

Electrostatic coating technologies

Terronics Development Corp. (TDC), the United States, has developed new technology which facilitates uniform, targeted, efficient and controllable liquid coating of foods. At the heart of this process is Terronics' patented electrostatic nozzle. Fluid is propelled from the nozzle entirely by electrostatic force, thereby generating controllable, highly charged, uniformly sized droplets. The charged droplets create an inherently uniform coating. Guided by electrostatic attraction to a grounded target, areas on the target that are not coated attract new droplets more strongly. Under some geometry conditions, charged droplets even wrap around to the backside of the targets, rather than drifting or over-spraying. Moreover, the robust technology allows precise targeting of a wide variety of non-conductive fluids (even unheated honey can be sprayed). Some of the applications of this technology include:

- To apply lubricants uniformly and controllably to the ovenband and other baking equipment for even baking and minimized lubricant use;
- Liquid vitamins and flavouring can be uniformly applied, with targeted coverage of surfaces of all shapes; and
- High efficiency dust suppression – charged droplets collide with particulates.

TDC's electrostatic powder/particulate coating is the best method for powder coating chips, crackers and other foods. In this system, the feed material is metered, dispersed into a cloud and then electrostatically charged and deposited on the target. The injector shape propels the feed as a slow-moving cloud towards the target. After being dispersed, the particles are uniformly spaced and ready for effective electrostatic charging from corona electrodes. Using this process, flavourings can be accurately metered and controllably applied on a conveyor, with uniform coverage of chips, crackers and other shapes. It can also be employed to apply flour and other powder release agents to tightly packaged products to avoid sticking.

TDC has also developed a powder metering system that delivers a steady, controllable stream of powder/particulate with very little real time variation in flow rate. *Contact: Terronics Development Corp., 7565 W. 900 North Elwood, IN 46036, the United States. Tel: +1 (765) 5520 808; Fax: +1 (765) 5520 810.*