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Sommario/riassunto

BIOFUEL EXTRACTION TECHNIQUES The energy industry and new energy sources and innovations are rapidly changing and evolving. This new volume addresses the current state-of-the-art concepts and technologies associated with biofuel extraction technologies. Biofuels are a viable alternative to petroleum-based fuel because they are produced from organic materials such as plants and their wastes, agricultural crops, and by-products. The development of cutting-edge technology has increased the need for energy significantly, which has resulted in an overreliance on fossil fuels. Renewable fuels are an important subject of research because of their biodegradability, eco-friendliness, decrease in greenhouse gas (GHG) emissions, and favorable socioeconomic consequences to counteract imitations of fossil fuels. Different extraction techniques are used for the production of biofuel from renewable feedstocks. A good example is biodiesel, a promising biofuel which is produced by transesterification of plant-based oils. Extraction of oil includes traditional methods, solvent extraction, mechanical extraction, microwave-assisted and ultrasonic-assisted methods. Many innovative techniques are also used to overcome the limitations of conventional methods. Microwave-assisted and ultrasonic-assisted are some of the new techniques which include the pre-treatment of the raw material using either ultrasonic waves or radio waves which helps in increasing the efficiency of the extraction of oil and improves the final quality of the oil. Written and edited a team of experts in the field, this exciting new volume covers all of these technologies with a view toward giving the engineer, scientist, or other professional the practical solutions for their day-to-day problems. It also contains the theory behind the practical applications, as well, making it the perfect reference for students and engineers alike. Whether for the veteran engineer or scientist, the student, or a manager or other technician working in the field, this volume is a must-have for any library.