical Engineering Department at Aalto University in 2010. He studied Mechanics of Materials as his major, and did his master's thesis at VTT (Technical Research Centre of Finland). After working for a few years as a research scientist at VTT, Mikko decided to challenge himself with a new field of expertise and joined Arctech Helsinki's Shipyard Hull Design Department in 2014. There he was introduced to hull design for multipurpose vessels and icebreakers; his main tasks being to carry out structural analyses for hull structures using mostly the finite element method (FEM). It was an interesting and inspiring time for Mikko, and he was able to see the actual vessels being built not more than 50 metres away from his office. Ever since, he has been working with structural design and analyses in one way or another.

Mikko enjoys the outdoors and tries to spend as much time in the nature as possible, whether it's hiking, fly fishing or just hanging out. He is also an enthusiastic badminton player. ■