

# Inventions & Innovation Project Abstract

## High-Efficiency Variable Dehumidification for Air Conditioners

The small-to-medium sized HVAC market (less than 50-tons) is driven almost entirely by first cost; this is a major barrier to adoption of many new air conditioning technologies. High indoor humidity is unacceptable because it interferes with manufacturing such as paper and pharmaceuticals, and leads to mold growth, poor indoor air quality, and material damages. Forty-six percent of buyers indicate that low energy costs are their most important factor in choosing new air-conditioning equipment. Forty-one percent indicate that better humidity control is the characteristic in their systems most in need of improvement.

Advantek is producing a production prototype that will lead industry to a highly marketable improvement in energy efficiency and dehumidification for unitary air-conditioning and dehumidification. The project directly addresses the expressed needs for DOE-EERE/BTS for HVAC equipment performance improvements; providing 60-percent more dehumidification, and using 32-percent less energy than standard equipment at half the cost.



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