

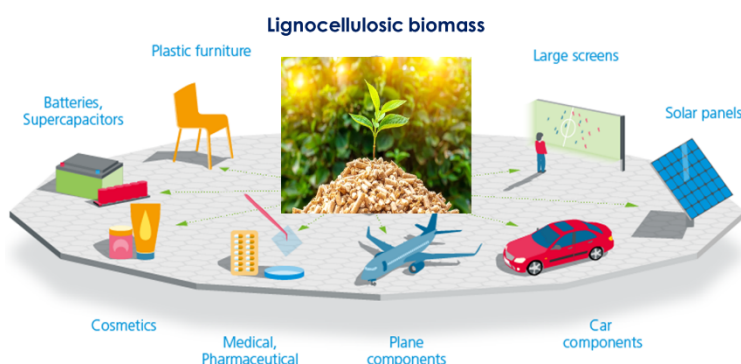
Biomass as a Sustainable Resource: Unlocking the Potential of Lignocellulosic Materials for High-Performance Applications

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Abstract

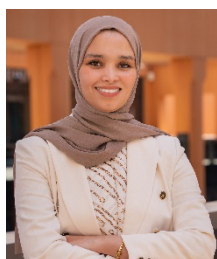
The growing global emphasis on sustainable materials, coupled with the dwindling availability of fossil resources, has driven the search for high-value, renewable substitutes. Biomass, particularly lignocellulosic materials, has emerged as a promising category of sustainable resources due to its intrinsic renewable characteristics, biodegradability, biocompatibility, cost-effectiveness, and adaptability in terms of physical and surface properties. This presentation explores the exceptional potential of biomass in addressing the challenges of material sustainability across various industries. By investigating innovative lignocellulosic sources, we aim to develop a wide range of high-performance materials with exceptional properties that cater to the demands of modern applications. The research underscores the role of biomass-based materials in advancing environmentally sustainable and high-performance solutions, driving innovation across sectors such as packaging, energy, and composites. Through these efforts, we aim to establish biomass as a cornerstone of the future circular economy, contributing to both environmental preservation and industrial progress.



Recent Publications

1. Z. Kassab, Youness Abdellaoui, Rachid Idouhli, Mohamed Hamid Salim, Fatima El Bachraoui, El-houssaine Ablouh, Mounir El Achaby. *Polym Compos.* 2024; 1-15.
2. Z. Kassab, Hamza Daoudi, Mohamed Hamid Salim, Chirâa El Idrissi El Hassani, Youness Abdellaoui, Mounir El Achaby. *International Journal of Biological Macromolecules* 265 (2024) 13089
3. Azaryouh, L., Ait Benhamou, A., Aziz, K., Khalili, H., Jaworski, A., Ullah, L., ... & Kassab, Z*. (2024). *Biomacromolecules*, 25(8), 4843-4855.
4. Kasbaji, M., Mennani, M., Barhoumi, S., Esshouba, Y., Oubenali, M., Ablouh, E. H., Kassab, Z., Moubarik, A., El Achaby, M. (2024). *Langmuir*.
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Biography



Dr. Zineb KASSAB is an assistant professor at Materials Science and Nanoengineering (MSN) Department; Mohammed VI Polytechnic University (UM6P). Her research is focused on the extraction and characterization of new cellulosic materials from renewable source-derived materials; valorization of lignocellulosic biomass (natural fibers, agricultural and agro-industrial residues and marine products); development of polymer and biopolymer-based bio-nanocomposite: processing, characterization and applications and development of functional materials for different applications including active food packaging, water treatment and energy storage.

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