



TECHNOLOGY

A New Type of Perfluorocarbon Based Nanofluids for Effective Heat Transfer

OVERVIEW

Thermal management in the next decade of microelectronics and optoelectronics will require heat transfer fluids with improved performance over those currently available. Nanofluids exhibit significant enhancement in thermal conductivity but are not practical because of low long-term stability issues and an inability to currently mass-produce such fluids.

To overcome these impracticalities, a University of Maryland researcher has developed the concept of using liquid nanodroplets for enhancing thermal conductivity. This concept has been demonstrated in Perfluorocarbon fluids. Such fluids exhibit advantages over conventional nanofluids including: long-term stability, potential for mass production, and no clogging issues when used in microchannels or micronozzles. Potential applications of these nanofluids include use as ultrahigh thermal conductivity coolants, lubricants, hydraulic fluids, and metal-cutting fluids.

CONTACT INFO

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

Additional Information

INSTITUTION

University of Maryland, College Park

PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Nanotechnology + Nanoparticles + Nanomaterials

EXTERNAL RESOURCES

- [US Patent 8,940,181](#)

