

Neutron Imaging of Archaeological Waterlogged Wood

Wednesday, 11 September 2013 16:00 (20 minutes)

When waterlogged wood is found, the main challenge for the curator is to dry the wood without deteriorating the object. This is often done by replacing some of the water by polyethylene glycol (PEG), and then removing the remaining water by freeze-drying, with the PEG serving as a consolidant. The present study is an attempt to locate the PEG by means of neutron imaging. Eighteen samples of waterlogged alder with a size of 2 x 1 x 6 cm treated in different ways have been studied. If the PEG cannot be distinguished from the wood, the relative amount of PEG soaked in each sample, depending on the duration of impregnation, and its distribution in the wood can be clearly determined. Furthermore, owing to the large difference in neutron attenuation between the wood and the cracks (air), neutron tomography can be used very effectively to study the distribution and amount of such defects after the conservation treatment.

Primary author: Mr DEMOULIN, Thibault (ETH Zurich)

Co-authors: Dr SCHILLINGER, Burkhard (FRM II); Prof. GEBHARD, Rupert (Dr.)

Presenter: Mr DEMOULIN, Thibault (ETH Zurich)

Session Classification: Neutron Imaging V

Track Classification: NINMACH