

Wet Electrostatic Precipitator Applied Heat Pump Technology

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- ⇒ Technology on fine dust handling air conditioning system with wet electrostatic precipitator and heat pump
- ⇒ Technology with the method of cleaning dust with water by ionizing dust in electric charging part and dust collector

Client / Market

- Cooling, heating, HVAC market (duct type large air conditioning system)

Necessity of this Technology

- Existing air conditioner removes fine particles through a filter that pressure loss is great with the filter, and the function of antimicrobial substances decline as time passes that regular filter replacement and quality control is needed.
- This technology removes particles with the wet electrostatic precipitator with barely any pressure loss. Ionized antimicrobial substance maintains high antimicrobial efficiency and does not require dust filter replacement.
- Also, natural humidification effect is occurred with the water film in collection plate.
- Fine dust filtering in the existing heating and cooling heat pump system is done with a fine mesh (that is, a filter). Thicker filter means greater pressure loss, and the function of antimicrobial coating declines with time.
- The wet electrostatic precipitator filters fine dust and brings an antimicrobial effect with the antimicrobial substance. Without a mesh, pressure loss is small, and secondary pollution is prevented. There is also a natural humidification effect.

Technical Differentiation

- This technology is special in a sense that a value was created by applying a wet electrostatic precipitator to the heat pump.
- Since there is a drainage hose for a cooling and heating heat pump, it naturally discharges polluted water that filter replacement or cleaning is not required.

Excellence of Technology

- It is the first domestic invention that combined heating, cooling, air conditioning device with wet electrostatic precipitator and antimicrobial function.
- Dust collection efficiency of 95% is realized.

DESIRED PARTNERSHIP

Technology Transfer

Licensing

Joint Research

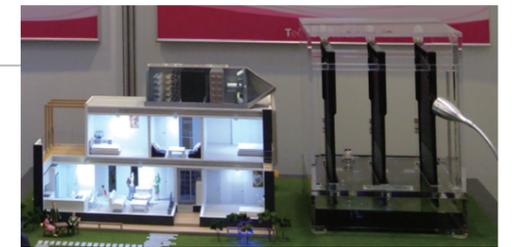
Other



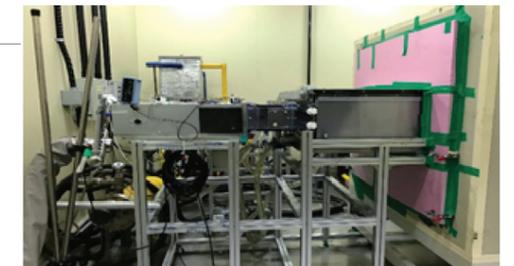
TECHNOLOGY READINESS LEVEL [TRL]



System Organization Model Diagram



Prototype Test



Current Intellectual Property Right Status

PATENT

- Air Conditioner with Humidity Control and Antimicrobial Function (KR1568103)
- Air Purification Apparatus with Antimicrobial Function Based on Photoelectric Effect (KR2016-0170553)

KNOW-HOW

- Wet electrostatic precipitator for heat pump design technology
- Heat pump system cycle design technology for wet electrostatic precipitator