



Séminaire du CETHIL

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Recent progress and challenges in heat pipe science

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Sujet du séminaire

Despite the numerous studies on heat pipes for fifty years, the development of predictive tools for the design of heat pipes is still challenging, even for conventional technologies. It results in a real limitation in the spread of heat pipes in the industry as each new heat pipe has to be carefully designed for a specific application. The present communication aims at identifying and understanding the current scientific problems of heat pipe science. The different types of heat pipe are reviewed in order to identify the main phenomena involved in these systems. A global review of the recent studies on heat pipes is then presented. Advances are identified in the fields of the heat pipe characterization, on the working fluid problematic, on the understanding of phase change heat transfer in thin liquid films and on the system modeling. Two examples of recent works are also detailed to highlight the strategies that can be followed to answer the current issues. This global review enables to highlight the main advances on heat pipe science of these last five years and to draw perspectives on the forthcoming science progress.

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