

Abstract Submitted
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Thermal Performance of Surface Wick Structures.¹ YONGKANG CHEN, NOEL TAVAN, JOHN BAKER, LAWRENCE MELVIN, MARK WEISLOGEL, Portland State University — Microscale surface wick structures that exploit capillary driven flow in interior corners have been designed. In this study we examine the interplay between capillary flow and evaporative heat transfer that effectively reduces the surface temperature. The tests are performed by raising the surface temperature to various levels before the flow is introduced to the surfaces. Certainly heat transfer weakens the capillary driven flow. It is observed, however, the surface temperature can be reduced significantly. The effects of geometric parameters and interconnectivity are to be characterized to identify optimal configurations.

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Yongkang Chen
Portland State University

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