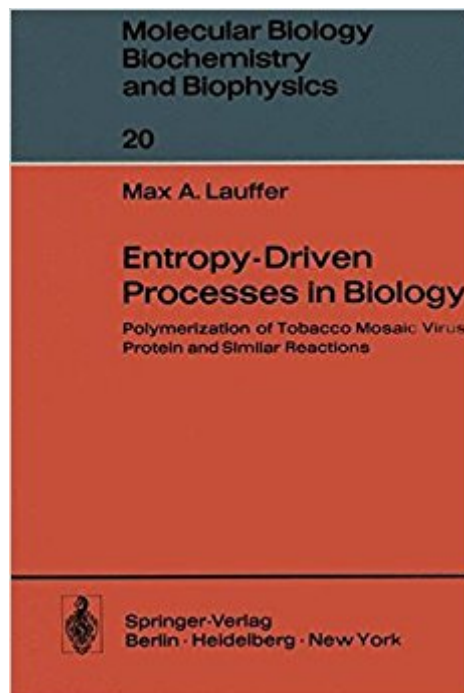




The book was found

Entropy-Driven Processes In Biology: Polymerization Of Tobacco Mosaic Virus Protein And Similar Reactions (Molecular Biology, Biochemistry And Biophysics Molekularbiologie, Biochemie Und Biophysik)



Synopsis

The purpose of this monograph is to bring together under one cover results of research on phenomena drawn from the fields of chemistry, biochemistry, bio- physics, virology, and cell biology. The processes and reactions considered have one important feature in common: they are endothermic and, therefore, entropy- driven. They are, in the main, reversible reactions leading to the formation of large structures, some of which play critical roles in life processes. If one thinks only of the subunits and of the structures they form upon poly- merization, it seems to be a contradiction that such reactions can be driven by an increase in entropy; entropy is a measure of disorder. The increase in entropy must come from some other source, usually from the release of something coincidental to polymerization. That something has been shown to be water for the case of the polymerization of tobacco mosaic virus protein. Because of the remarkable similarity of the other processes to this one, it is a permissible inference that the release of water is the source of the entropy increase and therefore the driving force for all of them. The reactions and processes brought together in this book are still the sub- jects of active research. ;~ny of the detailed interpretations presented here must be regarded as tentative, subject to modification as new information becomes available. However, the main characteristic of each reaction or pro- cess, its endothermic or entropy-driven nature, is well established in all but one or two instances.

Book Information

Series: Molecular Biology, Biochemistry and Biophysics Molekularbiologie, Biochemie und Biophysik (Book 20)

Paperback: 268 pages

Publisher: Springer; Softcover reprint of the original 1st ed. 1975 edition (April 12, 2013)

Language: English

ISBN-10: 3642808719

ISBN-13: 978-3642808715

Product Dimensions: 6.7 x 0.6 x 9.6 inches

Shipping Weight: 2.4 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars 1 customer review

Best Sellers Rank: #706,579 in Books (See Top 100 in Books) #143 in Books > Science & Math > Biological Sciences > Biophysics #215 in Books > Textbooks > Medicine & Health Sciences > Medicine > Basic Sciences > Microbiology #627 in Books > Science & Math > Biological Sciences > Biology > Molecular Biology

Customer Reviews

I am a Ph.D. student in chemistry studying a self-assembling protein. I don't know why I didn't find this book years ago, I may have overlooked it because of the age of the text and concerns that it was too specialized, but it is exactly what I needed all along: a basic, biophysical description of the nature of self-assembly reactions that are entropically driven (as most are: tobacco mosaic virus, actin, sickle cell anemia, etc). The book is mathematical but not at the expense of conceptual content. Suitable for anyone well grounded in basic thermodynamics and physical chemistry. Tobacco mosaic virus is used as a prototype but the principles and techniques are widely applicable and four of the ten chapters discuss other proteins. With the emerging field of self-assembling nanotubes, books like this merit more attention in the future.

[Download to continue reading...](#)

Entropy-Driven Processes in Biology: Polymerization of Tobacco Mosaic Virus Protein and Similar Reactions (Molecular Biology, Biochemistry and Biophysics Molekularbiologie, Biochemie und Biophysik) Ideal Protein Diet Cookbook: Your Ideal Protein Nutrition Plan for Perfect Fitness and Wellness (Ideal Protein Diet, High Protein Diet, Perfect Protein Diet, Lose Weight, Protein Diet Plan) DIY Protein Bars: 30 Delicious and Healthy DIY Protein Bars (diy protein bars, protein bars, high protein snacks) Quantitative Understanding of Biosystems: An Introduction to Biophysics (Foundations of Biochemistry and Biophysics) Introduction to Experimental Biophysics, Second Edition: Biological Methods for Physical Scientists (Foundations of Biochemistry and Biophysics) Ace Biochemistry!: The EASY Guide to Ace Biochemistry: (Biochemistry Study Guide, Biochemistry Review) Ideal Protein Cookbook - The Ultimate Guide in Protein for Fitness Health and Wellness: The Ultimate Guide in Protein for Fitness Health and Wellness Methods in Molecular Biophysics: Structure, Dynamics, Function for Biology and Medicine Entropy - God's Dice Game: The book describes the historical evolution of the understanding of entropy, alongside biographies of the scientists who ... communication theory, economy, and sociology Computational Approaches to Protein Dynamics: From Quantum to Coarse-Grained Methods (Series in Computational Biophysics) Biomolecular Thermodynamics: From Theory to Application (Foundations of Biochemistry and Biophysics) The Virus and the Vaccine: The True Story of a Cancer-Causing Monkey Virus, Contaminated Polio Vaccine, and the Millions of Americans Exposed Virus Infections of Rodents and Lagomorphs: Virus Infections of Vertebrates Series, 1e (Machine Intelligence and Pattern Recognition) Virus Infections of Birds: Virus Infections of Vertebrates Series, 1e Virus Infections of Ruminants (Virus Infections of Vertebrates, 3) Molecular Biology and Pathogenesis of

Peste des Petits Ruminants Virus (SpringerBriefs in Animal Sciences) Teaching Motor Skills to Children With Cerebral Palsy And Similar Movement Disorders: A Guide for Parents And Professionals Molecular Biology (WCB Cell & Molecular Biology) Current Topics in Computational Molecular Biology (Computational Molecular Biology) Nano-Optics for Enhancing Light-Matter Interactions on a Molecular Scale: Plasmonics, Photonic Materials and Sub-Wavelength Resolution (NATO Science ... Security Series B: Physics and Biophysics)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)