

Muhammad Awais
Doctoral Candidate
Department of Bioproducts and Biosystems
Wood Material Science
School common, CHEM
Email: muhammad.awais@aalto.fi



Research outputs

Belt, T., & Awais, M. (2025). Progressive degradation of acetylated wood by the brown rot fungi *Coniophora puteana* and *Rhodonia placenta*. *Wood Science and Technology*, 59(1), Article 13. <https://doi.org/10.1007/s00226-024-01620-8>

Cucharero Moya, J., Awais, M., Valkonen, M., Kammiovirta, K., Rautkari, L., Lokki, T., & Hänninen, T. (2024). Influence of moisture on the sound absorption properties of wood-based pulp fibre foams. *Materials Today Sustainability*, 27, Article 100854. <https://doi.org/10.1016/j.mtsust.2024.100854>

Sultan, M. T., Altgen, D., Awais, M., Rautkari, L., & Altgen, M. (2024). Impact of a conditioning step during the treatment of wood with melamine-formaldehyde resin on dimensional stabilisation. *Holzforschung*, 78(1), 37-46. <https://doi.org/10.1515/hf-2023-0084>

Belt, T., Altgen, M., Awais, M., Nopens, M., & Rautkari, L. (2024). Degradation by brown rot fungi increases the hygroscopicity of heat-treated wood. *International Biodeterioration and Biodegradation*, 186, Article 105690. <https://doi.org/10.1016/j.ibiod.2023.105690>

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Belt, T., Awais, M., & Mäkelä, M. (2022). Chemical Characterization and Visualization of Progressive Brown Rot Decay of Wood by Near Infrared Imaging and Multivariate Analysis. *Frontiers in Plant Science*, 13, Article 940745. <https://doi.org/10.3389/fpls.2022.940745>

Awais, M., Altgen, M., Mäkelä, M., Belt, T., & Rautkari, L. (2022). Quantitative prediction of moisture content distribution in acetylated wood using near-infrared hyperspectral imaging. *Journal of Materials Science*, 57(5), 3416-3429. <https://doi.org/10.1007/s10853-021-06812-2>

Spiliopoulos, P., Spirk, S., Pääkkönen, T., Viljanen, M., Svedström, K., Pitkänen, L., Awais, M., & Kontturi, E. (2021). Visualizing Degradation of Cellulose Nanofibers by Acid Hydrolysis. *Biomacromolecules*, 22(4), 1399-1405. <https://doi.org/10.1021/acs.biomac.0c01625>

Penttilä, P. A., Altgen, M., Awais, M., Österberg, M., Rautkari, L., & Schweins, R. (2020). Bundling of cellulose microfibrils in native and polyethylene glycol-containing wood cell walls revealed by small-angle neutron scattering. *Scientific Reports*, 10(1), Article 20844. <https://doi.org/10.1038/s41598-020-77755-y>

Altgen, M., Awais, M., Altgen, D., Kyrrö, S., Seppäläinen, H., & Rautkari, L. (2020). Micro-tensile behavior of Scots pine sapwood after heat treatments in superheated steam or pressurized hot water. *Journal of Materials Science*, 55(26), 12621-12635. <https://doi.org/10.1007/s10853-020-04943-6>

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Altgen, M., Awais, M., Altgen, D., Klüppel, A., Mäkelä, M., & Rautkari, L. (2020). Distribution and curing reactions of melamine formaldehyde resin in cells of impregnation-modified wood. *Scientific Reports*, 10(1), 3366. Article 3366. <https://doi.org/10.1038/s41598-020-60418-3>

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Prizes

1. **Puumiehet Ry**
Awais, M. (Recipient), 2023
2. **Puumiesten Foundation**
Awais, M. (Recipient), 1 Jun 2019
3. **Suomen Sahateollisuusmiesten Yhdistys ry**
Awais, M. (Recipient), 2023
4. **Tekniikan Edistämissäätiö**
Awais, M. (Recipient), 2023
5. **Walter Ahlström Foundation**
Awais, M. (Recipient), 2023
6. **Yrjö ja Senja Koivusen säätiö**
Awais, M. (Recipient), 1 Dec 2019

Projects