

**Dissertation Release**

**16.08.2022**

## Wood and indoor air quality

<b>Title of the dissertation</b>	Emissions of wooden interior materials
<b>Contents of the dissertation</b>	<p>Environmental factors have increased the demand for sustainable materials in construction industry. In this context, wood is one solution because it is a renewable non-fossil resource. Additionally, it has a number of properties that are potentially beneficial for indoor environment quality and human health. However, different wood species emit a wide variety of volatile organic compounds (VOCs), and their emissions from recently dried timber in particular can be considerable.</p> <p>The main aim this dissertation was to provide new knowledge about VOC-emissions of wooden interior materials under specific parameters. The effects of moisture content and three paints on the wood emissions were studied in laboratory experiments. The effect of material selection and ventilation were studied in three low-energy wooden test buildings. Additionally, the performance of VOC sensors used in indoor air quality monitoring was studied.</p> <p>The results provided new knowledge about the interaction between the studied parameters and wood emissions. Based on the results, the emissions were strongly dependent on surrounding circumstances, used materials, and material combinations. Additionally, differences in the performance of the studied VOC sensors were observed.</p>
<b>Field of the dissertation</b>	Indoor Environment Technology
<b>Doctoral candidate</b>	Tuomas Alapieti, M.Sc. (Tech.), born in 1988 in Oulu, Finland
<b>Time of the defence</b>	26 August 2022 at 12:00 hours
<b>Place of the defence</b>	Aalto University School of Engineering, Otakaari 1, 02150 Espoo, Finland, Auditorium M1
<b>Opponent</b>	Doctor Corinne Mandin, CSTB, France
<b>Supervisor</b>	Professor Heidi Salonen, School of Engineering, Aalto University, Finland
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