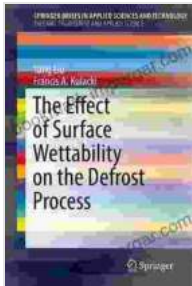


The Wetting Process: Unlocking the Secrets of Liquid-Solid Interactions



Interface Influence on Moisture Transport in Building Components: The Wetting Process (SpringerBriefs in Applied Sciences and Technology) by J. Phillip Ellenberger

★★★★☆ 4.2 out of 5

Language : English
File size : 12089 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Print length : 90 pages





The wetting process is a fundamental phenomenon that occurs when a liquid comes into contact with a solid surface. It is a complex process that involves an interplay of surface tension, gravity, and viscosity. The wetting process has important applications in a wide variety of fields, including materials science, chemical engineering, and fluid dynamics.

The Science of Wetting

The wetting process is governed by the Young-Laplace equation, which states that the contact angle between a liquid and a solid surface is determined by the surface tensions of the liquid and the solid, and the interfacial tension between the two. The contact angle is a measure of the

wettability of the solid surface. A liquid that wets a surface will have a contact angle less than 90 degrees, while a liquid that does not wet a surface will have a contact angle greater than 90 degrees.

The surface tension of a liquid is a measure of the cohesive forces between the molecules of the liquid. The surface tension of a solid is a measure of the adhesive forces between the molecules of the solid. The interfacial tension between two liquids is a measure of the cohesive forces between the molecules of the two liquids.

The wetting process is also affected by the gravity and viscosity of the liquid. Gravity tends to pull the liquid down, while viscosity tends to resist the flow of the liquid. The relative effects of gravity and viscosity determine the shape of the liquid drop on the solid surface.

Applications of the Wetting Process

The wetting process has important applications in a wide variety of fields. In materials science, the wetting process is used to control the adhesion between two materials. In chemical engineering, the wetting process is used to design and optimize processes that involve the contact between liquids and solids. In fluid dynamics, the wetting process is used to study the flow of liquids over solid surfaces.

Some specific examples of applications of the wetting process include:

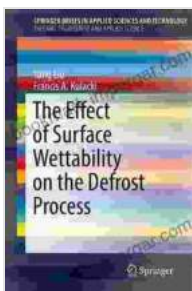
- * The design of coatings that are resistant to wetting
- * The development of new adhesives
- * The optimization of processes for the separation of liquids from solids
- * The study of the flow of blood in blood vessels

The Wetting Process: A Comprehensive Guide

The Wetting Process: A Comprehensive Guide is a new book that provides a comprehensive overview of the science and technology of wetting phenomena. The book covers all aspects of the wetting process, from the fundamental principles to the latest applications. The book is written by a team of experts in the field, and it is a valuable resource for anyone who is interested in learning more about the wetting process.

The book is organized into four parts. The first part provides an to the wetting process and the fundamental principles that govern it. The second part covers the different methods that can be used to measure the wettability of a surface. The third part discusses the applications of the wetting process in a variety of fields. The fourth part provides a look at the future of wetting research.

The Wetting Process: A Comprehensive Guide is a valuable resource for anyone who is interested in learning more about the wetting process. The book is well-written and easy to understand, and it is a comprehensive overview of the field.



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