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Titolo	Organic Sonochemistry : Challenges and Perspectives for the 21st Century // by Jean-Marc Lévêque, Giancarlo Cravotto, François Delattre, Pedro Cintas
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ISBN	3-319-98554-X
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Descrizione fisica	1 online resource (130 pages)
Collana	Ultrasound and Sonochemistry, , 2511-123X
Disciplina	540.72
Soggetti	Chemical engineering Organic chemistry Physical chemistry Biomaterials Industrial Chemistry/Chemical Engineering Organic Chemistry Physical Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cavitation and chemical reactivity (serving as Introduction, ca. 12-15 pp) including acoustic power measurements -- Efficient organic synthesis: what ultrasound makes it easier (ca. 15-20 pp) -- Sonication in neoteric solvents. A further look at synthetic plans (ca. 10-12 pp) -- Chemical modifications of renewable precursors: biomass valorization (ca. 10-12 pp) -- Gone with flow: miniaturization and safer chemistry (ca. 10-12 pp) -- Ultrasound as mechanical force (ca. 10-12 pp) -- Hybrid technologies in action: the US-MW reactor as prototype (ca. 10-12 pp) -- Scaling-up : Enabling the full potential of industrial applications of Ultrasound (ca. 10-12 pp) .
Sommario/riassunto	This book provides informative, useful, and stimulating reading on the topic of organic sonochemistry – the core of ultrasound-based applications. Given the increasing interest in new and improved technologies, allied to their green and sustainable character (not always a valid premise), there is a great attraction for organic chemists to

apply these protocols in synthesis and process chemistry. Unfortunately, as with other enabling technologies, many researchers new to the field have received a simple and dishonest message: just switch on! Therefore a significant portion of sonochemical syntheses lack reproducibility (surprisingly cavitation control and/or ultrasonic parameters are omitted) and the actual role of sonication remains uncertain. While this book does not provide a detailed description of fundamentals, the introductory remarks highlight the importance of cavitation effects and their experimental control. It presents a number of concepts of sonochemical reactivity and empirical rules with pertinent examples, often from classical and recent literature. It then focuses on scenarios of current interest where organic chemistry, and synthesis in particular, may benefit from sonication in terms of both chemical and mechanical activation. The “sustainable corner” of this field is largely exemplified through concepts like atom economy, renewable sources, wasteless syntheses, and benign solvents as reaction media. This book is useful for both researchers and graduate students, especially those familiar with the field of sonochemistry and applications of ultrasound in general. However, it is also of interest to a broader audience as it discusses the fundamentals, techniques, and experimental skills necessary for scientists wishing to initiate the use of ultrasound in their domain of expertise.

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