

Review of: Pyrotechnic Chemistry

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Having spent more than 42 very enjoyable years working with energetic materials, particularly in the areas of military pyrotechnics and fireworks, I know the frustration faced by so many workers, both new and experienced, with the almost impossible task of finding useful reference books on these very specialized subjects. Also, as the total international experience in pyrotechnics and other energetic materials appears to be constantly reducing, it is essential for newcomers (and those not so new!) to be able to find good quality publications which give the widest picture in terms of in-depth technical content and practical examples. I believe that the book “*Pyrotechnic Chemistry*” published by the Journal of Pyrotechnics Inc. goes a long way to achieving this aim. The breadth of pyrotechnic related subjects covered by this publication is very wide as it is a compilation of papers (many previously published, but now updated), forming 19 chapters by 13 authors, who are well known and highly experienced in their respective fields.

Based upon my own favourite topics it is always pleasing to find a new book which covers aspects of military pyrotechnics, fireworks and related safety considerations. Chapters describing *Pyrotechnic Delays* and *Thermal Sources, Illumination and Illuminant Research, Propellant*

Chemistry and *Rocket Motor Design* provide interesting reading for the military researchers whereas the papers on *Chemical Components of Firework Compositions*, *Pyrotechnic Spark Generation*, *Glitter Chemistry* and *Strobe Chemistry* will be extremely useful to those working with fireworks and theatrical pyrotechnics.

Linking the technologies of all of the above subjects are chapters on *Pyrotechnic Chemistry*, *Chemical Thermodynamics*, *Pyrotechnic Ignition and Propagation*, *Control of Pyrotechnic Burn Rate*, *Primes and Priming*, *Chemistry of Coloured Flames*, *Chemistry of Black Powder* and *A Study of the Combustion Behaviour of Pyrotechnic Whistles*.

There are also important safety related chapters which include *Sensitiveness of Pyrotechnic Compositions*, *Hazardous Chemical Combinations* and *Assessing the Risks*. These chapters complement and reinforce the safety issues discussed elsewhere in the book.

I enjoyed the “easy to navigate” lay-out of *Pyrotechnic Chemistry* as each chapter is presented as a stand-alone paper, along similar lines to the format of a scientific seminar or conference proceedings. However, without an overall book index it does take time to ‘sieve out’ all the information on any specific subject. Each chapter gives many useful references adding up to a total of about 400.

This is one of my ‘A-list’ volumes that should be on the bookshelf of all those requiring an ‘in-depth’ introduction to these areas of pyrotechnics, however I am also certain that it will be a very useful reference source for the more experienced people working in this technical field.

Overall, all the authors have done an excellent job in compiling this fascinating and important pyrotechnic reference book.