

*Reaction! Chemistry in the Movies*, Mark Griep & Marjorie Mikasen, Oxford University Press, New York, 2009, x + 340 pp, ISBN 978-0-19-532692-5, \$49.95

Mark Griep is a chemistry professor at the University of Nebraska-Lincoln, where he has received a College Distinguished Teaching Award. Marjorie Mikasen, his wife, is an artist, with works in private and public collections. They have also “enjoyed watching movies for as long as we remember.” With the aid of an Alfred P. Sloan Foundation Public Understanding of Science and Technology grant they have produced an informative, entertaining, and potentially useful book on the portrayal of chemistry and chemists in motion pictures.

The organization of the book is topical and historical. There are five chapters on what they call the “dark side” of chemistry. The themes explored are Jekyll and Hyde, invisibility, chemical weapons, bad companies, and addictions. These are followed by five chapters on the “bright side,” whose themes are inventors, forensics, chemistry classrooms, good researchers, and drug discovery. Each chapter begins with an analysis of the chemistry in the theme and then summarizes a number of movies dealing with the theme, including one that is chosen as the “archetype.” The movies (over 100 with plot descriptions, another 50 or so dealt with more briefly) range in age from *The Invisible Thief* of 1909 to *United 93*, a 2006 reconstruction of the story of the hijacked plane brought down by its passengers on September 11, 2001.

The book is a fine historical survey of the movie industry’s use of chemistry and chemists; there are indices not only of movie titles, but also of actors, directors, screenwriters, and “special chemical effects.” But the authors have aimed at much more than this. There is real chemistry in every chapter, in some cases quite a lot. The

discussion of invisibility-producing concoctions starts with the imaginary ingredient “monocaine” from 1933’s *The Invisible Man*, moves to a discussion of –caine as a suffix signifying a local anesthetic, and from there to a detailed discussion of cocaine including its chemistry, its production, and its addictive properties. The “bad companies” chapter discusses hexavalent chromium (*Erin Brockovich*, 2000) and methyl isocyanate (*Bhopal Express*, 2001) as well as DDT and the book *Silent Spring*. In the “bright side” chapter on inventors there is material on polymerization reactions of various types (*The Man in the White Suit*, 1951; *The Absent-Minded Professor*, 1961, and its remake, *Flubber*, 1997). There is also mention of a very brief clip from 1897 showing *Mr. Edison at Work in his Chemical Laboratory*. The chapter on forensics discusses possible structures for the imaginary toxins and other reagents in its movies, but also includes factual material on the limits of detection of substances. Biographical films on real chemists including *Dr. Ehrlich’s Magic Bullet* (1940), *Madame Curie* (1943), and *Edison, the Man* (1940) are included in the “bright side” chapters.

The authors designed this book to be a resource for high school and college chemistry teachers. There is an appendix, “How to Use This Material in the Classroom;” the “References” section includes hundreds of books and research papers. But the book is also just plain fun, and a worthwhile read for anyone interested in movies, how chemists are perceived by the general public, or the broader area of science and society.

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