

DEVELOPMENT OF BIOMATERIALS FROM RENEWABLE RESOURCES

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In recent years, the use of renewable natural resources have become the focus of research in supplementing and/or replacing traditional petrochemical products due to growing energy demands and environmental concerns. The utilization of lipids and other renewable resources has been considered to play a primitive role towards sustainable development due to their large scale availability, built-in-functionality, biodegradability and no net carbon dioxide (CO₂) production. In addition, a broad range of monomers can be obtained as a single feedstock. These attributes make lipids a good fit for the development of renewable biomaterials. This presentation will focus on the conversion of lipids, from various sources including waste streams such as waste cooking oil and lipids extracted from spent foul, into monomers, biopolymers and biomaterials for packaging water remediation, biomedical and other applications. The ability for complete conversion of oils in just few minutes under solvent free conditions into monomers, biopolymers and bio-composites/nanocomposites is undoubtedly an attractive concept from both an academic and an industrial point of view.

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