

Write-up on the book: NANOCELLULOSE FROM TECHNO-ECONOMIC PERSPECTIVE, Dr. Mahendra Patel, Publisher: Industypaper, New Delhi & Sambalpur, India, ISBN: 978-81-923542-7-9, 2022, 560 p.

Nanocellulose is gradually gaining prominence due to its property-enhancing ability as a super additive in a large number of products; notably, paper and packaging, food, medicine, composite materials, cosmetics, textile, energy and electronics and in many other materials. Nanocellulose-based composite materials find applications in regenerative medicine, in tissue engineering for artificial organs *etc.*, as nanocellulose is biocompatible. The possibility of its use as antimicrobial material to combat the Corona virus has recently been advocated and, if the technology can be advanced, it will be of immense service to the society.

The number of publications and patents on nanocellulose has been rising every year, as it is fairly a new product and it gives charismatic properties on addition to various materials. The impetus to the development of new products with enhanced performance of nanocellulose emanates from the facts that nanocellulose is produced from abundantly available renewable plant materials; it is biocompatible and environmentally benign, and it has the ability to replace fossil-based petro-chemical products.

Product quality and processing ease as well as environmental benignity and financial benefit of an industry depend, to a major extent, on the raw materials used and the techniques of processing them to obtain the product. The availability, cost and biodegradability of the raw material have a bearing on the techno-economic viability of the technology employed. Though industrial production of nanocellulose has commenced and capacities are increasing, the best available technology and raw material are still sought. Techno-economically viable raw materials and production technology for effective and large-scale applications are yet to be sorted out; an integrated system remains to be addressed.

This book addresses the techno-economic aspects of nanocellulose production. Raw materials account for 40-70% of the total cost of nanocellulose production, at an industrial scale, and thus govern the techno-economics. This book discusses the vital issue of techno-economics, starting from the individual raw material to processing technologies.

There are more than forty different raw materials discussed in this book, apart from different trees and industrial as well as agricultural wastes, produced in small volumes. Papermaking fibres, namely wood, agro-residues and recycled fibres, are discussed elaborately in this book, considering the techno-economic implications of papermaking fibres in nanocellulose production at an industrial scale.