

Supplementary material

Micro-tensile behavior of Scots pine sapwood after heat-treatments in superheated steam or pressurized hot water

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Table S. 1: FTIR band assignments

Band (cm ⁻¹)	Assignment	References
809	vibration of mannan and C-H out-of-plane bending vibration in lignin	[1–3]
870	vibration of mannan and C-H out-of-plane bending vibration in lignin	[1–3]
898	Anomeric carbon group frequency in cellulose and hemicelluloses	[1,3]
1029	C-H in-plane deformation and C=O stretching vibration in cellulose, hemicelluloses and lignin	[1,4]
1053	C-O stretching in cellulose and hemicellulose	[5]
1105	O-H association band in cellulose and hemicellulose	[1,6]
1158	C-O-C asymmetric stretching vibration in cellulose and hemicelluloses	[1]
1231	C=O stretching in carbonyl groups and C-O-C asymmetric stretching vibration of aryl ether linkages	[1,7]
1264	C-O-C asymmetric stretching vibration of aryl ether linkages	[7]
1316	CH ₂ wagging mode in cellulose	[1–3]
1369	H-O-H bending in adsorbed water and C-H bending vibration in celluloses and hemicelluloses	[1,3,5,7]
1424	Aromatic skeletal vibrations in lignin and C-H in-plane deformation	[4,6]
1453	C=C stretching vibration in aromatic ring in lignin and CH ₂ vibration in cellulose	[3]
1509	Aromatic skeletal vibrations in lignin	[4,7,8]
1598	Aromatic skeletal vibrations in lignin and C=O stretching	[4,5,7,8]
1643	H-O-H deformation in absorbed water in carbohydrates and C=O stretching vibration in lignin.	[1,3,7]
1730	C=O stretching of acetyl or carboxylic acid	[2,7]

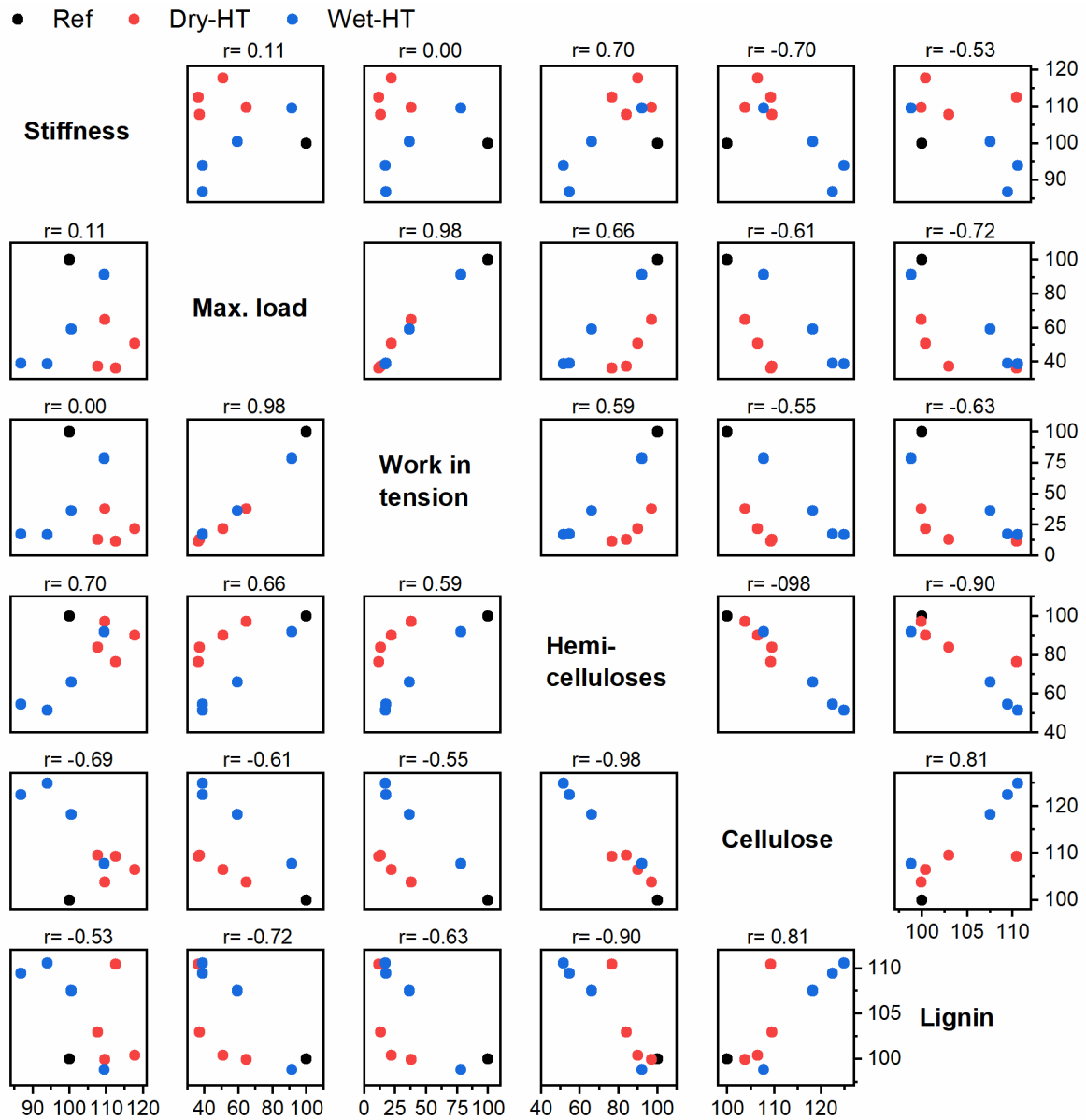


Fig. S. 1: Scatter matrix of the residual tensile properties and the chemical constituents (all in % of Ref) based on the tensile measurements in conditioned state. Each data point represents the average value per sample group (treatment technique and treatment duration). The Pearson correlation coefficient based on all data points is shown at the top of each scatter plot.

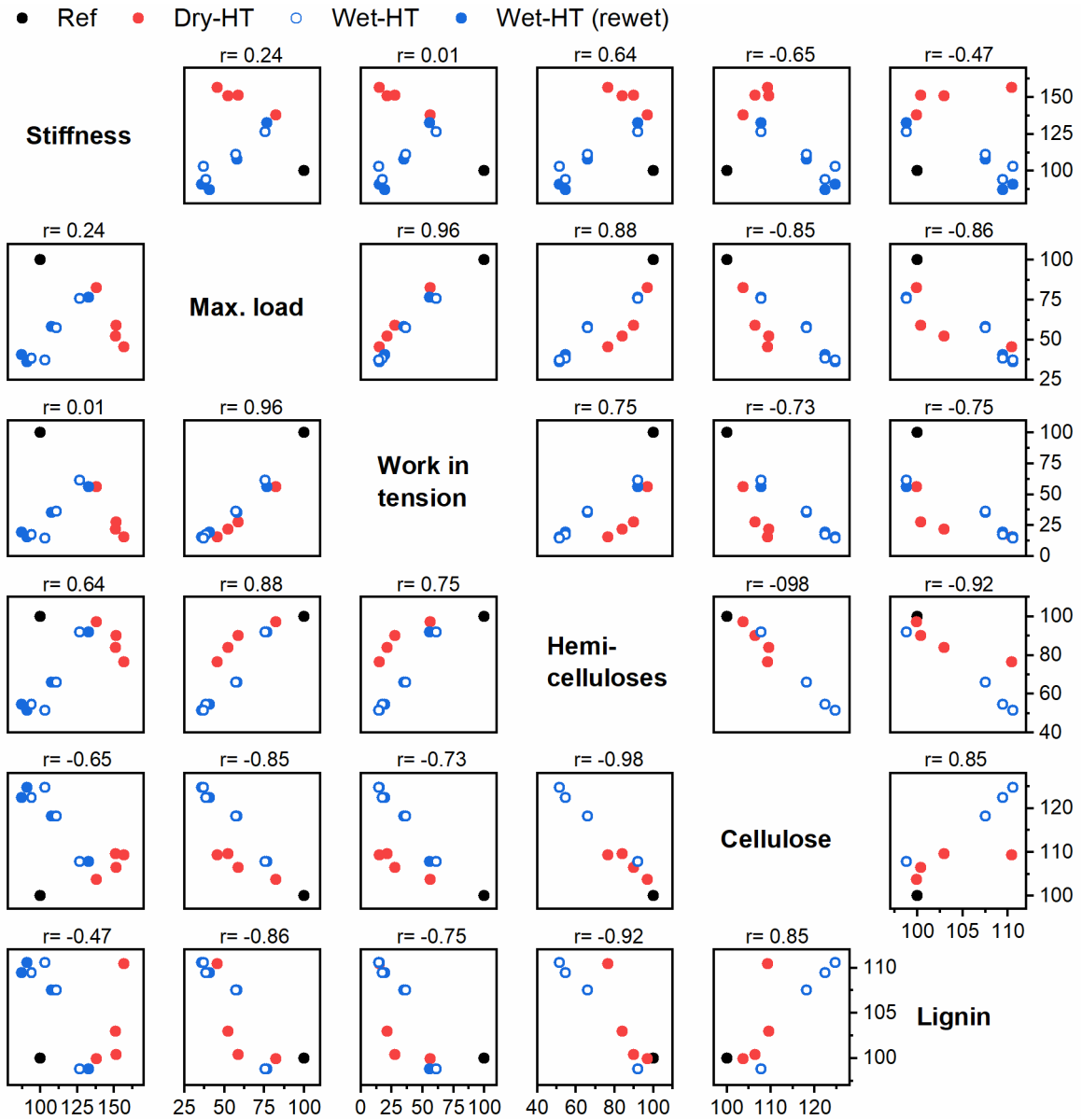


Fig. S. 2: Scatter matrix of the residual tensile properties and the chemical constituents (all in % of Ref) based on the tensile measurements in water-saturated state. Each data point represents the average value per sample group (treatment technique and treatment duration). The Pearson correlation coefficient based on all data points is shown at the top of each scatter plot.

References

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