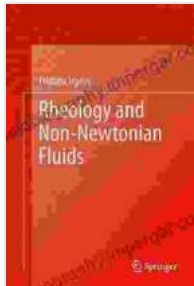


Rheology and Non-Newtonian Fluids: Unveiling the Secrets of Complex Liquids



Rheology and Non-Newtonian Fluids by Fridtjov Irgens

★★★★★ 5 out of 5

Language : English
File size : 10109 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Word Wise : Enabled
Print length : 334 pages



: Exploring the World of Fluids

From the gentle flow of water to the thick, viscous ooze of honey, fluids are ubiquitous in our everyday lives. Their diverse behaviors have captivated scientists for centuries, leading to the development of the field of Rheology – the study of the flow and deformation of matter.

Among the vast array of fluids, Non-Newtonian Fluids stand out as a particularly fascinating class. Unlike their Newtonian counterparts, whose viscosity remains constant, Non-Newtonian Fluids exhibit complex and often counterintuitive behaviors when subjected to external forces.

The Masterful Work of Fridtjov Irgens

In the annals of Rheology, the name Fridtjov Irgens shines brightly. A pioneering scientist and gifted educator, Irgens dedicated his life to

unlocking the secrets of Non-Newtonian Fluids.

Irgens' seminal work, "Rheology and Non-Newtonian Fluids," is a testament to his profound understanding of this complex subject. First published in 1977, this comprehensive treatise has become an indispensable resource for researchers, engineers, and students alike.

Delving into the Intriguing Properties of Non-Newtonian Fluids

Throughout his book, Irgens meticulously explores the diverse properties of Non-Newtonian Fluids. He delves into concepts such as:

- **Viscosity:** The resistance of a fluid to flow, which can vary dramatically in Non-Newtonian Fluids depending on the applied force.
- **Yield Stress:** The minimum force required to initiate flow in a Non-Newtonian Fluid, beyond which it behaves like a solid.
- **Shear Thinning:** The decrease in viscosity with increasing shear rate, a phenomenon common in many Non-Newtonian Fluids.
- **Shear Thickening:** The converse of shear thinning, where viscosity increases with increasing shear rate, observed in certain concentrated suspensions.
- **Thixotropy:** The time-dependent decrease in viscosity after shearing, resulting in a gradual return to a more viscous state.
- **Dilatancy:** The opposite of thixotropy, where viscosity increases over time after shearing, leading to a dilating effect.

Practical Applications of Non-Newtonian Fluids

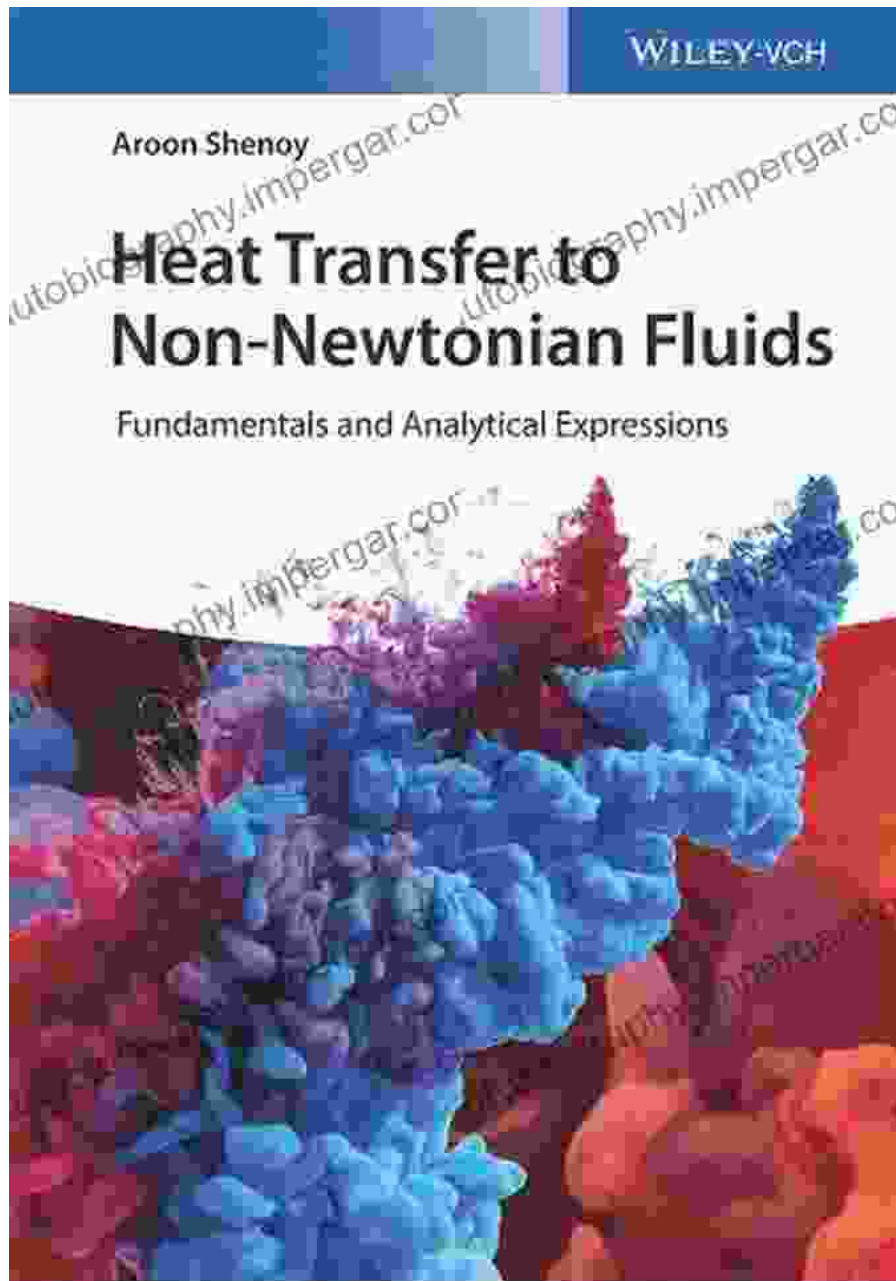
Irgens' work not only provides a deep theoretical understanding of Non-Newtonian Fluids but also highlights their practical significance. These fluids find applications in a wide range of industries, including:

- **Food Industry:** Control of texture and flow behavior in products such as ketchup, mayonnaise, and ice cream.
- **Pharmaceutical Industry:** Formulation of drug delivery systems and development of controlled-release medications.
- **Oil and Gas Industry:** Optimization of drilling fluids and enhanced oil recovery techniques.
- **Cosmetics Industry:** Creation of products with desirable spreadability, viscosity, and stability.
- **Construction Industry:** Development of self-leveling concrete and other specialty materials.

: A Legacy of Discovery and Inspiration

Fridtjov Irgens' "Rheology and Non-Newtonian Fluids" remains an enduring masterpiece in the field. It has inspired generations of scientists and engineers to delve deeper into the intricacies of these fascinating substances.

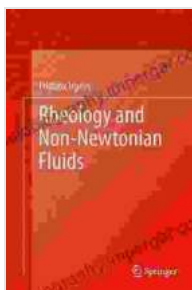
Through his groundbreaking research and comprehensive treatise, Irgens has left an enduring legacy that continues to shape our understanding and utilization of Non-Newtonian Fluids. His work stands as a testament to the power of scientific curiosity and the transformative potential of unlocking the secrets of the natural world.



Free Download Your Copy Today

Embark on your own journey into the captivating world of Rheology and Non-Newtonian Fluids. Free Download your copy of Fridtjov Irgens' seminal work today and dive into the fascinating properties and practical applications of these enigmatic substances.

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