<u>Title:</u>

Phase Change Material for Cooling Electronic Devices

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Short Description:

One of the many applications of phase change materials (PCM) is delaying the peak temperature of the electronics devices. Most of the studies are now focusing on enhancing the thermo-physical properties of the PCM to best suit this application. The selection of the PCM is mainly based on its melting temperature to achieve its best performance. Moreover, the PCM have high latent heat of fusion. These two thermo-physical properties don't need enhancement. Also, the specific heat is an index to the sensible energy and during the melting process of the PCM, the sensible energy has minor effect on this process (the energy absorbed or released during melting and solidification is called latent energy). Due to the fact that the PCM has very low thermal conductivity which in turn leads to numerous studies focusing on the enhancement of the thermal conductivity of the PCM. One important point is that the majority of the previous studies on the cooling of the electronics devices ignore fatty acid as alternative PCM solution.



Temperature profile of the heat sink with and without PCM in a heat sink