The Physics of Living Processes

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Author: Thomas Andrew Waigh / Category: Science / Total

Pages: 624 pages

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Summary: Free the physics of living processes pdf download this full-colour undergraduate textbook based on a two semester course presents the fundamentals of biological physics introducing essential modern topics that include cells polymers polyelectrolytes membranes liquid crystals phase transitions self-assembly photonics fluid mechanics motility chemical kinetics enzyme kinetics systems biology nerves physiology the senses and the brain the comprehensive coverage featuring in-depth explanations of recent rapid developments demonstrates this to be one of the most diverse of modern scientific disciplines the physics of living processes a mesoscopic approach is comprised of five principal sections building blocks soft condensed matter techniques in biology experimental techniques systems biology spikes brains and the senses the unique focus is predominantly on the mesoscale structures on length scales between those of atoms and the macroscopic behaviour of whole organisms the connections between molecules and their emergent biological phenomena provide a novel integrated perspective on biological physics making this an important text across a variety of scientific disciplines including biophysics physics physical chemistry chemical engineering and bioengineering an extensive set of worked tutorial questions are included which will equip the reader with a range of new physical tools to approach problems in the life sciences from medicine pharmaceutical science and agriculture

Pusblisher: John Wiley Sons on 2014-08-08 / **ISBN**: 9781118698273

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