

The use of beeswax as heating element in non-electric infant incubator

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The use of beeswax as heating element in non-electric infant incubator

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Abstract

Non-electric infant incubators are needed in remote areas that have no access to electricity to reduce infant mortality nationwide. In previous studies, non-electric infant incubators have been developed using phase change material of beeswax as the heating element. This study aims to improve the performance of beeswax non-electric infant incubator to obtain a more reliable and practical one. The design of the original beeswax cartridge in the form of copper boxes was modified into tubes of stainless steel. The geometry and location of the air holes were also modified. Wood that was previously used as the body material was replaced with polyurethane to reduce the

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Standard of SNI 16-4221. The beeswax cartridge arrangement was varied to obtain the best performance. The results showed that polyurethane provides infant incubator lighter and more practical to use. The new design of non-electric infant incubator was capable of providing a temperature of 32–36 °C for 2 h.

Q Keywords: [Non-electric infant incubator](#) [beeswax](#) [phase change material](#) [polyurethane](#)

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Disclosure statement

No potential conflict of interest was reported by the authors.



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