**Novel active food packaging based on electro-blow spun hybrid nanofibers: fabrication, characterization**

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In the modern food packaging industry, the role of nanostructured materials has become increasingly crucial in ensuring food safety, quality, and sustainability. The use of nanostructured materials such as nanofibers in food packaging can potentiate their properties and functionalities. These materials offer remarkable advantages in the packaging field due to their exceptional barrier properties, providing improved resistance to gases, moisture and external contaminants. Gelatin/Chitosan/polyamide 6 hybrid nanofiber were prepared through the electro-blow spinning technique, a hybrid nanofiber manufacturing technique that combines the benefits of both solution blow spinning and electrospinning. In this technology, the electric field aids in the uniform stretching of the solution, resulting in more uniform fibers of higher quality. The incorporation of *Cedrus atlantica* essential oil improves the antimicrobial activity of the resulting nanofiber, making it suitable for food packaging applications. In addition, the morphological properties, thermal behavior, FTIR analysis, contact angle, air permeability and mechanical property of the hybrid nanofibers were determined. This study has yielded promising results for the hybrid nanofibers produced. These nanofibers exhibit favorable thermal properties, thin morphology with an average diameter of around 410 nm. Notably, the contact angle measurements showed values exceeding 90°, indicating hydrophobic characteristics, a valuable attribute for food packaging applications. The originality of this study lies in producing a hybrid nanofiber, implementing electro- blow spinning technique, with a higher mechanical and antibacterial efficiency for food packaging application.

**Keywords**: electro-blow spinning, food packaging, hybrid, nanofibers.

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