

Public Abstract

First Name:Michael

Middle Name:Thomas

Last Name:Campbell

Adviser's First Name:Hongbin

Adviser's Last Name:Ma

Co-Adviser's First Name:

Co-Adviser's Last Name:

Graduation Term:SP 2009

Department:Mechanical & Aerospace Engineering

Degree:MS

Title:Analysis and Optimization of Electroformed Dendritic Structures as Enhanced Heat Transfer Surfaces

In the past several years, the demand for electronic cooling devices which work passively has increased. Heat pipes and vapor chambers have the most widespread use and there is a high demand for more adaptable manufacturing and increased efficiency for these devices. Using an electroforming process, a new wicking structure has been designed which will balance the choice between efficiency and manufacturability. This new process forms a wick which can be grown on virtually any metal surface and on almost any geometry. With this new process, a wick can be generated to meet the requirement of high heat flux applications.