contact with wood to be treated via an electrically conductive material and applying a voltage across the at least first and second electrodes. The wood is heated, under pressure, up to temperatures as high as 200 °C. Typical applications of the wood treatment include wood sterilization, coloration and debarking.

Thus, there is a need for a method which enables an effective treatment of wood and reduces or even eliminates the above-mentioned disadvantages of the prior art.

Summary of the invention

In one aspect, the present invention relates to a method for heat treatment of wood. In another aspect, the present invention relates to uses of the method for the heat treatment of wood. In yet another aspect, the present invention relates to wood obtainable by the method as disclosed herein. Preferred embodiments are explained in the following description, illustrated in the accompanying drawings, and illustrated by the Examples.

According to one aspect of the present invention, there is provided a method for heat treatment of wood, **characterised in** that the method comprises the steps of placing said wood in an airtight tank, pressurising said airtight tank to a predefined pressure to establish a pressurised environment for said wood, heating said wood from an initial temperature to a predefined temperature by dielectric heating, wherein the dielectric heating is electromagnetic radiation, wherein the predefined temperature is above 140°C, wherein the predefined pressure is above 5 bar and during heating prevents water present in the wood from evaporating at the predefined temperature, and wherein the heating step is performed without adding any fluid.

Also disclosed is a method for heat treatment of wood comprising the

steps of placing the wood to be treated in an airtight tank, and pressurising the airtight tank to a certain pressure in order to establish a pressurised environment for the wood. The wood is further heated to a predefined temperature. The pressure during heating is such preventing the water present in the wood from evaporating at the predefined temperature. The tank may have any form and size suitable for performing the method.

In another aspect of the present invention, the method further comprises a cooling step and a drying step. It is to be understood that the method may comprise both a cooling step and a drying step, or only

Claims

1. A method for heat treatment of wood, **characterised in** that the method comprises the steps of

- placing said wood in an airtight tank,
- pressurising said airtight tank to a predefined pressure to establish a pressurised environment for said wood,
- heating said wood from an initial temperature to a predefined temperature by dielectric heating, wherein the dielectric heating is electromagnetic radiation,

wherein the predefined temperature is above 140°C, wherein the predefined pressure is above 5 bar and during heating prevents water present in the wood from evaporating at the predefined temperature, and wherein the heating step is performed without adding any fluid.

2. The method according to claim 1, **characterised in** that the frequency of the electromagnetic radiation is 1-40 MHz.

3. A method according to claim 1 or 2, wherein the dielectric heating is electromagnetic radiation by means of one or more electrodes.

4. A method according to one of the preceding claims, wherein the heating is performed for a period of time in the range of minutes to hours, such as from 15 minutes to 10 hours, such as from 1-5 hours.

5. A method according to any one of the preceding claims, **characterised in** that the step of heating is initiated when the pressure in the tank exceeds a predefined pressure level above 5 bar.

6. A method according to one of the preceding claims, **characterised in** that the predefined temperature is above 150°C, such as 170-215°C.

7. A method according to one of the preceding claims, **characterised in** that the predefined pressure is in a range of 5-27 bar.

8. A method according to any one of the preceding claims, **characterised in** that it further comprises one or both of the steps of

- cooling said wood, and
- drying said wood.

9. A method according to claim 8, **characterised in** that the cooling is performed by supplying a cooling medium to the tank.

10. A method according to claim 9, **characterised in** that the cooling medium is a water-containing liquid.

11. A method according to any one of claims 8 to 10, **characterised in** that the pressure during the cooling step is suitably controlled and adapted having regard to the temperature.

12. A method according to any one of claims 8 to 10, **characterised in** that during the drying step, the pressure is reduced according to temperature.

13. A method according to any one of claims 8 to 12, wherein the drying process is performed by reducing the pressure in the tank as the temperature in the tank is reduced.