

ABSTRACT

MOLECULAR MACHINES

Molecular machines, when compared with applicable technologies, convert more energy by using cheap raw materials and synthesizes a greater amount of organic compounds; and they do this by not destroying the environment. Nature offers systems free of charge which are waiting to be used with relative techniques and technology. In today's world, when speaking of molecular machines, one can not say that everything is resolved; there is still much to be promised for the future but the development is significant. Mostly based on biochemistry, molecular machine systems are also a part of nanotechnology thus physics.

When something has moving parts performing work and if it is in nanoscale by means of size, then it is convenient to call it a molecular machine or molecular machine system. Designing and analyzing such structures are the keys for further progress; and can be said that the most complex systems yet are the proteins. Molecular machines can be examined under two broad categories such that biological(natural) molecular machines and artificial(synthesized) molecular machines.

In this presentation, I will give brief information about challenges of protein based molecular machines referring to the complex structure of proteins and then will focus on DNA based molecular machines and advantages of using DNA for such applications.