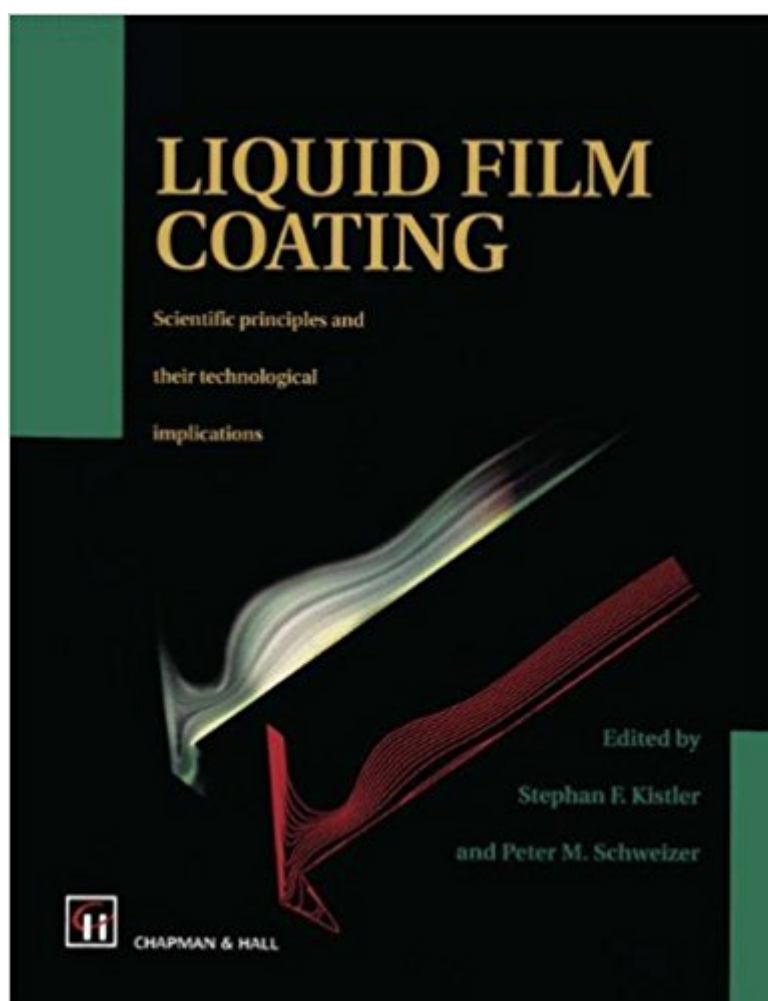


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Liquid Film Coating: Scientific Principles And Their Technological Implications



Synopsis

In spite of all the activity in coating process wide range of available methods or to invent a research, there is no preceding comprehensive new one. Then, of course, the details of the text that summarizes results obtained in various coating equipment must be specified and designed, places around the world and published in different and feasibility of the process selected must be technical journals. In particular, there is no single demonstrated for a desired range of operating text that systematically interprets all the physical conditions. For an existing product, on the other mechanisms that control coating processes, and hand, the most pressing issues are often to that explains implications of scientific principles expand the range of successful operation, for on industrial coating applications. This is not to instance to higher coating speeds, thinner wet say that no books or reviews on coating technology layers, or more layers coated simultaneously; to have been written in the past. However, they all eliminate coating imperfections or defects that focus on either coating equipment (Higgins 1965; degrade product quality; and to increase the Booth 1970; Weiss 1977; Satas 1984); on just a yield, or the fraction of salable material from a few particular coating methods (Middleman 1977; entire lot coated. Coating engineers, together Ruschak 1985); or on particular aspects of coating with formulation chemists, also respond to technology such as numerical methods (Kistler never-ending quests to improve the performance and Scriven 1983), process control (Frost and of the final products which, in some instances in Guttoff 1991), or wettability (Blake 1984; Berg very subtle ways and in others to a significant 1993). The recent volumes edited by Cohen and extent, depend on careful control of the micro-Guttoff (1992) and Benkreira (1993) emerged from structure or surface properties imparted on the short courses on coating technology. They cover coated layers by the coating flow process upstream.

Book Information

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Customer Reviews

This is an excellent text for anyone who wants to take a deep dive into the fluid mechanics and mechanical technologies that govern modern coating processes. The text begins with rigorous definitions of fluid flow (Navier-Stokes, Cauchy Momentum, etc) and gradually relates the mathematics to the coating processes as a whole as the book goes on. The math is pretty intense in the beginning with an abundance of vector and tensor calculus. Without some level of familiarity with these concepts, the reader won't get the most out of this text. When deriving the process models later in the book, the authors do a good job of pointing out the weaknesses of each model and the caution that must be used when applying them. The book does a very nice job of relating critical operating conditions with dimensionless parameters common in fluid mechanics (IE: Reynolds Number) to outline a wide variety of observed behaviors in a steady-state coating process. There are only a few things that I dislike about the book. One is the lack of diagrams in some of the more application-based sections, which makes following the line by line derivations for the coating model somewhat difficult. The notation is not always present in the section where the proofs are derived but it is usually located at the end of the section or chapter. The technologies section is nowadays a bit obsolete with some of the listed technologies only in niche use now. Still, a nice overview is provided of each technology the book examines. As a whole the text is a must-have for anyone who wants a deep understanding of the liquid-based phenomena of the coating process. Scientists and Engineers within the industry would benefit tremendously from even reviewing only a few sections.

Only the chapter on design is more relevant for me now. But overall a very useful book for coating people.

Most of the books in the field are out of print (Coating Equipment and Processes [Book](#) and [Coating and laminating machines: A guide to the design, selection, and usage of coating and laminating machines](#) are two of the classics but they are very technological. [Modern Coating and Drying Technology \(Advances in Interfacial Engineering Series\)](#) is more scientific than the earlier works, but this book really reviews the science as well as

the technology. The chapter on rheology is more geared to paints than continuous web coating and a few of the chapters are nearly obsolete (e.g., slide coating has become a niche technology with the demise of silver halide photography), but it is unlikely that this book will ever be equalled much less surpassed. If you want to understand coating, this book is a must.

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