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Alternative Solvents for Green Chemistry (RSC Green Chemistry Series)

By Francesca M. Kerton

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Conventional solvents can be hazardous in terms of toxicity, flammability and waste generation. Consequently, alternative solvents now form a substantial part of green chemistry. This book covers the latest developments in this growing field as well as some key areas that have been overlooked in previous literature. Solvents are important in many areas of chemistry so the author has adopted a general approach encompassing of a wide range of solvents. As part of the Green Chemistry Series, examples are used that tie in with the 12 principles of green chemistry such as atom efficient reactions in benign solvents, processing of renewable chemicals and materials in green solvents.

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Editorial Review

Review
"provides a very good introduction to potentially green alternative solvents for researchers new to the field...excellent starting point for those interested in working with green alternative solvents" (*"JACS, 131, 12016 - 12016"*)

From the Back Cover
Green chemistry, as a relatively new sub-discipline, is a rapidly growing field of research. Alternative solvents - including supercritical fluids and room temperature ionic liquids - form a significant portion of research in green chemistry. This is in part due to the hazards of many conventional solvents (e.g. toxicity and flammability) and the significant contribution that solvents make to the waste generated in many chemical processes. Solvents are important in analytical chemistry, product purification, extraction and separation technologies, and also in the modification of materials. Therefore, in order to make chemistry more sustainable in these fields, a knowledge of alternative, greener solvents is important. This book, which is part of a green chemistry series, uses examples that tie in with the 12 principles of green chemistry e.g. atom efficient reactions in benign solvents and processing of renewable chemicals/materials in green solvents. Readers get an overview of the many different kinds of solvents, written in such a way to make the book appropriate to newcomers to the field and prepare them for the 'green choices' available. In addition, it includes some cutting-edge results from the recent literature to give a clearer picture of where green solvents are today. The book also removes some of the mystique associated with 'alternative solvent' choices and includes information on solvents in different fields of chemistry such as analytical and materials chemistry in addition to catalysis and synthesis. The latest research developments, not covered elsewhere, are included such as switchable solvents and biosolvents. Also, some important areas that are often overlooked are described such as naturally sourced solvents (including ethanol and ethyl lactate) and liquid polymers (including poly(ethyleneglycol) and poly(dimethylsiloxane)). As well as these additional alternative solvents being included, the book takes a more general approach to solvents, not just focusing on the use of solvents in synthetic chemistry. Applications of solvents in areas such as analysis are overviewed in addition to the more widely recognised uses of alternative solvents in organic synthesis. The book is aimed at newcomers to the field whether research students beginning investigations towards their thesis or industrial researchers curious to find out if an alternative solvent would be suitable in their work.

About the Author
Francesca M Kerton is Assistant Professor (Green Chemistry) in the Department of Chemistry, Memorial University of Newfoundland, Canada. She gained her BSc in Chemistry with Environmental Science at the University of Kent and her PhD in Chemistry at the University of Sussex. For 2 years she was a Postdoctoral Fellow at the University of British Columbia in Canada followed by a Lecturer, then Royal Society University Research Fellow, at the University of York, UK. She has contributed to many books and journal articles and her research interests are green chemistry including solvent replacement, catalysis and renewable feedstocks.

Users Review

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Justin Moore:

Precisely why? Because this Alternative Solvents for Green Chemistry (RSC Green Chemistry Series) is an unordinary book that the inside of the publication waiting for you to snap this but latter it will jolt you with the secret it inside. Reading this book alongside it was fantastic author who else write the book in such amazing way makes the content interior easier to understand, entertaining way but still convey the meaning completely. So , it is good for you for not hesitating having this nowadays or you going to regret it. This excellent book will give you a lot of benefits than the other book get such as help improving your expertise and your critical thinking approach. So , still want to delay having that book? If I were you I will go to the publication store hurriedly.

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