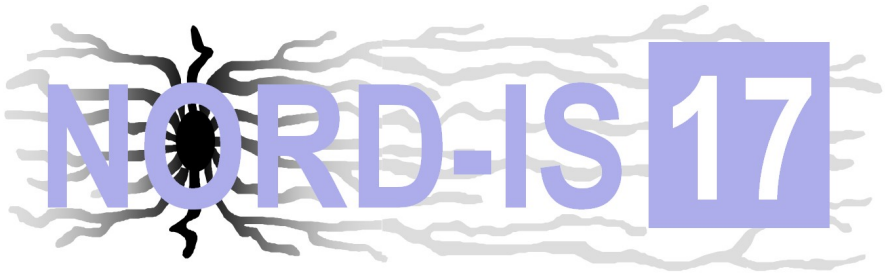
25th Nordic Insulation Symposium



Program

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June 19-21, 2017
Västerås, Sweden

http://nordis.org/

Nordic Insulation Symposium on Materials, Components and Diagnostics

ORGANIZING COMMITTEE

ADVISORY COUNCIL

PROGRAM

Monday 19th June

08:30-09:00 **Registration**

09:00 **Symposium opening** by the chairman Hans Edin

Invited lecture, ***Epoxy-based Nanodielectrics: Can we do better?***
by Professor Alun Vaughan, *University of Southampton, UK.*

10:10 coffee break

10:40 **Session 1 – HVDC Cables**
Session chair: Frank Mauseth

DC conductivity of polyethylene and crosslinked polyethylene measured with a dynamic temperature program
Hossein Ghorbani[1], Carl-Olof Olsson[2], Marc Jeroense[3]
[1] DONG Energy Wind Power, Copenhagen, Denmark
[2] ABB AB, Corporate Research, Västerås, Sweden
[3] NKT High Voltage Cables, Karlskrona, Sweden

Local Electric Field in Mass-Impregnated HVDC Cables
Gunnar Håkonseth[1,2], Erling Ildstad[1], Knut Magne Furuheim[2]
[1] Norwegian University of Science and Technology, NTNU, Trondheim, Norway
[2] Nexans Norway AS, Halden, Norway

The influence of thermal properties on power transmission characteristics of HVDC cables - a factor analysis
Björn Sonerud, Wendy Loyens
Borealis AB, Stenungsund, Sweden

11:40 lunch

13:00 **Session 2 – Gas discharges**
Session chair: Petri Hyvönen

Discharge characteristics in inhomogeneous fields under air flow
Stephan Vogel, Joachim Holbøll
Technical University of Denmark

Breakdown in short rod-plane air gaps under positive lightning impulse stress
Hans Kristian Hygen Meyer[1], Frank Mauseth[1], Martine Husøy[1], Atle Pedersen[2], Jonas Ekeberg[3]
[1] Norwegian University of Science and Technology
[2] SINTEF Energy Research
[3] ABB Switzerland Ltd.

SI streamer initiation and breakdown in pressurized technical air in sphere-plane geometries
Olof Hjortstam, Håkan Faleke, Mats Larsson
ABB AB, Corporate Research, Västerås, Sweden

Investigation of a Flat Connector Concept Potential for Low and Medium Vacuum Conditions
A.B.J.M. Driessen[1], J. van Duivenbode[1,2], P.A.A.F. Wouters[1]
[1] Eindhoven University of Technology, the Netherlands
[2] ASML, Veldhoven, the Netherlands

14:20 coffee

14:40 **Session 3 – Materials (I)**

Session chair: Erling Ildstad

Morphology development, structure and dielectric properties of biaxially oriented polypropylene

Ilkka Rytöluoto[1], Mikael Ritamäki[1], Antonis Gitsas[2], Satu Pasanen[3], Kari Lahti[1]

[1] *Tampere University of Technology, Laboratory of Electrical Energy Engineering, Finland*

[2] *Borealis Polyolefine GmbH, Innovation & Technology, Austria*

[3] *VTT Technical Research Centre of Finland, Finland*

Examination of Longitudinal AC Breakdown Strength of Dielectric Surfaces as a function of Elastic Modulus

Emre Kantar[1], Sverre Hvidsten[2], Erling Ildstad[1]

[1] *Department of Electric Power Engineering, Norwegian University of Science and Technology*

[2] *Department of Electric Power Technology, SINTEF Energy Research, Norway*

Prediction of dielectric constant and loss for some polypropylene - additive compounds

Sari J. Laihonen, Joakim P.M. Jämbeck, Mikael Unge

ABB AB, Corporate Research, Västerås, Sweden

Influence of manufacturing process on electrical properties of LDPE-GnP nanocomposites

Karolina Gaska, Xiangdong Xu, Roland Kádár, Bahram Ganjipour,
Avgust Yurgens, Stanislaw Gubanski

Chalmers University of Technology, Göteborg, Sweden

16:00 end of sessions

19:00 departure of M/S Havsörnen from Västerås harbour

The symposium dinner is a buffet onboard the boat, during a tour of some of Lake Mälaren.

Tuesday 20th June

09:15 **Session 4 – Materials (II)**

Session chair: Kari Lahti

Application of a simple method for determining the equilibrium resistivity of dielectric liquids

Joachim Schiessling, Nils Lavesson, Lars Walfridsson

ABB AB, Corporate Research, Västerås, Sweden

DC Conductivity Measurements of LDPE: Influence of Specimen Preparation Method and Polymer Morphology

M. Karlsson[1], X. Xu[2], K. Gaska[2], H. Hillborg[3], S. M. Gubanski[2], U. W. Gedde[1]

[1] *Fibre and Polymer Technology, KTH - Royal Institute of Technology, Stockholm, Sweden*

[2] *Materials and Manufacturing Technology, Chalmers University of Technology, Gothenburg, Sweden*

[3] *Power Technology, ABB AB, Corporate Research, Västerås, Sweden*

Electrical Conductivity and Moisture Uptake Studies of Low Density Polyethylene Octylnanosilica Composite

S. Virtanen[1], A.S. Vaughan[1], S.Yang[2], F. Saiz[2], N. Quirke[2]

[1] *ECS, University of Southampton, Southampton, United Kingdom*

[2] *Department of Chemistry, Imperial College, London, United Kingdom*

Robust measurements of electric conductivity in polyethylene based materials: measurement setup, data processing and impact of sample preparation
X.Xu[1], M. Karlsson[2], K. Gaska[1], S. M. Gubanski[1], H. Hillborg[3], U. W. Gedde[2]
[1] *Materials and Manufacturing Technology, Chalmers University of Technology, Gothenburg, Sweden*
[2] *Fibre and Polymer Technology, KTH - Royal Institute of Technology, Stockholm, Sweden*
[3] *Power Technology, ABB AB, Corporate Research, Västerås, Sweden*

10:35 coffee

11:00 **Session 5 – Testing**

Session chair: Juha Laakko

Lightning impulse (LI) breakdown testing of a rubber-epoxy interface
Cecilia Forssén, Anna Christerson, Daniel Borg
ABB AB Corporate Research, Sweden

Reconfiguration of 3 MV Marx Generator into a Modern High Efficiency System
Joni V. Klüss[1], William Larzelere[2]
[1] *Mississippi State University, USA*
[2] *Evergreen High Voltage, USA*

11:40 lunch

13:00 **Session 6 – Condition assessment**

Session chair: Joachim Holbøll

Gas measurements as a means for identification of partial discharges in XLPE HV cable insulation
Patrick Janus, Hans Edin, Kruphalan Tamil Selva
KTH - Royal Institute of Technology, Stockholm, Sweden

Breakdown Behaviour of Damaged Low-Voltage Cables: Laboratory Experiments and Field Experience
B. Kruizinga[1], P.A.A.F. Wouters[1], E.F. Steennis[1,2]
[1] *Eindhoven University of Technology, The Netherlands*
[2] *DNV GL, Arnhem, The Netherlands*

Review of Partial Discharge and Dielectric Loss Tests for Hydropower Generator Bars
Torstein Grav Aakre[1], Erling Ildstad[1], Sverre Hvidsten[2], Arne Nysveen[1]
[1] *Department of Electric Power Engineering, Norwegian University of Science and Technology*
[2] *SINTEF Energy Research, Trondheim, Norway*

14:00 Closing discussion

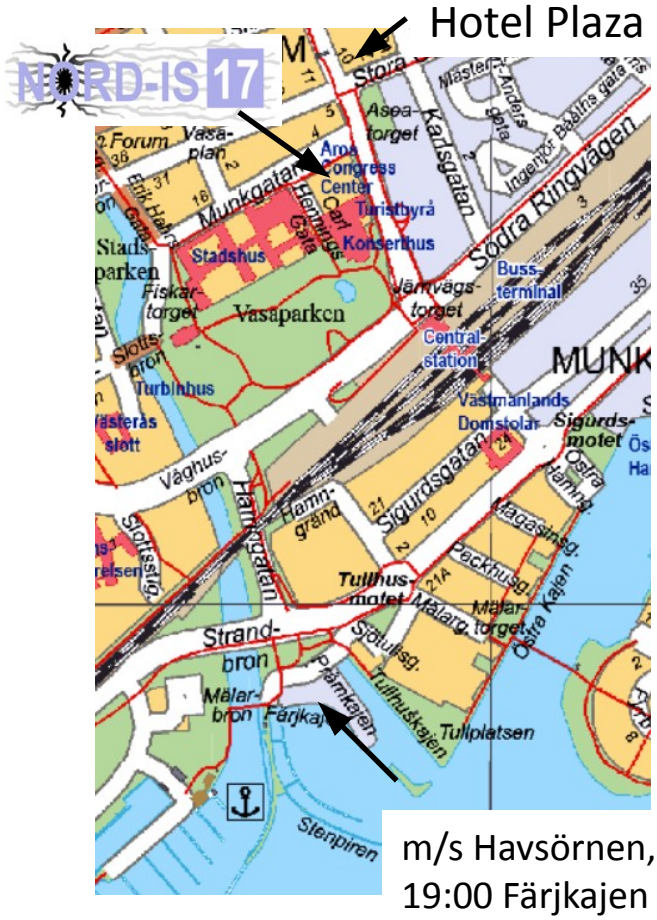
14:15 coffee

15:00 departure (walking) to ABB Corporate Research Center

Wednesday 21st June

	Study visit: ABB Ludvika: ABB Transformers, bushing factory and UHV laboratory (subject to availability!). Including short presentations on related topics.
08.15	bus departs to Ludvika
14.00	bus departs from Ludvika to Västerås (hotel) and then continues to Arlanda airport
Ca 15.30	arrival to Västerås
Ca 16.45	arrival at Arlanda airport

Hotel Plaza



m/s Havsörnen,
19:00 Färjkajen 1