



سمینار هفتگی ماده چگال نرم

Microorganisms motility in distinct micro environment

چکیده

Motility of the microorganisms is a characteristic that can provide several advantages for the cells. Investigating various microorganisms' motion mechanisms showed that their movements let them live and survive in different microenvironment conditions. Prokaryotes and Eukaryotes are studied as a free-swimming microorganism. Microbial parasites, known as eukaryotes, thrive in most living beings. Trypanosomes are the most studied parasite models. The African trypanosomes, Trypanosome brucei, are uniflagellate parasites with a wide range of hosts. They are transmitted by testes fly, infect animals and human, and cause deadly diseases. It has been observed that in each stage of their cycle, trypanosomes adjust with noticeable changes in morphology and motile behavior. Further, geometric parameters and flow properties of their living environment influence their motion patterns. However, their motion mechanism is not well-understood quantitatively in detail. The aim of these micro-swimmers studies is to characterize their motion behavior in different conditions. Mimicking their natural microenvironment, simulating and measuring the swimming behavior to explain single-cell and collective motion patterns.

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