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INVITATION TO THE LECTURE

On the topic:

INVESTIGATION OF THE REASONS OF THE INCREASE OF WOOD DURABILITY AFTER HEAT TREATMENT BASED ON CHANGES OF WETTABILITY AND CHEMICAL COMPOSITION

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Thursday 21. July 2005 at 13:00

Lecture Hall at the National Institute of Chemistry
Hajdrihova 19, Ljubljana

Heat treatment of beech wood has been performed by mild pyrolysis at different temperatures to investigate the reasons of its durability toward the white rot fungus *Coriolus versicolor*. Relationships between its increase of resistance to decay and its increase of hydrophobicity has been measured using contact angles measurements obtained by the Wilelhmy technique, while changes in chemical composition has been undertaken using ^{13}C MAS NMR and FTIR analysis. In the same time, evolution of extractives has been studied to evaluate the effect of these latter one on wood durability. The results obtained indicated that the hydrophobicity of wood and the extractives generated during heating are not at the origin of the improvement of wood resistance against *Coriolus versicolor*. The most probable explanation lies in the important changes of wood chemical composition due to hemicelluloses degradation and lignin polymeric network modification. These chemical modifications allows to explain the higher resistance of modified lignin polymer to fungal enzymes involved normally wood degradation, while hemicelluloses, which are genrally considered as an important nutritive source for fungi, are already degraded by the thermal treatment.

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Kindly invited!