



## TECHNOLOGY

# Separate and/or Combined Sensible and Latent Cooling

## OVERVIEW

This invention provides an improved energy efficiency and better thermal comfort for cooling systems via an automatic adaptation of operating modes according to the sensible and latent load ratio. Conventional air conditioning systems are designed to simultaneously meet sensible and latent loads in order to meet a typical sensible heat factor (SHF) range, the sensible heat factor being a ratio of sensible load to the sum of sensible and latent loads. However, the conventional air conditioning systems cannot handle cooling and dehumidifying loads when the SHF is out of its typical range.

Researchers at the University of Maryland have developed methods of meeting varying sensible and latent cooling loads dynamically by adapting operating modes according to the SHF. These improved methods include modification of the cycle and indoor heat exchanger configurations. In addition, the operating modes are dynamically switched in accordance with the space demands, i.e., with room temperature and humidity sensors. As a result, the system is operated with much higher efficiencies.

For additional information, please contact the Office of Technology Commercialization, University of Maryland College Park, via phone at (301) 405-3947 or e-mail at [otc@umd.edu](mailto:otc@umd.edu).

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## Additional Information

### INSTITUTION

University of Maryland, College Park

### LICENSE STATUS

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### CATEGORIES

- Engineering
- Chemical
- Clean Technology
- Industrial Processing

### EXTERNAL RESOURCES

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