



## TECHNOLOGY

# Force-Feeding Boiling/Evaporation

## OVERVIEW

This invention is directed to a self-contained, two-phase flow system suitable for cooling electronics in a wide range of high flux military and commercial electronic applications. Such a system would find use, for example, in phased array lasers and radars.

Currently, micro-fabrication technology has been used for manufacturing heat pipes and capillary loops. However, all known heat pipes and capillary pump loops are two dimensional, and most are fabricated on a single wafer with a cover. The liquid and vapor channels capillary structure are located in one plane. Evaporation in the capillary structure propagates along the same plane. The capillary tubes are long, and the pressure drop in such channels limits capacity of such loops to a few Watts.

The invention achieves improvements in heat transfer by combining boiling and evaporative structure with feed channels in which liquid can be supplied under pressure exceeding the boiling pressure or with the temperature lower than the boiling temperature.

For licensing information please contact the Office of Technology Commercialization, University of Maryland, 301 405 3947 or by e-mail [otc@umd.edu](mailto:otc@umd.edu).

## CONTACT INFO

UM Ventures  
0134 Lee Building  
7809 Regents Drive  
College Park, MD 20742  
Email: [umdtechtransfer@umd.edu](mailto:umdtechtransfer@umd.edu)  
Phone: (301) 405-3947 | Fax: (301) 314-9502

## Additional Information

## INSTITUTION

University of Maryland, College Park

## CATEGORIES

- Microelectronics
- Industrial Processing

## EXTERNAL RESOURCES

- [US Patent 7,571,618](#)

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