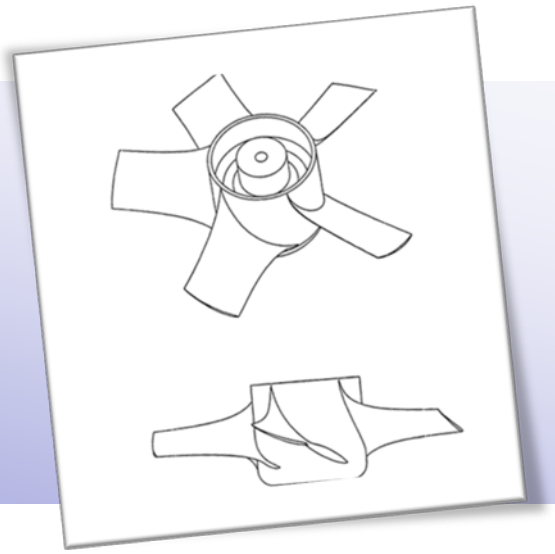
Patent Portfolio Licensing Opportunity

Featuring:

- Greater air flow
- Increased efficiency (~25%)
- Reduced fan motor power consumption
- Reduced noise



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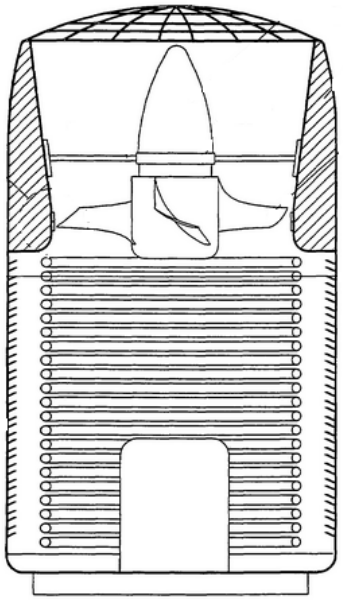
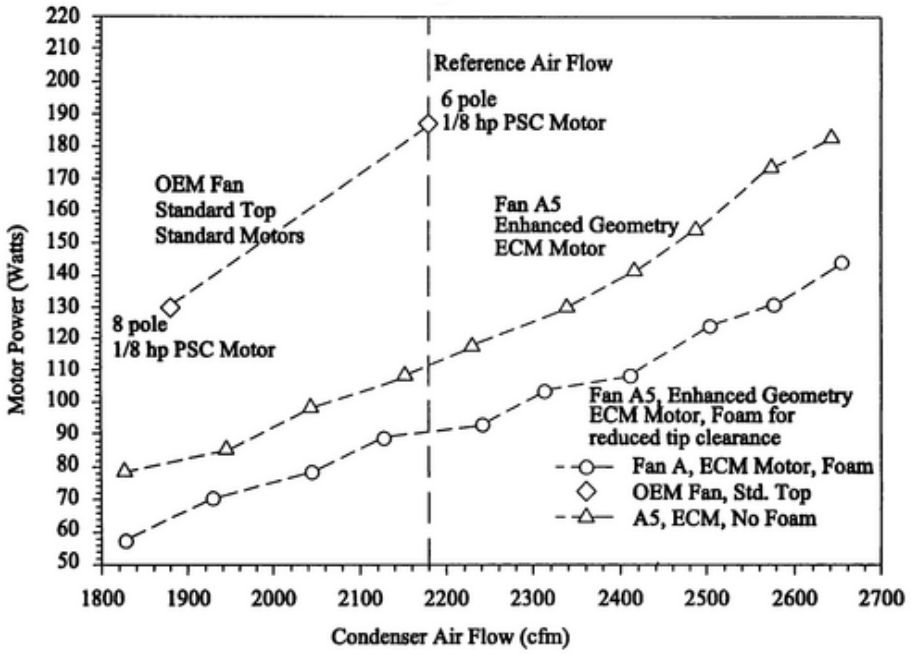
PATENT PORTFOLIO FOR INCREASED AC EFFICIENCY





Technology Innovation

Air conditioner manufacturers are working to reduce every watt consumed by conventional air conditioners, to cost-effectively increase cooling system efficiency. Lower sound levels in outdoor air conditioning units and heat pump assemblies is also a very important objective for air conditioning condenser fan system manufacturers .

Outside air conditioner condenser fans are one of the significant energy consuming component of a residential or commercial air conditioning system. The largest energy use of the air conditioner is the compressor. There have been focused efforts on improving condenser performance but little development on condenser fans.

The patent portfolio embodies novel technologies for enhancing the performance of outdoor air conditioner condenser fans and heat pump assemblies. These designs utilize twisted shaped blades with optimized air foils for improving volume of air flow and at the same time minimizing motor power with and without additional performance enhancement improvements to augment air flow and air efficiency.

Novel technologies are also utilized for reducing undesirable sound and noise levels.

Performance Enhancements

The patent profolio has several important performance enhancements:

- Condenser blades that increase air flow and energy efficiencies over conventional blades can be made from molded plastic rather than stamped metal
- Condenser or heat pump fan blades that improve air flow and air moving efficiencies by approximately 30% or more over conventional blades and uses less power than conventional condenser motors
- Condenser or heat pump fan blade with asymmetrical design and diffuser assembly to achieve quieter outdoor operation than conventional condenser or heat pump fans
- Condenser fan blade or heat pump assembly which aids heat transfer to the air conditioner condenser that rejects heat to the outdoor with improvements to space cooling efficiency
- Reduce pressure rise on the condenser fan and velocity pressure recovery to further improve air moving performance using short conical exhaust diffuser which can improve air moving efficiency approximately 21% over a conventional “starburst” or coil wire type exhaust grill.

The portfolio enables design trade-offs between packaging size & weight, air flow, fan motor power consumption and noise levels.

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LIST OF PATENTS FOR LICENSE

The following list of patents embody technologies developed at the University of Central Florida (UCF) Florida Solar Energy Center. These are licensed exclusively to Tekcapital plc, for all fields of use.

US Patents	Number	Title
Patent 1	7,014,423	High Efficiency Air Conditioner Condenser Fan
Patent 2	D510,998	High Effficenciency Air Conditioner Condenser Twisted Fan Blades and Hub
Patent 3	7,249,931	High Efficiency Air Conditioner Fan with Performance Enhancements
Patent 4	D539,413	High Efficiency Air Conditioner Condenser Twisted Fan Blades and Hub
Patent 5	7,568,885	High Efficiency Air Condenser Fan DIV
Patent 6	7,618,233	High Efficiency Air Conditioner Fan with Performance Enhancements
Patent 7	D555,782	High Efficiency Air Conditioner Condenser Twisted Fan Blades and Hub
Patent 8	D566,263	High Efficiency Air Conditioner Condenser Twisted Fan Blades and Hub
Patent 9	D566,829	High Efficiency Air Conditioner Condenser Twisted Fan Blades and Hub

The portfolio provides details of novel fan blade designs for air conditioner condenser or heat pump systems and methods of use that save energy at all times when the air conditioning system operates, providing dependable electric load reduction under peak conditions, and operating more quietly than standard air conditioners.

The technology enhances the energy efficiency of central air conditioning systems and is designed to achieve up to a 25% performance improvement in condenser fan operations, compared with existing air conditioning units.

The system designs incorporate a condenser fan design based on aircraft propeller design elements. The blades can also include an air-foil for improving the airflow efficiency and can also be configured to reduce noise.

This technology portfolio has the potential to be incorporated into both new and existing air conditioning systems.

Technology know-how and prototypes can be included in licensing agreements.

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