


Interdisciplinary: Physics of Soft Matter

1. Understand the different types of soft matter systems and their properties.
2. Analyze the forces, energies, and time scales in condensed matter and their impact on the behavior of gases, liquids, and solids.
3. Evaluate the behavior of macromolecules, including DNA, in different environments and their biological significance.
4. Apply the concepts of random walks, friction, and diffusion to explain Brownian motion and diffusion processes in soft matter systems.
5. Evaluate the forces between colloidal particles and predict their behavior in different environments.
6. Analyze self-assembly processes in soft condensed matter and their applications in complex systems.
7. Understand the role of soft matter in biological systems, including nucleic acids, proteins, and biological membranes.
8. Evaluate the mechanisms of enzymes and molecular machines in cells and their kinetics in cellular processes.

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