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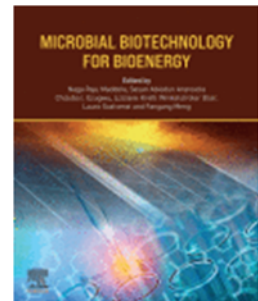
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## Microbial Biotechnology for Bioenergy

2024, Pages 3-21



# Chapter 1 - Microbial biotechnology for bioenergy: general overviews

Author links open overlay panel [Sesan Abiodun Aransiola](#)<sup>1 2</sup>, [Oyegbade Samuel Adeniyi](#)<sup>3</sup>, [Isibor Patrick Omoregie](#)<sup>3</sup>, [Fadokemi O. Akinhanmi](#)<sup>3</sup>, [Margaret I. Oniha](#)<sup>3</sup>, [Naga Raju Maddela](#)<sup>4</sup>

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## Abstract

Bioenergy technologies are environment-friendly, renewable, and a clean way of powering the global community. Bioenergy technology is an innovation that improves the quality of life by simply reducing water and air contamination; this also mitigates energy dependence through creation of renewable resources locally. Bioenergy sources include wind, water, geothermal, nuclear power, solar, and natural gases. The most interesting and important part of bioenergy is the environmental benefits as part of a global energy future, which are aided by microorganisms. The future of bioenergy, however, seems bright because recent global information in this field proved that more renewable energy capacity has been fixed globally than new fossil fuel and nuclear capacity combined. As the global population progressively increases, there is an ever-increasing demand for clean energy. The only safe answer to this is sustainable energy, which will protect the earth from climate change and make it a good habitat for all living organisms. This chapter provides a general overview to microbial biotechnology for bioenergy, sources, and challenges of bioenergy, role of microorganisms in bioenergy generation, innovations in bioenergy, and the environmental conservation of bioenergy.

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