

International workshop

„Nano-lime for conservation of stone, plasters and architectural surfaces“



Pöide church, Saaremaa, Estonia. See more: <http://kirikud.muinas.ee/?page=3&subpage=134>

Workshop is dedicated to nanotechnology that has been taken into use in conservation of historical interior finishing (incl painted surfaces). The method is not yet practised in Estonia although we have for decades searched for suitable consolidation agent for the church plasters and wallpaintings. The potential solution may be the innovative nanolime.

The tutors of the workshop are the teachers of Pardubice (Czech Republic) University who have been the leading partners of cross-European project on development and testing of nanotechnology and have significant practical and theoretical experience in the field.

The planned *workshop* includes both theory and practice, the methodology will be tested *in situ* at Pöide medieval church in Saaremaa.

Tutors: **Jan Vojtechovsky** (Pardubice University Conservation Department) and **Karol Bayer** (chemist, Dean of Pardubice University Conservation Department)

Coordinaator: Hilkka Hiiop

Time: 04.-08. september 2016

Place: Pöide Church, Saaremaa

Participants: ca 20-25 persons (EKA, TKK, conservators and heritage professionals) + tutors

Basic characterisation of nanolime:

The basis for nanolime conservation materials are calcium hydroxide nanosuspensions in organic solvents, mainly in various alcohols as ethanol or isopropanol. The possibilities of their preparation/production are different and the research work focused on nanolime suspension started in 1990ths. The particle size of calcium hydroxide particles in the common, different nanolime suspensions is ranging between 50 to 300 nm. Their potential use in the field of cultural heritage conservation is nowadays primarily in the consolidation of porous limestone, plaster, mortar and wall paintings.

Practical workshop:

The main topic of the workshops is a presentation and explanation of the use of lime nanomaterials in the conservation of calcareous porous materials - stone, architectural surfaces, building heritage (plaster, mural paintings, mortar, stucco) including practical demonstration as well as the theoretical background.



PROGRAMME:

4th of Sept evening - arriving to Saaremaa

5th of Sept

Morning session: lectures

Juhan Kilumets, Eva Mölder, Hilikka Hiiop

Introduction to the church (history, conservation history, condition)

Karol Bayer

Introduction to nanolime technology – basic characteristics, production, properties and potential use

Afternoon session: practical workshop (3 h)

Jan Vojtechovsky, Karol Bayer

Introduction to the workshop topic and timetable. Preparation of the worksite, understanding the problem, documenting the situation

6th of Sept

Morning session: lectures

Testing and optimizing of nanolime application in laboratory and on-site scale (methods, results, conclusions):

For stone conservation - Karol Bayer

For wall painting conservation - Jan Vojtechovsky

Case studies of nanolime application:

Stone conservation - Karol Bayer

Wall painting conservation - Jan Vojtechovsky

Afternoon session: practical workshop (2-3 h)

Testing of nanolime on site - application on stone and plasters

7th of Sept

Morning session: round tour in Saaremaa:

Lümanda lime park

Kihelkonna Church (after conservation)

Valjala Church

Afternoon session: practical workshop (2-3 h)

Testing of nanolime on site - application architectural surfaces (wall paintings)

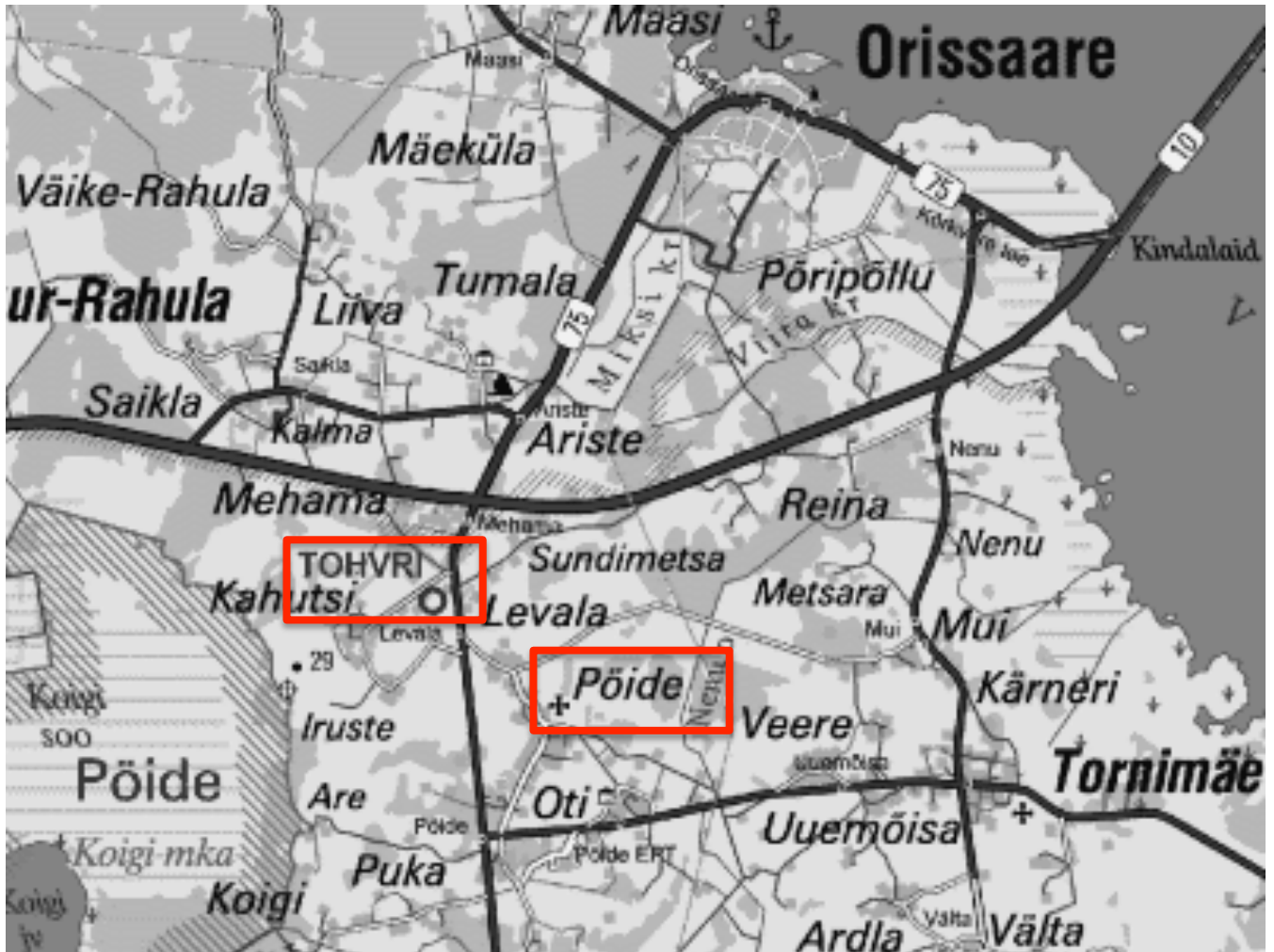
8th of Sept

Morning session: Final discussion, conclusions

Afternoon: travel back to Tallinn

ACCOMMODATION:

**TOHVRI TOURISM FARM
PÕIDE PASTORATE**



SEE MORE: <http://www.saaremaa.ee/tohvri/eng/?lang=eng>

Food is provided by organizers

PARTICIPANTS:

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(+5 students from Tartu Art College)