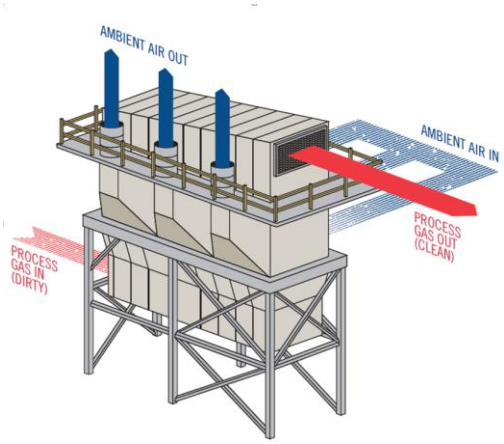
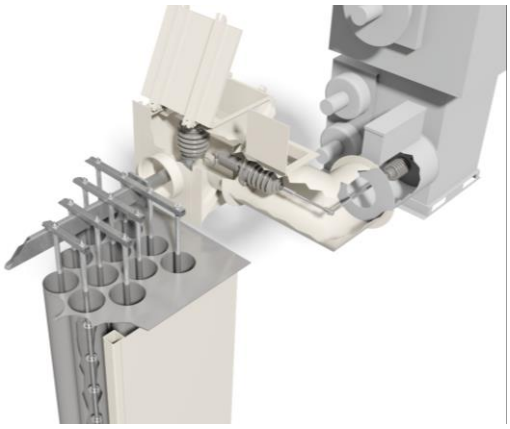
WET ESP: WET ELECTROSTATIC PRECIPITATOR





LUNDBERG

E-Tube® Features

- Round Collection Tubes with External Tube Cooling
- STAR II Rigid Mast Electrodes with Double Spherical Washers
- Upflow and Downflow Wet ESP Systems
- High Frequency Switch Mode Power Supplies
- CFD Modelling

CONTACT

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E-TUBE® WET ESP: ADVANCED TECHNOLOGY MEANS TOP PERFORMANCE

The collection of fine particulate emissions is often one of the most difficult environmental control problems faced by industry. These sub-micron particles present a significant threat to human health and are one of the leading causes of visibility degradation. Industrial operators are looking for technologies that can meet this challenge at a reasonable capital and operating costs.

The Geoenergy® E-Tube® Wet Electrostatic Precipitator (Wet ESP) is a technology that has been successfully applied to hundreds of tough particulate control applications around the world.
Typical applications include:

- Biomass Fired Boilers
- Wood Dryers
- Fiberglass & Mineral Wool Insulation Manufacturing
- Sewage Sludge and Hazardous Waste Incinerators
- Fine Particle Sources at Many Other Process Applications

The E-Tube® design features a proprietary disk-in-tube configuration and a state-of-the-art high frequency power supply to maximize the electric field intensity. The circular E-Tubes maximize performance by exposing the gas stream to a uniform electric field. In addition, each project is custom designed to meet the project requirements and is supported by an experienced team.

LUNDBERG'S AREAS OF EXPERTISE

- ❑ BY-PRODUCT RECOVERY
  - ❑ Tall Oil Soap — ❑ Acidulation — ❑ Storage
  - ❑ Turpentine — ❑ Condensing — ❑ Storage
- ❑ CHEMICAL HANDLING AND STORAGE
  - ❑ Sulfur
  - ❑ Caustic
  - ❑ Acids
  - ❑ Sulfur Dioxide — ❑ Storage — ❑ Vaporization
- ❑ CHEMICAL GENERATION
  - ❑ Sulfur Dioxide
  - ❑ NSSC Pulping Liquor
  - ❑ Sulfite/Bisulfite Pulping Liquor
- ❑ EVAPORATORS FOR PULPING LIQUOR
  - ❑ Multiple-Effect — ❑ Vapor Recompression
  - ❑ Strong Liquor Concentrators — ❑ Crystallizer
  - ❑ Pre-Evaporation — ❑ REX Technology
  - ❑ Falling Film
- ❑ FOAM CONTROL
  - ❑ Washer Filtrate — ❑ Weak Liquor Storage — ❑ Soap Skimming
  - ❑ Foambreaker for Light Foam
  - ❑ Soap Concentrator for Heavy Foam and Soap
- ❑ HEAT RECOVERY AND UTILIZATION
  - ❑ Blow Heat — ❑ Condensers — ❑ Systems
  - ❑ Pre-Evaporation
  - ❑ Digester Heaters and Circulation
  - ❑ Direct Contact Gas Coolers
  - ❑ TMP — ❑ Hot Water — ❑ Steam Generation
  - ❑ Heavy Liquor Heaters
  - ❑ Waste Heat Boilers
- ❑ LUNDBERG CUSTOM EQUIPMENT
  - ❑ Pressure/Vacuum Relief Valves (PVRV)
  - ❑ Flame Arresters
  - ❑ Jacketed Valves
  - ❑ Lundberg Soap Separator/Soap Skimming Rake
  - ❑ Heat Exchangers — ❑ Heavy Liquor Heaters
  - ❑ SO_2 Gas Fans
- ❑ POLLUTION CONTROL
  - ❑ Black Liquor Oxidation — ❑ Weak — ❑ Strong
  - ❑ Condensate Stripping — ❑ Steam — ❑ Air
  - ❑ TRS — ❑ MeOH / BOD — ❑ COD
  - ❑ Noncondensible Gas — ❑ Collection — ❑ Incineration — ❑ Scrubbers
  - ❑ Strong — ❑ Dilute — ❑ SOG
  - ❑ Direct Fired Oxidizer (DFO)
  - ❑ Plywood Industry — ❑ Heat Exchangers — ❑ Steam Tunnel Condensate Evaporator
  - ❑ Regenerative Thermal Oxidizer (RTO) — ❑ Regenerative Catalytic Oxidizer (RCO)
  - ❑ Wet Electrostatic Precipitator (ESP)
- ❑ SPECIAL SYSTEMS
  - ❑ White Liquor Oxidation — ❑ Air — ❑ Molecular Oxygen
  - ❑ Sulfur Addition – Kraft Liquor
  - ❑ Recausticizing – White Liquor
  - ❑ Ash Treatment Systems – Saltcake
- ❑ TURNKEY
  - ❑ Engineering
  - ❑ Complete EPC