Project 'Establishing standards for allowable microclimatic variations for polychrome wood'

March 1, 2007 – April 30, 2010



The project is supported by a grant from Iceland, Liechtenstein and Norway through the European Economy Area Financial Mechanism.

Participants

Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences - ICSC, Krakow

principal investigators - Lukasz Bratasz, Michal Lukomski, Roman Kozlowski, Marcin Strojecki doctoral students – Lukasz Lasyk, Bartosz Rachwal

Norwegian Institute for Cultural Heritage Research - NIKU, Oslo

principal investigators: Annika Haugen and Tone Marie Olstad

Our consultants

Marion Mecklenburg
Museum Conservation Institute,
The Smithsonian Institution

Stefan Michalski the Canadian Conservation Institute

Our institute

- a medium-size public research unit
- field of activity physical chemistry of interfacial phenomena
- since 1986 research on cultural heritage

in broad international cooperation including 7 projects within the European Commission Framework Programmes

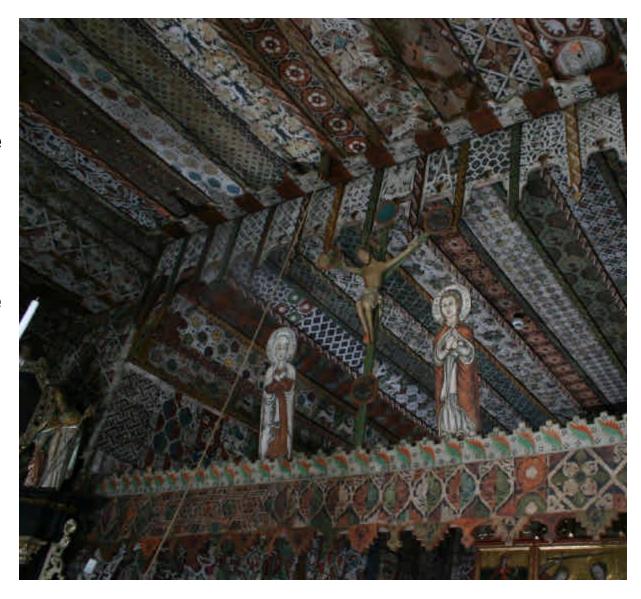
Detailed research areas:

- non-destructive monitoring of physical response of materials
- moisture sorption and transport in historic materials
- microclimate monitoring in historic buildings especially impact of heating systems
- numerical modelling of environmentally induced stress
- acoustic emission, laser interferometry, thermography

We collaborated with experts of NIKU before

conservation of paintings in the Debno church, World Heritage Site, 2000

FRIENDLY HEATING
- comfortable to people
and compatible with
conservation of art
works preserved in
churches, EC 5FP
project, 2002-2005



Project tasks

- Laboratory work to establish allowable climate variations for polychrome wood by direct tracing paint layer damage using laser inteferometry and computer modeling (months 1-24)
- 2. Monitoring the altarpiece in the church in Hedalen, Norway and panel paintings in the National Museum in Krakow, to trace possible development of damage in the paint layers (months 25-33)

Project tasks

- 3. Dissemination of project's results (months 34-37):
- publications
- an international workshop in Oslo, a joint event with NIKU and COST Action IE0601
- a national workshop in Warsaw (mainly on heating churches)
- preparation of guidelines on optimum preservation of polychrome wood

Publications

- R. Kozlowski, L. Bratasz, L. Lasyk, and M. Lukomski, "Allowable microclimatic variations for painted wood: direct tracing of damage development", Proceedings of the Symposium "Facing the Challenges of Panel Paintings Conservation: Trends, Treatments and Training," eds. A.S. Chui, A. Phoenix, Getty Conservation Institute, Los Angeles, available on line in 2010.
- 2. L. Lasyk, M. Lukomski, T. M. Olstad, and A. Haugen, "Electronic Speckle Pattern Interferometry (ESPI) for the condition surveys of painted wood: monitoring the altarpiece in the church in Hedalen, Norway", submitted to *Studies in Conservation*
- 3. L. Lasyk, M. Lukomski, and L. Bratasz, "Simple ESPI for the investigation of art objects", submitted to *American Journal of Physics*
- 4. in preparation "Allowable variations of RH for painted wood"

All manuscripts, posters or conference presentations are available at our website www.heritagescience.pl