

Battelle Number(s):

12639, 13738, 14180, 15779, 15688,

Patent(s) Issued

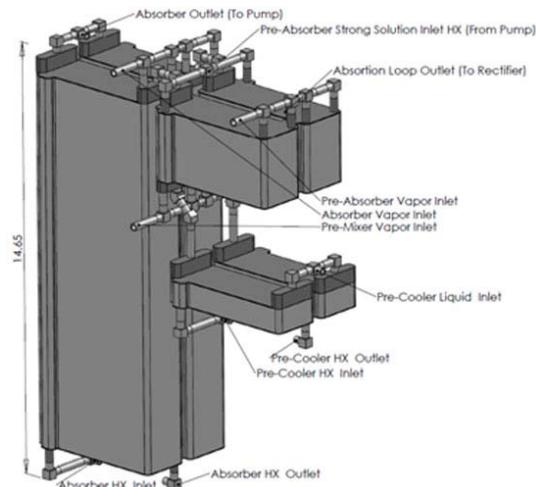
Available for licensing in all fields

Available Technologies

Compact Absorption Chiller

SUMMARY

Small-scale, portable vapor compression cooling systems are encumbered with the need for electricity from batteries or a portable generator in order to operate the mechanical compressor. Heat activated technologies, such as absorption chillers, offer an alternative that can substantially reduce or eliminate the reliance on electricity. Heat can be provided by combusting high-energy density liquid fuels or by recovering waste heat from other processes, such as fuel cell systems or vehicle exhaust.



The lack of lightweight portable cooling is an issue for many military and civilian applications including for man portable cooling, vehicle cooling, tactical cooling and aircraft cooling systems. Originally developed for military applications requiring small size and weight, this microchannel-based technology offers some of the best economic and performance efficiencies versus other available technologies.

A variety of heat sources can be used, such as combusting natural gas or other fuels, solar thermal, or engine or fuel cell system waste heat. The ability to displace electric power demand for cooling and heating off the grid, particularly during peak demand, will likely become commercially important in the United States as the electric grid evolves. The microchannel components enable systems as small as 1 ton cooling (and smaller), which will be necessary for high efficiency zero-energy homes.

ADVANTAGES

- * Reduced size and weight, but comparable performance to other technologies
- * Provides lower operating cost alternative in markets where electricity is expensive
- * Scales down to less than 5 ton cooling better than other existing technologies

STATE OF DEVELOPMENT & AVAILABILITY

The technology has been prototyped for specific applications. It is available for licensing in all fields of use.

RELATED LINKS

» Microproducts Breakthrough Institute

Partnership with Oregon State University

<http://mbi-online.org/>

Patents & Intellectual Property

- » Patent #: 6,666,909
- » Patent #: 6,869,462
- » Patent #: 7,272,941
- » Patent #: 7,344,576

Technology Portfolio(s)

- » Building Efficiency

Potential Industry Applications

- » Automotive & Transportation
- » Consumer Products
- » Energy & Utilities
- » Manufacturing & Warehousing

Matt J. Love

Pacific Northwest National Laboratory
(509) 375-2194

matthew.love@pnnl.gov

<http://availabletechnologies.pnnl.gov>



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