

Abstract Submitted
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Designing Energy-Efficient Heat Exchangers—Creating Micro-Channels on the Aluminum Fin Surface TYLER BREST, KHALID EID, ANDREW SOMMERS, Miami University — In this project, a new method of patterning micro-channels on aluminum and copper surfaces is described for the purpose of using those features to manipulate the surface wettability. The channels will provide preferential drainage paths for droplets to flow from the surface. Photolithography is used for the fabrication of the micro-scale channels and a hydrophobic polymer is used to reduce the surface energy of the aluminum and copper plates. The scope of this project includes applications in the design of Heating, Ventilating, and Air Conditioner (HVAC) systems which would increase their efficiency by reducing the water retention on their surfaces.

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