International Journal of Emerging Technology and Innovative Engineering
Volume 5, Issue 2, February 2019 (ISSN: 2394 6598)

79

A SURVEY ON RECENT TRENDS IN DIGITAL DATA STORAGE ON DNA

S. SathyaBama
Assistant Professor, Sri Krishna College of Technology, Coimbatore

ABSTRACT

DNA (deoxyribonueclicacid) which is said to be the blue print of human life, is recognized as a powerful storage medium for storing digital information. The binary information of the digital data can be mapped to the four building nucleotides adenine, guanine, cytosine, and thymine . A very large data can be stored within a small of part of DNA.The storage is made by the process of encoding the digital information to the nucleotides. The encoded information is synthesized to get a sequence. The sequence obtained is further decoded to retrieve the data.Using the DNA as a storage medium has several advantages such as tremendously reducing the storage space and preserving the data for very long time. At the same time it has a constraint that synthesizing a DNA is a very expensive process . This survey elaborates recent new trends adopted by several scientists of different institutes to store and retrieve data on DNA Strand.

KEYWORDS

DNA Sequencing, Synthesizer, Digital data

INTRODUCTION

Earlier days we used several traditional storage mediums such as papers, files etc,. These traditional media required very large storage space and maintenance cost.

Figure.1 DNA Strand Later we moved on to digital storage mediums such as zip drives, floppies, and compact disks and so on. A 31/2 floppy disk can store 1.44 mega bytes of data, but the smart phone era totally changed this situation by increasing the storage by 44,000 times .[9]-[14] Now we can store the contents of 150 smart phones that are 10,000 giga bytes of data within an extremely smaller mediumof storage DNA.

In the living organisms the nucleotides are encoded upon the cells for their behaviours.

The same way digital information is encoded and mapped onto the DNA code s for storing the information. T he stored information can later