

Example of report on electrostatics

[Art & Culture](#), [Painting](#)



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Electrostatic Precipitator Electrostatic precipitators are used to remove dust and other particulates from smoke and exhaust fumes. It used to minimize air pollution and protect the environment. The precipitator consists of a high voltage wires that are fitted across the chimney. The wires are negatively charged using voltage of 50, 000V. As the smoke passes through the chimney, they are negatively charged by the wires. The smoke becomes negatively charged because electrons are passed to it from the wires. The negatively charged smoke particles are attracted to the positively charged metal plates that are found on the upper side of the chimney. The dust particles are collected at the positive plates while the smoke that is free from dust particles moves up into the atmosphere. The chimney is struck with a hammer to shake off the dust particles in the bin where they are collected.

Electrostatic painting

Electrostatic painting is used to spread paint on the body of the car during manufacturing. The sprayer's nozzle is positively charged by high voltage. As the paint droplets come out through the nozzle they become positively charged. The paint droplets loss electrons as they exit the nozzle. Thus, they acquire excess positive charges. The droplets spread out because of the

repulsion of positive charges. The car or an object to be painted is negatively charged. As a result, the droplets are attracted to the surface of the object or car. The paint is spread over the body of the car that is negatively charged.

Electrostatics in photocopier

Photocopies use the principles of electrostatics to produce copies of documents. A photocopier consist of an imagining part called drum that is covered with a photoconductive material. A photoconductive materials transfer charges they are exposed to light. When the button of the copier is switched on a high voltage wire, makes the surface of the drum become positively charged. Meanwhile, a beam of light moves across the paper placed on the glass surface. The beam of light is derived from lasers. The white areas of the paper reflect the light back to the drum while the dark portions of the paper absorb the light. The reflected light neutralizes the positive charges on the drum. The areas that are not exposed to the reflected light remain positively charged. Negatively charged toner is then distributed on the drum. Toner is a powdered substance that printers and photocopiers use make printed text and images. The powders in the toner are attracted to the positively charged sections of the drum. This is because the toner is negative while the surface of the drum contains positive charges. The copier pulls the paper from the paper tray and charges it positively. The paper is passed over the drum. The paper attracts the toner from the surface of the drum. The paper goes through rollers and is heated to melt and reinforce the toner on the paper.

Electrostatic spraying of water

The electrostatic paint spraying can be applied in water irrigation. The nozzle of the water sprinkler is negatively charged by high power voltage source.

The water is pushed through the nozzle by motor action. As the water exits through the nozzle, the droplets are negatively charged. The droplets spread because of the repulsion of like positive charges. Consequently, water is sprinkled to the farm in all directions.

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