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**Electrospray application to powder production and surface coating.**

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jaworek@imp.gda.pl***Abstract**

Electrospray application to fine powder particles generation, surface coating, nanocomposite material production, and 2D or 3D printing have been reviewed in this paper. Electrospray is a process of liquid atomization via imposing the electrical forces on the liquid jet flowing from a capillary nozzle. The presented results demonstrate that electro spraying is a versatile tool, which is able to generate fine droplets of uniform size. The advantage of electro spraying is that it is a single-step, low-energy, low-cost and flexible production process, which allows production of droplets smaller than 10  $\mu\text{m}$ . In most cases, the process can be performed at ambient temperatures and atmospheric pressure. It was shown that variety of 2D or 3D micro- or nanocomposite structures can be effectively produced by the dot-by-dot technology from a single nozzle or from combined nozzles. Those structures can be formed from organic or inorganic materials, obtained after solvent evaporation from microdroplets generated from a solution of the material to be deposited or its precursor.

**Keywords:** electro spraying; EHDA; surface coating; powder production; microencapsulation; jet printing.

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