

MIIEx2017

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Intellectual
Exposition

PROGRAMME ABSTRACT

AUTISM

INNOVATION

DESIGN

INVENTION

"Bridging Gaps with Creativity for Future Sustainability"

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“Bridging the Gaps with Creativity for Future Sustainability”

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NATURAL FIBRE ROOF

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J.Sooria Prakash Rao, Kilashini Gunalan Paul & Roshini Pathmanathan

SJKT TAMAN TUN AMINAH

Abstract

The old adage "keeping a roof over one's head" aptly describes the basic human need for shelter. A roof provides protection from the sun, wind, and rain. It is designed to prevent or limit the flow of mass and energy, depending on the environmental differences between the conditioned space and the outdoor ambient. Natural fibre roof have been innovate by using banana stem fibre to reduce heat gain and loss in buildings. This innovation aims to quantify the effect on heat transfer of the Natural fibre roofs. By comparing heat flow between the conventional roof layers in the natural fibre roofs and control roofs we were able to quantify the reduction in heat loss or gain that the natural fibre roof provides. This information may be used with a building energy model to quantify the energy savings that the green roof allows for. Extended life of the roof Protects the roof from weather, reducing maintenance costs. Reduced heating and cooling costs and provides extra roof insulation. Also reduction in the building's overall heating and cooling costs. Natural fibre has the greatest potential for reducing carbon dioxide emission and enables to produce reinforcement of significantly less harmful for the environment. The natural fibre roof can be produced at low cost due to its abundant availability giving it the potential of high commercial value.

DIGI THERMO TIMER

Puvanesvari Aramugam, Ruvenesvaran A/L Manivannan, Thasvin Premnath, Kishen
Krishnan, Hemaprasad Jeyabalu & Kelvin Nathans Loganathan

SJKT TAMAN TUN AMINAH

Abstract

Using conventional thermometers for measuring temperature will require a separate instrument for measuring time such as stop clocks, ordinary watches, or digital timers. These thermometers are fragile; prone to measurement errors. A controller based digital thermometer with timer (DigiThermoTimer) is designed and constructed. Temperature is measured with precision temperature thermometer and time is counted using the digital timer circuits. The circuit is assembled on a prototype board, tested, modified and finally assembled on a set of matrix boards, and cased in a portable casing with the sensor attached. Results during testing showed that the device displays time count in seconds and temperature in degrees Celsius. The device can be used in any applications requiring simultaneous temperature/time measurements. Not does the use of a separate timing device inconvenient for the user, it also introduces error in measurements. Digi Thermo Timer is designed to solve these problems by incorporating these two measuring devices in one. The use of precision temperature sensor to perform computations will eliminate errors thereby enhancing the device's accuracy, increase flexibility.