

Valorization of Biomass Waste Materials, a Biorefinery Concept

Chunilall, Viren
Council for Scientific and Industrial Research (CSIR)
Meiring Naude Drive, Pretoria, 0184
Email: VChunilall@csir.co.za

Waste has become an emerging problem threatening the ecosystem, given the harmful content generated from the global afterlife of waste. These problems affect all spheres of life, and the waste must be controlled, managed, or converted to new products. The fundamental ways of addressing the increasing global flows of waste revealed through management processes have significantly increased business opportunities. Waste must be transformed into valuable products to reduce pollution, create jobs, and an environmentally pleasant atmosphere. Researchers have invented methods of converting waste into value-added products, aiming toward waste management and reduction. Despite considerable advances, the reuse and recycling of agricultural waste as biomass resources (renewable feedstock for renewable energy generation and specialty chemicals) from several natural sources are underutilized. This collection of essays discusses different biomass waste sources, biomass feedstocks characterization, pre-treatment and techniques for valorizing biomass to value-added products, and policies and regulations on the circular economy.