

Wood surface modification for mussel imitation with protein adhesives

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Some tests were carried out to improve the adhesion properties of protein-based adhesives.

Tests were inspired by the mussel-developed adhesive, which is good performing

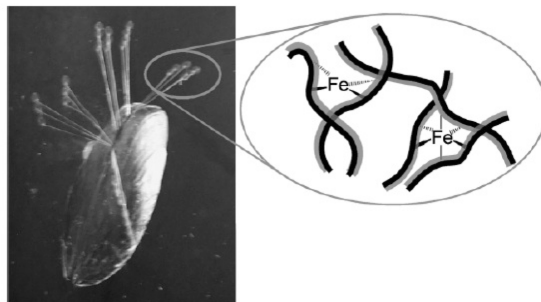
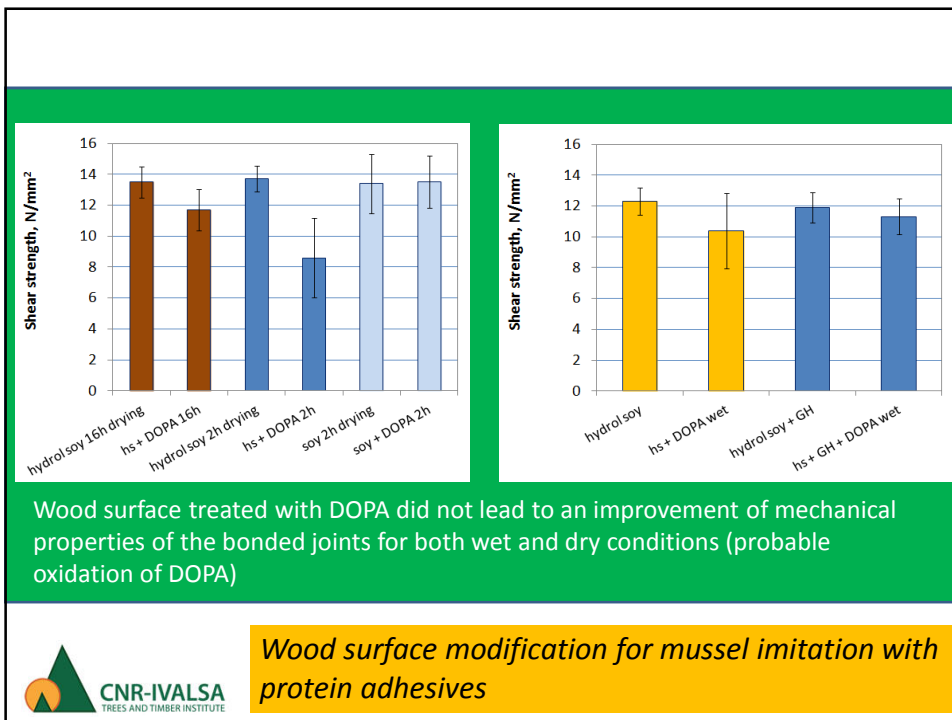
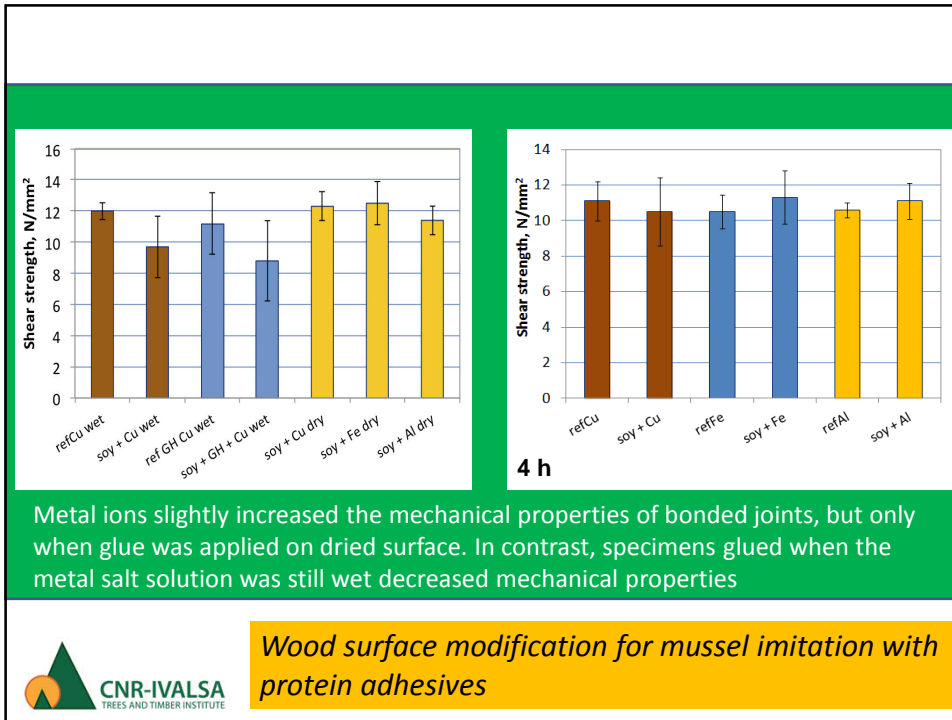


Figure 1: Proposed iron-protein cross-linking in marine mussel adhesive plaques.



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Conclusions

Test carried out with metal ions evidenced a slight increase in shear strength of joints and their use is promising, although a hardener is probably needed to increase performances in severe conditions.

In contrast, tests carried out with DOPA used as a primer were not successful, probably because of the oxidation of DOPA molecules which hindered the active sites for adhesion. An alternative could be to use DOPA in non-oxidizing conditions.



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