

Abstract

Advanced Renewable Nanomaterials for Sustainable Development [†]

Mert Yildirim ^{1,2,3,*}  and Zeki Candan ^{1,3}

¹ Department of Forest Industrial Engineering, Istanbul University-Cerrahpasa, 34473 Istanbul, Turkey

² Scientific Research Projects Coordinatorship, Istanbul Gelisim University, 34320 Istanbul, Turkey

³ Biomaterials and Nanotechnology Research Group, Istanbul University-Cerrahpasa, 34473 Istanbul, Turkey

* Correspondence: yildirimmert1993@gmail.com

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Abstract: At the UN General Assembly, 193 United Nations Member States adopted the 2030 Agenda for Sustainable Development. This initiative is a global call to action. To achieve sustainable development, 17 Sustainable Development Goals (SDGs) have been defined, and nanoscience and nanotechnology play a critical role in these goals. Nanotechnology is regarded as an enabling technology since it involves the study, modification, manipulation, or creation of processes, structures, materials, or devices at the nanoscale. Nanotechnology is rapidly expanding in many areas, including aerospace, energy, automotive, medicine, and food, as well as in the textile, chemical, and electrical-electronic industries, and is expected to have a bright future. Nanomaterials are materials that are purposefully designed in a size range of 1 to 100 nm in 1, 2, or 3 dimensions. Nanotechnology and nanomaterials have a wide range of applications in every area of science and engineering, resulting in greater improvements. In particular, lignocellulose-based nanomaterials with a nanofibrillar structure are produced from natural resources and can be used in a wide range of commercial applications. The eco-friendliness, unique properties, and diverse capabilities of nanomaterials are being explored in order to develop innovative materials and applications in almost all areas. This review focused on nanotechnology and advanced renewable nanomaterials for sustainable development.

Keywords: nanotechnology; nanoscience; nanomaterials; sustainable development



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