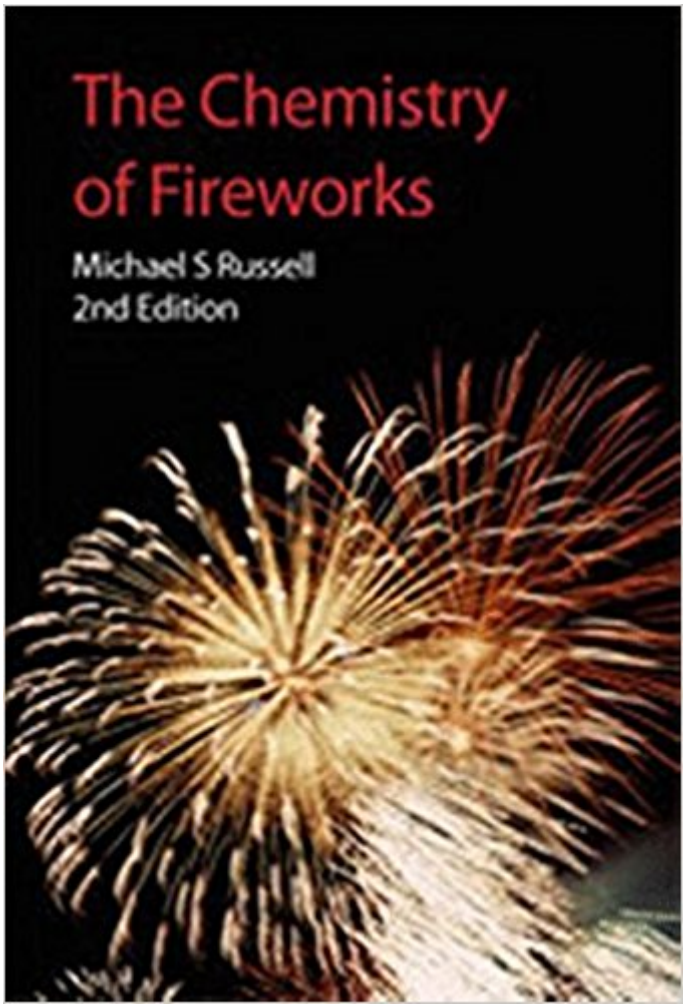
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The Chemistry Of Fireworks: RSC (RSC Paperbacks)



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Synopsis

"For centuries fireworks have been a source of delight and amazement in cultures around the world. But what produces their dazzling array of effects? This book takes you behind the scenes to explore the chemistry and physics behind the art of pyrotechnics. Topics covered include history and characteristics of gunpowder; principles behind each of the most popular firework types: rockets, shells, fountains, sparklers, bangers, roman candles and wheels; special effects, including sound effects, coloured smokes and electrical firing; firework safety for private use and displays; and firework legislation. The Chemistry of Fireworks is aimed at students with A level qualifications or equivalent. The style is concise and easy to understand, and the theory of fireworks is discussed in terms of well-known scientific concepts wherever possible. It will also be a useful source of reference for anyone studying pyrotechnics as applied to fireworks. Review Extracts ""a worthwhile addition to the pyrotechnist's library"" Fireworks ""a useful source of information which makes absorbing reading."" Angewandte Chemie, International Edition"

Book Information

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Customer Reviews

"""... a useful primer or supplemental text for students and a handy reference source for fireworks aficionados."""""""" ... a worthwhile addition to the pyrotechnist's library ..."""""""... interesting background information for those with A-level chemistry or its equivalent."""""""... a useful source of information which makes absorbing reading."""""""... a welcome primer on the chemistry of

pyrotechnics."""

For centuries fireworks have been a source of delight and amazement in cultures around the world. But what produces their dazzling array of effects? This book, a fully revised, extended and updated second edition explores the chemistry and physics behind the art of pyrotechnics. The objectives of the book are to provide the student with the essential principles behind chemical reactivity, the generation of noise, smoke and flame, which derive from the chemical ingredients and the way in which they are used. It introduces a particularly attractive branch of chemistry that students can easily reproduce (under supervision) in any laboratory equipt with a Bunsen burner and range of metal salts to give coloured flames or sparks. Its scope ranges from the history of gunpowder and fireworks in the UK, to the chemical characteristics of gunpowder, the form and functioning of all the main types of fireworks, special effects, fireworks safety and current fireworks legislation. The book opens with historical material, including unique historical photographs, and is valuable for its technical content. It then advances to a presentation on the characteristics of gunpowder, whose unique properties cause it to be the mainstay of the fireworks industry, even today. Succeeding chapters describe the manufacture and functioning of the most popular fireworks, including rockets, shells, fountains, roman candles, bangers, gerbs and wheels in a stimulating and easy assimilated way for those approaching the subject for the first time. The book covers current developments in the field including more robust and accurately timed fusing systems, the use of synthetic polymers as binders and 'daytime' fireworks. Chapters on fireworks safety, current legislation and a comprehensive glossary completes the book. Whilst this second edition is aimed at students with A level qualifications or equivalent, it is also intended to be useful background material and a source of reference for anybody engaged in the study of pyrotechnics as applied to fireworks. The style is concise and easy to understand and readers will gain a clear understanding of the science of fireworks in terms of recognised scientific principles.

Anyone who loves fireworks, makes them or has tried to make them, will love this book. Written by a well respected authority at the University of Maryland who has taught a course in firework chemistry for years, this is a "must own". While it doesharp on some chemistry, it gives a clear picture of how and why fireworks WORK. It is easy to understand, makes fireworkscomprehensible and gives information about how fireworks can be safe when understood and used properly. If you lovefireworks and chemistry you will love this book.

This book has a glossary of terms at the beginning, most of which are ambiguous, some of which are just plain wrong. It seems as if the author tried to "dumb down" the terminology so anyone could understand it. However, in so doing, he's really alienated his target audience, i.e., people with at least some chemistry background. He has major problems with the definitions of explosions and detonation/deflagration. These are definitions that need to be clearly defined, and he screws a lot of it up. He consistently refers to black powder as "gunpowder", which may be a british thing, but it's still annoying and misleading. Some of the equations are helpful, but because of the incorrect information supplied in other parts of the book, I question their validity. This book gives a general overview, and it is decent with pictures and the explainations, but I'd never recommend it to someone who wanted to know the terminology used in the pyro industry, because it's mostly incorrect in this book. This book looks like it was put out in a rush. For example, on p.40, the book describes a "linear" equation, then gives an exponential one; it's just poor editing and writing to get things like that screwed up. An experienced pyrotechnician would know the difference between the screwed up definitions and things, but then, an experienced pyro wouldn't be reading this book. I found Weingart's 'Pyrotechnics' more useful than this. For some more of the physics-related items, this book would be better, but if you want to know some Chemistry, get Shimizu's 'Fireworks'.

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