Contribution ID: **12** Type: **Poster**

Neutron computed tomography for determining the spatial distribution of carbolineum in wooden artefacts of cultural heritage

Monday, 9 September 2013 18:00 (3 hours)

Some wooden artefacts of cultural heritage were treated with carbolineum as a preservation agent like the baroque epitaph Reyer (1704) at the St. Laurentius church in Tönning (Schleswig-Holstein, Germany). The subsequent constant migration of carbolineum through the layers of paint to the surface has had a detrimental effect on the aesthetic appearance of the epitaph.
Carbolineum is an oily, water-insoluble, flammable, dark brown mixture of coal tar oil components. Due to its content of polycyclic aromatic hydrocarbons (PAH), which are classified as carcinogenic and harmful to the environment, the use of carbolineum has been widely forbidden.
The aim of the project is to develop an exemplary conservation treatment that will reduce the toxic residue within the historical wooden object. Thus, the spatial distribution of carbolineum inside the artwork was determined by neutron computed tomography (CT) at the NECTAR facility of the Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM-II) of the Technische Universität München. The neutron CT revealed a heterogeneous density distribution with enriched concentrations near the surface. These results will be compared with X-ray CT showing more spatial details and small metal reinforcements.

Primary author: Dr NUSSER, Amelie (Rathgen-Forschungslabor)

Co-author: Dr OSTERLOH, Kurt (BAM Federal Institute for Materials Research and Testing)

Presenter: Dr NUSSER, Amelie (Rathgen-Forschungslabor)

Session Classification: Poster Session

Track Classification: NINMACH