Electronic device for determining the survival of living tissues under the bark of trees after a fire

CSIC, through INIA-CSIC and the Forest Fire Group of its Forest Research Center (CIFOR) in collaboration with the UPM, has developed a device for determining the survival of living tissues under the bark of trees after a fire.

We are looking for companies from the forestry and cork industry interested in the development of this technology.

An offer for Utility Model Licensing

Application in forest engineering after fires or prescribed fires

The estimation of the survival after a fire of the tissues that form the trunk (responsible for producing cork again in the surviving trees) has economic implications of high impact on decision-making after the fire, allowing the implementation of planning and prioritizing emergency actions, as well as the removal of burned wood and the subsequent restoration of the forest mass.

With this system two electrodes advance from the outside to the inside of the bark, offering a continuous measurement of the electrical resistance throughout the thickness of the bark explored. To ensure the effectiveness of the measurement, the system has an ohmmeter with a wide measurement range, which ensures signal detection for very low humidity levels. The device detects a very high electrical resistance in the outer layer of the bark since it is a dead tissue with very low humidity and the electrical resistance decreases rapidly when the electrodes approach the living tissues located inside, which have a high moisture content. If the device shows no changes in resistance throughout the measurement or such changes imply high resistances, it is considered that no living tissues have been detected and therefore the tissue under the cortex is dead at the measurement point.

The estimation of the survival after a fire of the tissues that form the trunk has economic implications of high impact

Main innovations and advantages

- There is currently no device specifically designed for the purpose of assessing the survival of living tree tissues under the bark using a non-destructive and highly effective method.
- The device offers immediate, visual and storable information for subsequent analysis, if deemed necessary, and therefore may be used in decision-making in forest engineering after fires or prescribed fires.

Estado de la patente
Spanish utility model granted

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