

Title (en)
MINERALIZING OF WOOD AND CELLULOSIC MATERIALS

Title (de)
MINERALISING OF WOOD AND CELLULOSIC MATERIAL

Title (fr)
MINÉRALISATION DU BOIS ET DE MATIÈRES CELLULOSIQUES

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Application
EP 17786839 A 20170929

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Abstract (en)
[origin: WO2018065335A2] Provided is a method for mineralizing wood, wooden material and other cellulosic material comprising: i) a first impregnation step, comprising a first impregnation of wood, wooden material or other cellulosic material with an aqueous solution of potassium methyl silicate or potassium oxalate, ii) a first drying step, comprising drying of the wood, wooden material or other cellulosic material, iii) a second impregnation step, comprising a second impregnation of wood, wooden material or other cellulosic material with an aqueous solution of calcium chloride or CO₂ (gaseous or fluidic), and iv) a second drying step, comprising drying of the wood, wooden material or other cellulosic material. Due to the novel mineralization method, the water insoluble products of the impregnation steps penetrate the material deeply and are generated in situ within the cells themselves, in the cell walls and pits and between the xylem cells (primarily fibres and sclereids). The mineralized products are protected against fungi, improved in their biological resistance, moisture and weather resistance and exhibit a reduced flammability. The products are non-toxic and environmentally safe.

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Citation (examination)
• GB 191306179 A 19131023 - DAUTREPPE LOUIS [BE]
• US 2002094937 A1 20020718 - HIRSBRUNNER PIERRE [CH], et al
• LABORATORY FOREST PRODUCTS: "The fiber saturation point of wood", 1 June 1944 (1944-06-01), XP055682581, Retrieved from the Internet <URL:https://www.fpl.fs.fed.us/documnts/fpltn/fpltn-252.pdf> [retrieved on 20200403]
• THALER N ET AL: "Bioincising of Norway spruce wood using wood inhabiting fungi", INTERNATIONAL BIODETERIORATION & BIODEGRADATION, ELSEVIER, AMSTERDAM, NL, vol. 68, 10 November 2011 (2011-11-10), pages 51 - 55, XP028397570, ISSN: 0964-8305, [retrieved on 20120110], DOI: 10.1016/J.IBIOD.2011.11.014

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