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## **ACCEPTED MANUSCRIPT**

## Spray Cooling Heat Transfer on Microstructured Thin Film-Enhanced Surfaces

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#### Abstract

Experiments were performed with FC-72 (only for flow characteristics) and DI water to investigate heat transfer characteristics from enhanced surfaces through spray cooling. Three different enhanced microstructured surfaces of 50  $\mu$ m SiC, 10  $\mu$ m CNT and 50  $\mu$ m diamond thin films were examined. Three full-cone spray nozzles were used with low mass flow rates of 2.92  $\times 10^{-4}$  kg/s to  $17.85 \times 10^{-4}$  kg/s. Three different nozzle-to-surface distances of 20 mm, 35 mm and 50 mm were

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