

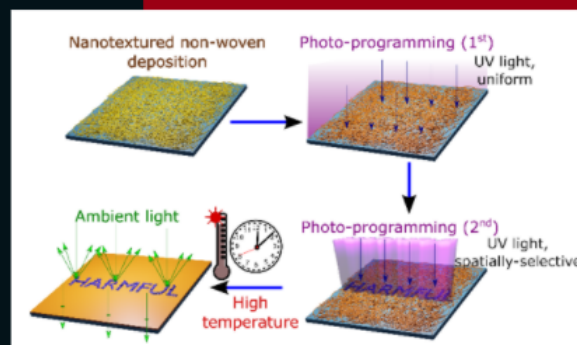
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“Polymer nanofibers as platform for energy harvesting and smart labels”



IN PRESENCE AULA ROSTAGNI - ZOOM MEETING - YOUTUBE STREAMING

Polymer nanofibers as platform for energy harvesting and smart labels

1D organic materials are gaining continuous research interest, and polymer nanofibers, to be used as building blocks of complex architectures, can lead to advances in many fields of application. In particular, electrospun nanofibers exhibit highly interesting physico-chemical properties, can be designed with multifunctional capabilities and can be used as sensors or to store and convert energy. The interest on this class of materials in industrial applications, mainly relies on their high surface to volume ratio, large area coverage, and availability of low-cost production technologies. Here I report on our research on electrospun fibers, merging photonic functions and energy harvesting capability¹. An additional exploited application relies on their use as photoprogrammable material for intelligent labels. It is well known indeed that spoiled perishable products, such as food and drugs, when exposed to inappropriate temperature, cause million illnesses every year. I will introduce to optically-programmed, non-colorimetric indicators based on polymer fibers. The devices operate by visual contrast with ambient light and can be designed to achieve the desired time-temperature response.

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References

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2 L. Romano et al. *Nature Communications* 2020, 11, 5991, <https://doi.org/10.1038/s41467-020-19676-y>.

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