Rotating Contacting Device

Problem Statement: Rotating Contacting Device, RCD, is a rotating device for the contact between gas and liquid flow in wastewater treatment. It enables efficient contact of liquid and gases to offer energy-efficient technologies for wastewater vapourisation using ambient air, cooling towers, humidifiers, evaporative condensers, biogas scrubbers, exhaust gas scrubbers, aerators, air cleaners, etc. An extra attachment or a device is of high priority to fast vaporisation by providing a large surface area for mass transfer between air, gas, or liquid types.

Uniqueness of the Solution: Modular Rotating Contacting Disk-based Mass and Heat Exchanger Technology is energy-efficient H&ME while offering high reliability and design flexibility in various applications. The device provides a greater surface area of contact between two fluids and maintains enabling rotation of disks with the help of liquid flow. It is operable over a wide range of liquid-gas (L/G) ratios without flooding issues at very high L/G or effective wetting at low L/G. Modular design offers carryover free contacting with High Mass Transfer Coefficients using a textured rotating disk. Low air/gas side pressure drops, ~10 Pa, and a low pump head of ~3 m makes the unit energy efficient. The rotating disc is predominantly plastic, and composite disks of PP, PC, SS304, 316, 316L, Al, MS, etc., are possible according to fluid type. Issues like corrosion, erosion, fouling, catalytic activity, etc., can be resolved by online cleaning following clean-in-place using Jet Cleaning.

Current Status of Technology: Rotating contacting devices are demonstrated at the field, licensed and commercialised for wastewater vaporisation and indirect evaporative cooling.

Societal Impact: The device is energy-saving, environment-friendly, and reduces embodied energy.

Patent(s): Filed

Relevant Industries: Environment, Energy, Steel, Industrial Chillers.

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