

# Success story

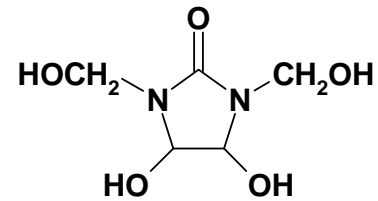


Department of Wood Biology and Wood Technology, University of Göttingen, Germany

## INTERLACE TREATMENT: A wood modification process transferred from the textile industry



The aim of wood modification is to improve disadvantages of wood, like low dimensional stability, durability or resistance against UV light, by changing the cellular and molecular structure of wood. This improvement of disadvantages can be achieved by thermal or chemical modification. In the past years, various methods of chemical modification were investigated, mostly acetylation and resin treatments. Nowadays, one of the most promising techniques for chemical wood modification seems to be the use of high finishing agents from the textile industry. Since 2001, the research group at the Institute of Wood Biology and Wood Technology in Göttingen have investigated various chemicals for the use in wood modification. One promising chemical is one that has been applied in the textiles industry for some time- Dimethyloldihydroxyethyleneurea (DMDHEU)



Chemical structure of DMDHEU (Dimethyloldihydroxyethyleneurea)

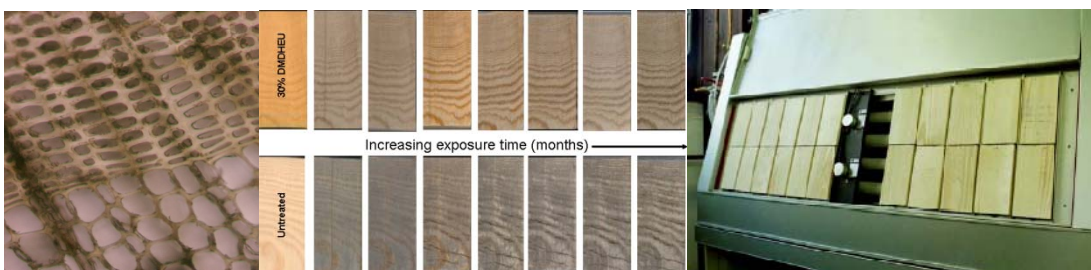
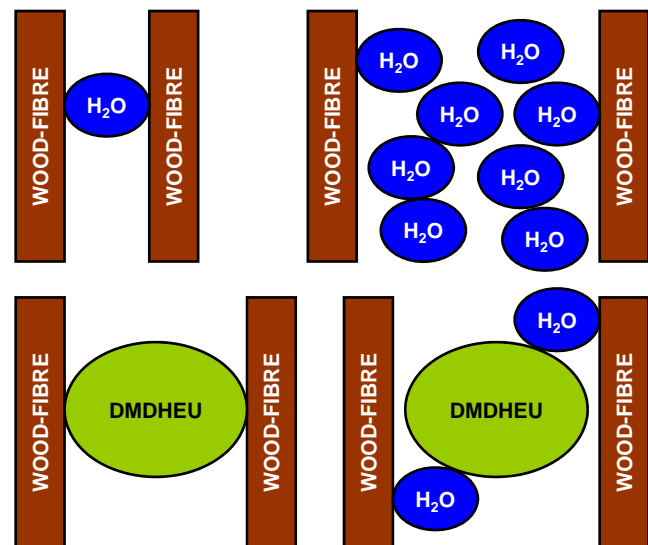
### DMDHEU

- Causes easy care properties
- Is a bulk product
- Is a low formaldehyde release agent

### Interlace Treatment

Interlace Treatment is a process of chemical wood modification where derivatives from urea and glyoxal are used. DMDHEU and its derivatives are the most common agents in the use of textile finishing. DMDHEU can react with the cellulose based materials, like cotton, viscose or wood.

In wood the reaction of DMDHEU is formed as cross-linking with wood or polycondensation. This causes in a bulking of wood cell wall and a reduced swelling of cell wall after water saturation.



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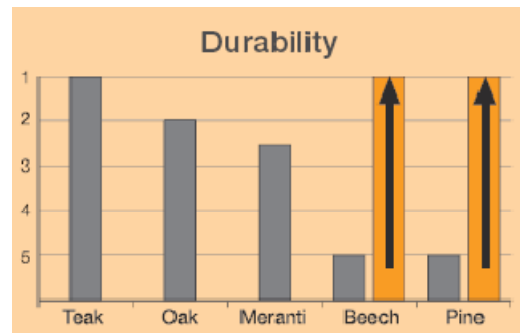


Among the properties imparted to wood are:

- ASE higher 60% (max.)
- Equilibrium moisture content only slightly reduced
- Surface hardness (Brinell) increased (up to 300%)
- Bending strength is unchanged
- High durability against soft, white and brown rot

Commercial development is underway

Interlace Treatment is a process offering considerable potential for improved timber treatments. The research team at Göttingen has demonstrated a wide range of improved properties, with treatments carried out to semi-commercial scale. The potential of the treatment was recognized in the award of the Schweighofer Innovation Prize in 2007. The commercial application of DMDHEU Interlace treatments is being explored by BASF under the trade name Belmadur. Early results are encouraging, with further advances and sales expected in the near future.



Dr. Andreas Krause and Professor Holger Militz receiving the Schweighofer Innovation Prize for wood products in 2007



The research team at Göttingen is led by Professor Holger Militz, with several postgraduate and post-doctoral staff engaged in development work.

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