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Ph.D. Program in Electronics, Computer Science and Electrical Engineering

SEMINAR

Electrospinning as a method of treating fibers for smart tissues

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**Tuesday 25th November 2025, 4:00 p.m.
Magenta seminar room**

Abstract: With the rise of nanotechnology, the study of material behaviour at the nanoscale has gained growing significance. Among the promising fabrication methods, electrospinning stands out as a technique for generating fine specific fibers. Their versatility and wide-ranging potential have made it a subject of considerable interest in recent years, with notable applications in tissue engineering, biosensors, wound healing, sensors, and conductive materials.

Fibers at the micro- and nanoscale can be produced by subjecting a polymer solution or melt to a strong electric field. The nanofiber mats obtained through this method reproduce the structure of the extracellular matrix far more precisely than those formed by conventional approaches. Producing fibers with diameters below one micron provides several benefits, including a high surface-to-volume ratio, tunable porosity, and the ability to tailor fiber composition to achieve specific functions and properties.

During electrospinning, both the polymer and any incorporated fillers influence the functional characteristics of the fibers. However, the applied electrostatic field also plays a critical role in determining fiber quality. The seminar will focus on the control of the electric field lines, in order to prevent the fibers from breaking or becoming entangled, so allowing the electrospinning process to run efficiently and consistently.

Bio: She obtained her PhD in Computer Science in 2012, and previously obtained her master's degree in Electrical Engineering with a specialization in Applied Computer Science and Electrical Machines and Apparatus in 2006. She currently works as an assistant professor in a research and teaching group and holds the position of Deputy Director of the Institute for Development.

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