

## High Throughput Electrospinning

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Electrospinning has emerged as a versatile method to produce submicron fiber mats from natural or synthetic polymers. However, it does still remain largely in a lab scale due to limited yielding from most commercial systems. Monoaxial and multiaxial structures, produced by concentric needles or other spinning devices, are of great interest in many applications and can also be made to generate high throughput systems. Fluidnatek® equipment and applications by Bioinicia S.L. aims at providing flexible electrospinning solutions from lab scale to pilot plant in various applications.

As an example, in the field of refrigeration, the encapsulation and incorporation of phase change materials (PCMs) inside refrigeration equipment can be commercialized as a plausible solution to buffer temperature variations along the whole cold chain. To this end, structures containing PCMs can be obtained by electrospinning which are subsequently compressed to form functional structures of interest in the application.

### **Reference:**

Development of zein-based heat-management structures for smart food packaging, Pérez-Masiá, R., López-Rubio, A., Lagarón, J.M. 2013 *Food Hydrocolloids* 30 (1) , pp. 182-191