

Project Title:

Investigation of Stability of Nano-PCMs to use in Thermal Energy Storage

Department:	<i>Thermal cycles and heat exchangers</i>	Employer:	<i>Niroo Research institute</i>
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Project Staff:

Project Summary:

Use of organic phase change materials (OPCMs) as low-temperature thermal energy storage (TES) systems requires troubleshooting due to their low thermal conductivity. The use of nano-structured materials can be introduced as an effective solution to heat transfer enhancement of OPCMs, based on among the extensive studies in this field. The physical, thermal and chemical instability of mixtures consisting of PCM and nano-structured materials (Nano-PCMs) is one of the most important problems in using this technique. Therefore, the Stability of Nano-PCMs in various aspects is of interest to researchers.

Project Results:

In the present project, different methods of stabilization of Nano-PCMs and evaluating their stability have been investigated. In order to check the thermal stability of the Nano-PCMs, thermal analysis was performed and the temperature changes of the samples were plotted over time during the melting and freezing processes.

Project Documentation:

- reports