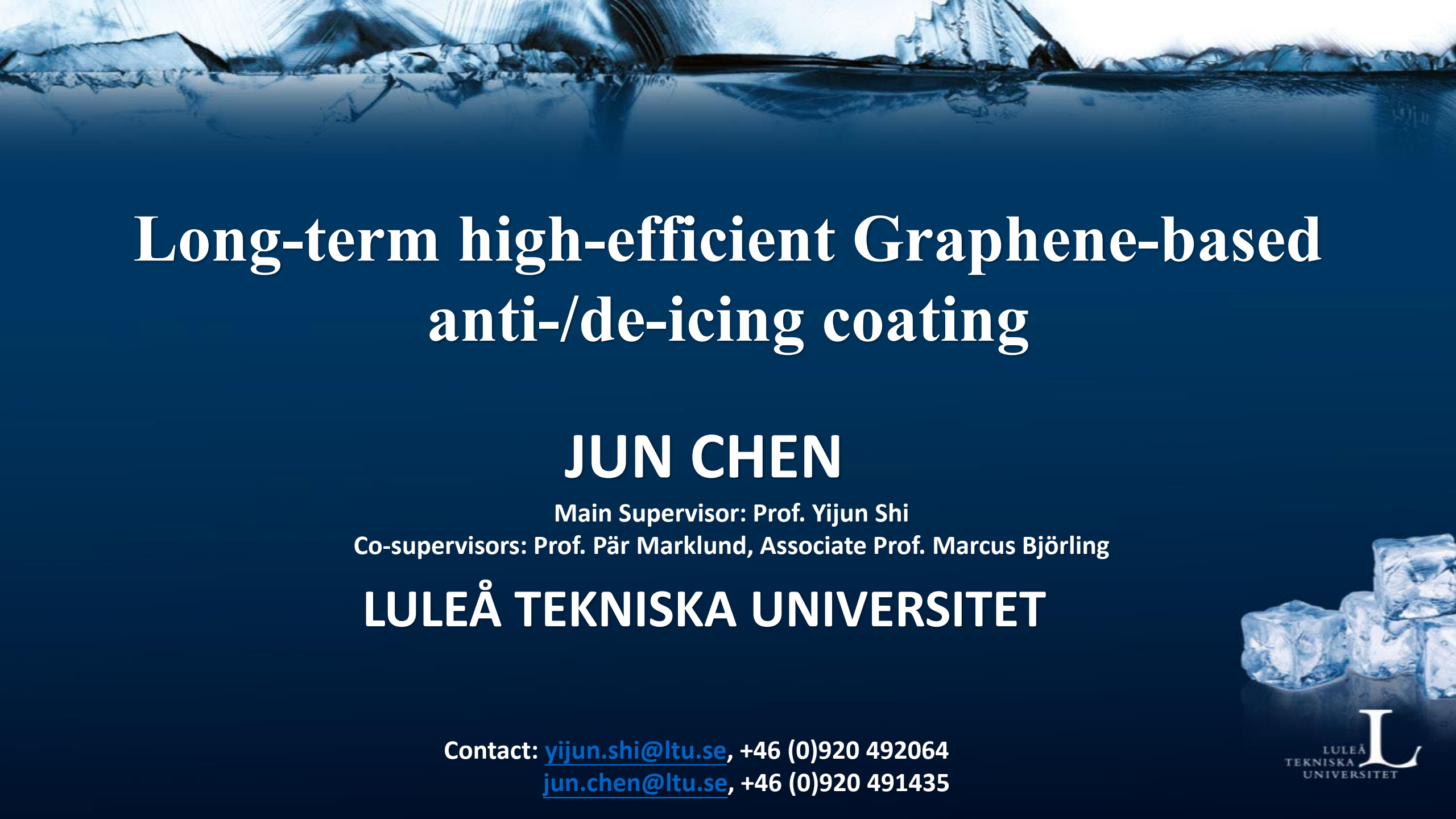




Long-term high-efficient Graphene-based anti-/de-icing coating

JUN CHEN

Main Supervisor: Prof. Yijun Shi

Co-supervisors: Prof. Pär Marklund, Associate Prof. Marcus Björling

LULEÅ TEKNISKA UNIVERSITET

Contact: yijun.shi@ltu.se, +46 (0)920 492064
jun.chen@ltu.se, +46 (0)920 491435



Introduction



Our team



Prof. Yijun Shi



A. Prof. Marcus Björling



Prof. Pär Marklund



Mr. JunChen

Tribolab



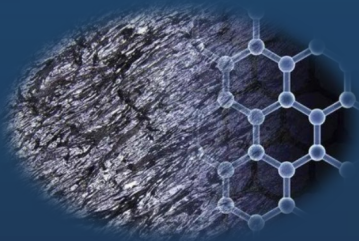
Materials



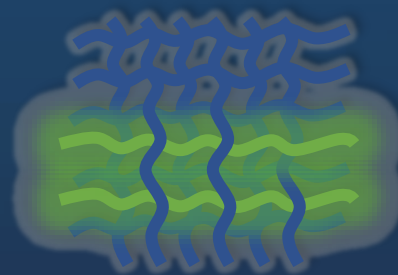
Advantages

One layer(easy to repair and maintain)
No Voc solvents and gas(Full water solution)
Lower power consumption(24V)

Materials



Graphene

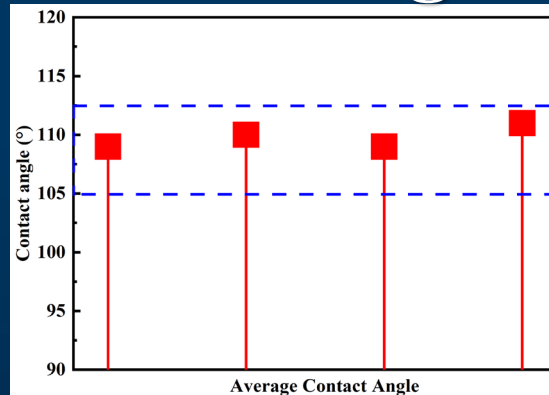


Polymer resin

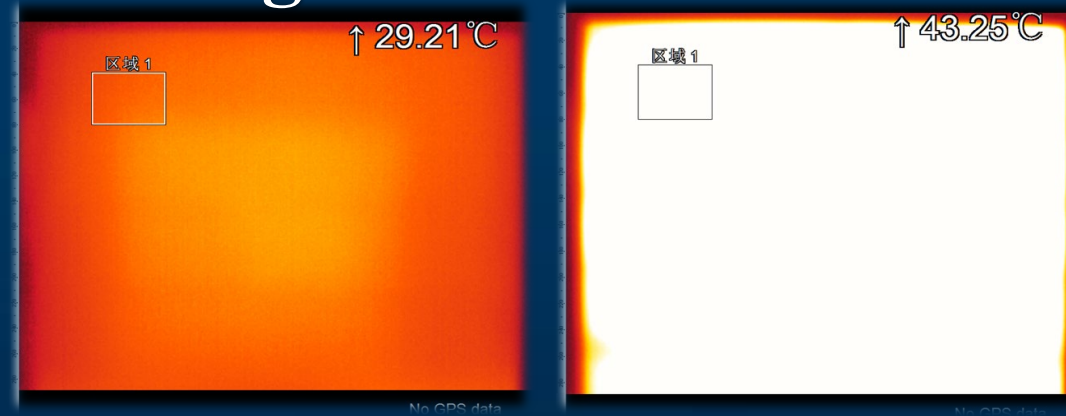


Surface properties

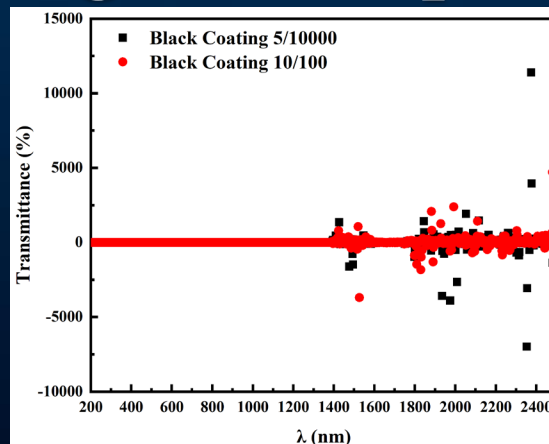
Contact angle



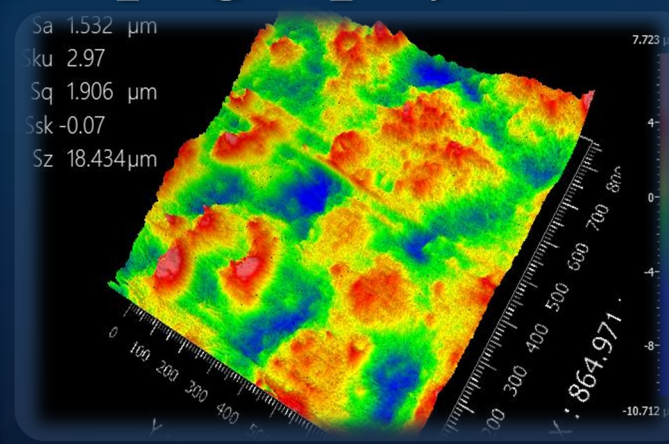
Heating distribution



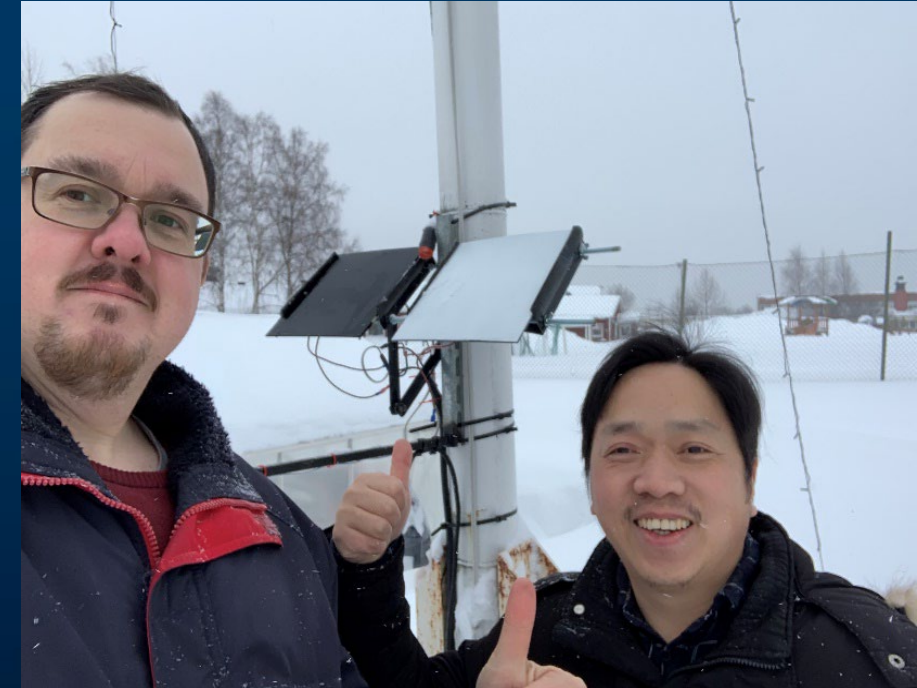
Light absorption



Topography



Field test outdoor in 2020-2021, Lulea

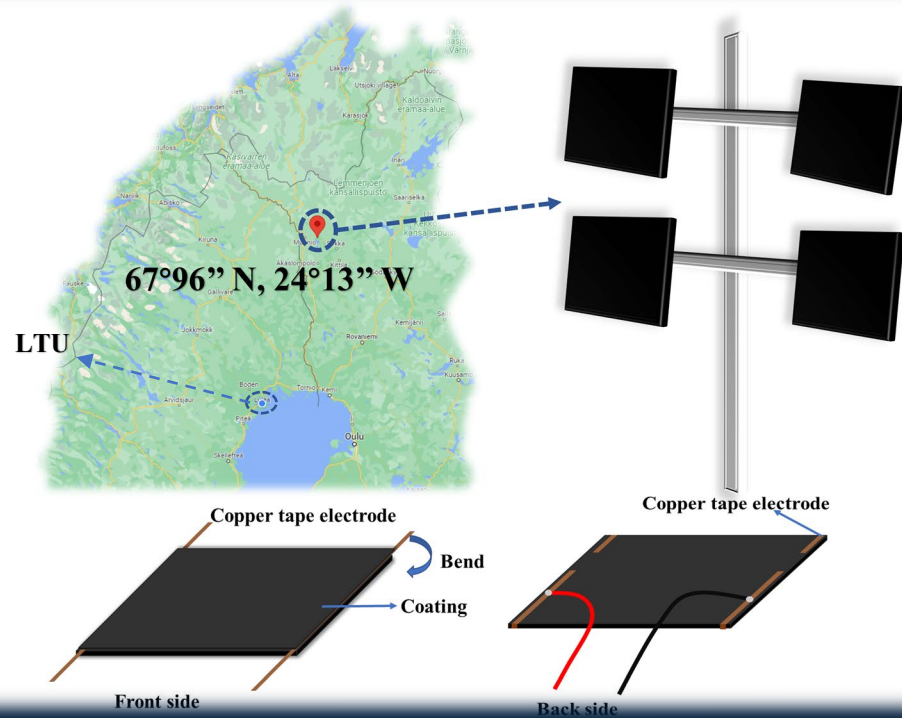


Activities: Monitor the test through remote control of the camera

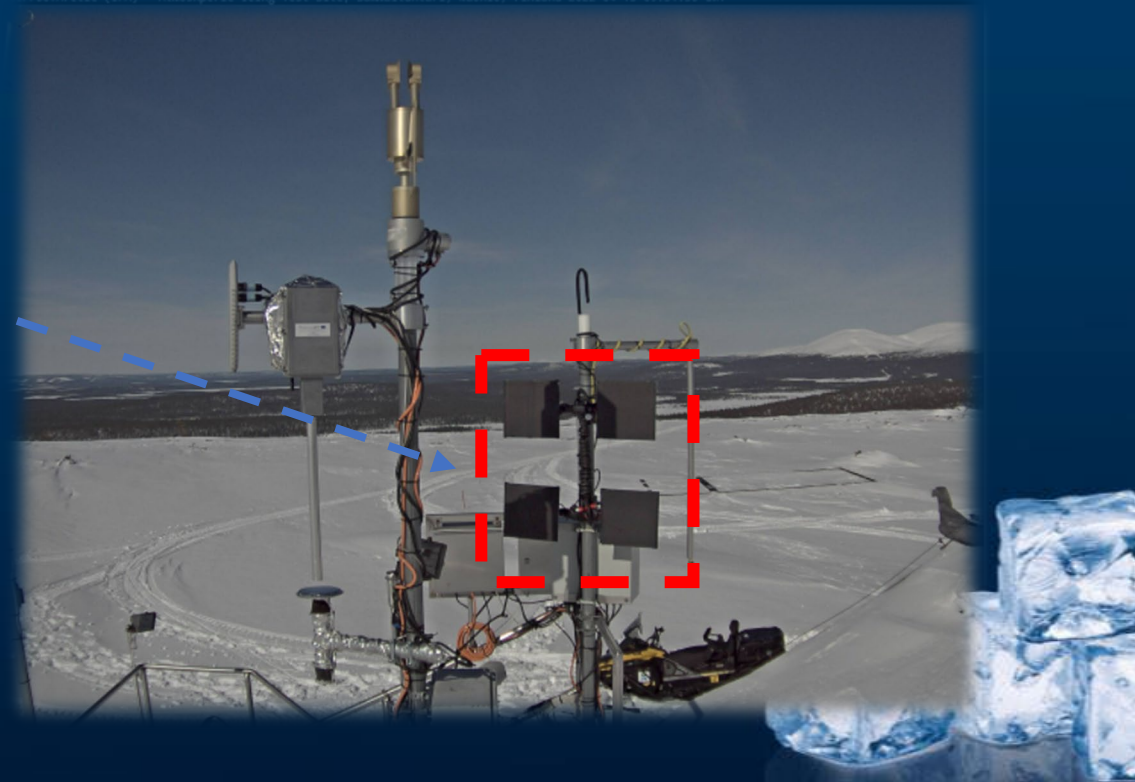
Aim: Test anti-/de-ice performance together with the weather condition, power consumption recording

Field test outdoor in 2021-2022, Finland

Location



Photo



Field test outdoor in 2021-2022, Finland

10/22/2021



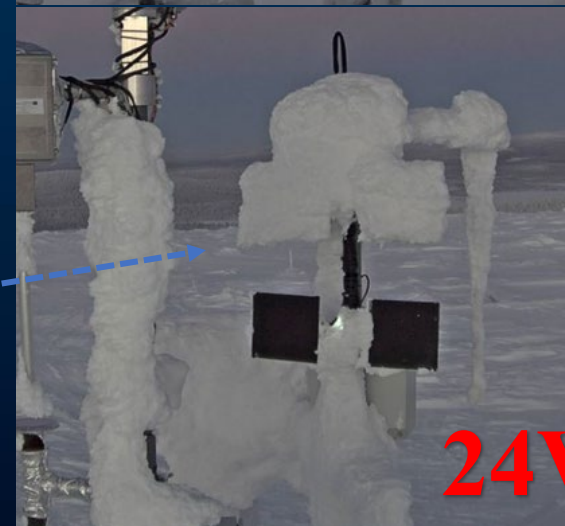
11/01/2021 Snowing



11/29/2021 Night

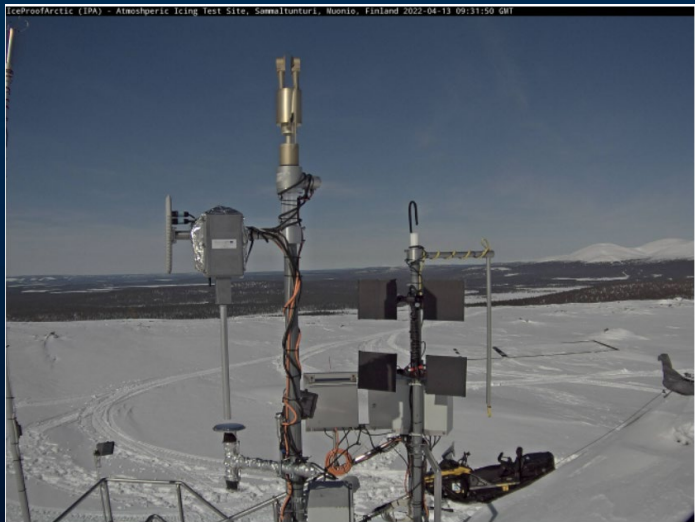


12/06/2021



Field test outdoor in 2021-2022, Finland

Challenge?



The background of the slide is a deep blue gradient. At the top, there is a horizontal band showing a close-up of an iceberg's surface with jagged, crystalline ice textures. Below this, the background is a solid dark blue. In the bottom right corner, there is a small cluster of several ice cubes and the Luleå University of Technology logo.

Winter Wind 2022

Thank you

LULEÅ TEKNISKA UNIVERSITET

Contact: yijun.shi@ltu.se, +46 (0)920 492064
jun.chen@ltu.se, +46 (0)920 491435

