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# Hygroscopic Behaviour of Lignocellulosic Materials : Dataset at Oscillating Relative Humidity Variations

Giana Almeida<sup>a</sup>, Romain Rémond<sup>b</sup>, Patrick Perré<sup>c</sup>

<sup>a</sup>UMR GENIAL, AgroParisTech, Inra, Université Paris-Saclay, 91300 Massy, France

<sup>b</sup>Université de Lorraine, LERMAB, ENSTIB, 27 rue Philippe Séguin, BP1041, 88051 Epinal cedex 9, France,

<sup>c</sup>LGPM, CentraleSupélec, Université Paris-Saclay, *8-10 rue Joliot-Curie, 91190 Gif-sur-Yvette, France*

[giana.almeida@agroparistech.fr](mailto:giana.almeida@agroparistech.fr)

[romain.remond@univ-lorraine.fr](mailto:romain.remond@univ-lorraine.fr)

[patrick.perre@centralesupelec.fr](mailto:patrick.perre@centralesupelec.fr)

## Abstract

The aim of this work is to study the hygroscopic behaviour of lignocellulosic materials used in building isolation. A special attention is done to the history of relative humidity variations, mostly to intermediate curves obtained with small loops of relative humidity. These data reproduce real environmental conditions that isolation materials are exposed. Thus, envelope sorption curves and intermediate curves were studied for five lignocellulosic materials. These materials presented different hygroscopic behaviour, explained by chemical and structural composition of each material. Hailwood-Horrobin model was used for describing the envelope curves and the effect of temperature on isotherms was also modelled. Identified parameters here presented can bring very valuable information for modelling sorption behaviour of lignocellulosic materials.

**Keywords :** cellulose; dynamic vapour sorption; flax-hemp wool; Hailwood-Horrobin model; low fibreboard density (LDF); Norway spruce; wheat straw

## 1. Introduction

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