

# Surface Wetting



Kock-Yee Law • Hong Zhao

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Characterization, Contact Angle,  
and Fundamentals

 Springer

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# Preface

Surface science involves studies of properties and characteristics of solid surfaces and their interactions with liquids. It is a multidiscipline field with great academic interests and tremendous applications in the industry. Unfortunately, the field of surface has been full of controversies and misconceptions. The Young's equation is widely credited as an initiator of surface research. However, it is also a source for continuous arguments and debates. I and Hong Zhao stumbled into this field seriously about 8 years ago with the objectives of understanding how inks adhere on and release from different printing surfaces during the printing process. It was our hope that fundamental understandings of various ink–surface interactions would not only lead to improvement in the printing process but also enable better ink and surface material designs. However, we found the literature messy and not very helpful. Our literature study yielded limited guidance and the messages obtained at times are confusing. There was no standardized measurement protocol. We often found that definitions were unclear and terminologies were created arbitrarily. In our lab, the structure–property relationship only followed about 50 % of the time and unexpected observation was always classified as exception. This certainly does not sound like a mature science field. We were actually not alone because many academic colleagues also echo these shortfalls. This has been the main motivation and passion for us to write this book. We would like to share some fundamental basic concepts we have learned through this journey. This book is not intended for expert researchers who may view the content as nothing new. Rather, it is intended for senior undergraduate and graduate students in various science and engineering fields as well as researchers like us who have the need to get into the field of surface in their jobs.

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