

Multilayer Thin Films

Sequential Assembly of Nanocomposite Materials

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Gero Decher, Joseph B. Schlenoff

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Foreword

Over the last ten years, scientists from varying backgrounds have rallied around a versatile new method for the synthesis of thin films. Because the layer-by-layer assembly method provides opportunities for creative design and application of function-specific films, the field has experienced an initial period of exponential growth. This book, the first on the topic, contains many insightful contributions from leaders in the field that will enable novices and experts to understand the promises and premises of multilayers.

Readers will instantly identify with a particular aspect of the technology, whether it is the design and synthesis of new polymeric or nanoparticulate building blocks, understanding the polymer physical chemistry of multilayers, or characterizing their optical, electrical or biological activities. The reasons for the intense interest in the field are also clearly evident: multilayers bridge the gap between monolayers and spun-on or dip-coated films, and they provide many of the aspects of control found in classical Langmuir-Blodgett (LB) films, yet multilayers are more versatile, in many respects, and easier to create.

This book is an essential and welcome addition to the literature on thin films. Readers with interests in self-assembled systems, supramolecular chemistry, nanocomposites or polymers will find themselves fascinated by the diversity of topics herein. The message that multilayers are making significant inroads into numerous aspects of chemistry, physics and biology is made clear. The editors and authors are to be commended for creating a comprehensive yet readable volume.

Jean-Marie LEHN

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