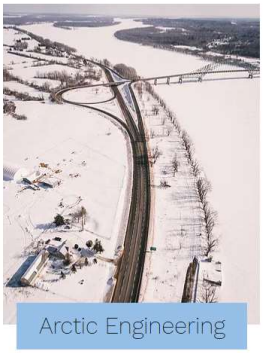
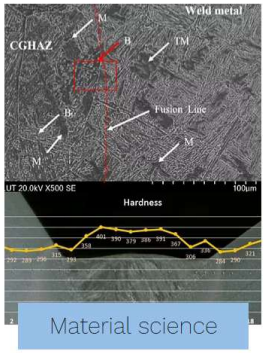
International Conference on Design and Manufacturing of Arctic Structures (DMAS-2019)

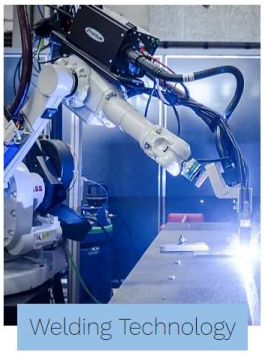
2.10.2019, hall 1318, LUT University, Lappeenranta, Finland

The DMAS-2019 International Conference, organized by LUT University will take place on 2 October 2019 at LUT University, Finland, hall 1318, 9:30-15:00. The conference aims to provide a forum for networking and knowledge exchange among scientists, researchers, and industry related to manufacturing, welding and joining of Arctic structures, including renewable energy structures. More information: https://www.efrea.info/dmas-2019


Arctic Engineering



Material science


Welding Technology


Wind energy

The conference provides exiting opportunity to share research results in a form of presentations and posters. About 20 presentations and several posters on the following topics will be presented at the conference:

- Welding of HSS and UHSS for low temperature conditions
- Steels structures and wind generator design
- Adaptive and robotic welding
- Welding procedures for wind generators
- Welding in extreme conditions
- Fatigue life estimation
- Ice-resistant and anticorrosion coatings

Accepted papers will be published in the journal of Key Engineering Materials (listed in Scopus). The conference is endorsed by Finnish Welding Society (SHY). The official language of the Conference is English with translations if needed. The papers and presentations will be held in English.

In case of questions, please contact:

Chief Editor and organizer of the conference: Associate Prof. Paul Kah: paul.kah@lut.fi

Assistant Editor Dr. Pavel Layus: pavel.layus@lut.fi

Suomen Hitaustekniikan Yhdistys
The Welding Society of Finland

Conference agenda

TIME	TOPIC
9:30	**Registration and coffee**
10:00	**Opening words**
10:05	***Session 1: Welding of HSS and UHSS for low temperature conditions*** *chair: Associate Prof. Paul Kah, Prof. Victor Karkhin*
11:50	**Lunch and poster session**
13:00	***Session 2: Robotic welding and other technology*** *chair: Docent Heidi Piili, Dr. Tuomas Skriko*
14:00	***Session 3: Welding procedures for wind generators*** *chair: Associate Prof. Teemu Turunen-Saaresti, Prof. Victor Elistratov, Dr. Pavel Layus*
14:45	**Closing words**
15:00	**End of the conference**

Conference agenda

TIME	TOPIC	PRESENTER
9:30	**Registration and coffee**	
10:00	**Opening words**	Vice-Rector of Research, Prof. Jari Hämäläinen
	Session 1: Welding of HSS and UHSS for low temperature conditions *chair: Associate Prof. Paul Kah, Prof. Victor Karkhin*	
10:05	*Pavel Layus, Francois Njock Bayock, Eric Mvola Belinga, Paul Kah. High strength steel welding challenges for Arctic wind turbines.*	
10:20	*Sergey Parshin, Paul Kah, Alexey S. Maystro, Irina V. Ivanova. Composite wire with nanodispersed particles of hexaboride and trifluoride lanthanum for arc welding of high-strength and cold-resistant steels*	
10:35	*Ryabov V.V., Knyazyuk T.V. Peculiarities of steel requirements for wind power plants*	
10:50	*Victor Karkhin, Alexey Levchenko, Egor Starobinskii, Paul Kah. Effect of Microstructural Inhomogeneity on Hydrogen Diffusion from the Weld Metal to the Base Metal*	
11:05	*Eric Mvola Belinga, Paul Kah, Pavel Layus, Francois Njock Bayock, John Hald. Dissimilar S355 and S690 Steels T-Joint Characterization*	
11:20	*Antti Ahola, Joona Kauppila, Timo Björk. Fatigue strength assessment of welded components in the marine environment – a case study on a non-load carrying fillet-welded joint*	
11:35	*Tuomas Skriko, Antti Ahola, Timo Björk. Static strength of as-welded and post-weld treated ultra-high-strength steel filled weld joints in room and arctic temperature*	
11:50	**Lunch and poster session**	
	Session 2: Robotic welding and other technology *chair: Docent Heidi Piili, Dr. Tuomas Skriko*	
13:00	*Sakari Penttilä, Hannu Lund, Paul Kah. Effect of Welding Torch Position Error to Weld Quality and Quality Verification by Using Laser Triangulation Measurement*	

13:15	*Markus Korpela, Heidi Piili, Antti Salminen. Materials Used by the Finnish Metal and Mechanical Engineering Industry from the Perspective of Metal Additive Manufacturing*
13:30	*T. I. Bobkova, A.K. Mazeeva, E.A. Uvarova, P.A. Kuznetsov, A.V. Anisimov. Application Possibilities of the Polymer Composite Material Based on Ultra-High Molecular Polyethylene for the Anti -Icing Coatings of Wind Generators Structural Elements*
13:45	*Hannu Lund, Sakari Penttilä, Paul Kah. A knowledge-based high-strength steels welding distortion estimation method for a multirobot welding off-line programming and simulation software*
14:00	**Coffee break**
	Session 3: Welding procedures for wind generators *chair: Associate Prof. Teemu Turunen-Saaresti, Prof. Victor Elistratov, Dr. Pavel Layus*
14:15	*Alexander Bolshev, Sergey Frolov, Alexander Panfilov. Mathematical Modelling of External Loads on Ice-Resistant Arctic Wind Power Plants*
14:30	*Aki Grönman, Teemu Turunen-Saaresti. Effects of Reynolds Number and Stator-Rotor Interaction on Vane-To-Vane Flow Development in Vaned Savonius Turbines*
14:45	*Alexander S. Bolshev, Victor V. Elistratov, Roman S. Denisov, Michael A. Konishchev. Justification of Requirements for Adaptation Measures, Technologies and Materials by Designing Arctic Wind Turbines*
15:00	*Viktor Elistratov, Alexander Panfilov, Stanislav Petrov. Features of the support structures creation for arctic modular wind turbines*
15:15	**Closing words**