

# Permutation Group in DNA Based Storage Technology

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## ABSTRACT

The rapid pace of technology that is accompanied by exponential data growth poses challenges in the provision of data storage devices that can accommodate a huge amount of data. One of the media being studied by many researchers for use as a data storage medium is DNA. The advantage use of DNA as a data storage medium is its ability to store very large data and duration to store data that can last hundreds of years. From the mathematical point of view, DNA can be seen as  $\{A, C, G, T\}$ . Among the obstacles in DNA-based storage is to avoid homopolymers, ie the appearance of the same letters (compounds) sequentially repeatedly. In this study we examine the use of permutation concept to avoid homopolymer.

Kata Kunci: *Permutation group, DNA, homopolymer*