



TECHNOLOGY

Integrated air-to-refrigerant heat exchanger and impeller

OVERVIEW

Background

Air conditioning and refrigeration systems constitute a huge amount of the overall energy usage. Increasing the efficiency and performance of the heat exchangers used in these units is always of interest to both companies that produce them and to their customers, especially if cost reduction is also achievable.

Innovative Technology

Researchers at the University of Maryland developed a series of novel designs of heat exchangers for HVAC and other applications. The new designs utilize microchannel airfoil shaped tubes that prevent boundary layer detachment within the coil and which serve as both heat exchanger and air diffuser.

APPLICATIONS

Air conditioning

Refrigeration

Power generation

ADVANTAGES

Higher efficiency

Low thermal resistance

Low air flow resistance

Less refrigerant volume

Less material

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

EXTERNAL RESOURCES

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