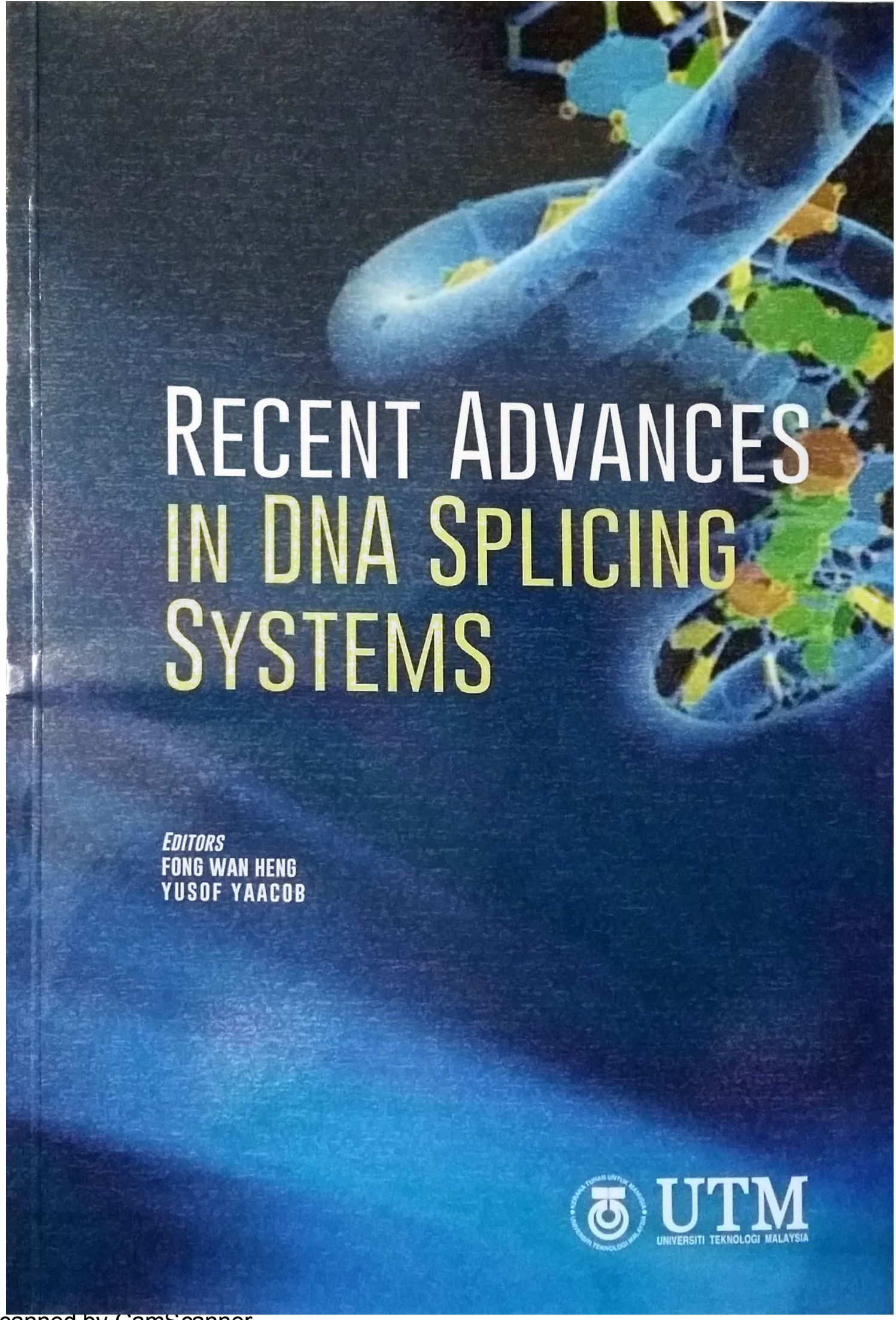

RECENT ADVANCES IN DNA SPLICING SYSTEMS

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SECOND ORDER LIMIT LANGUAGE: AN INTRODUCTION

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4.1 INTRODUCTION

The uniqueness of every living organism is dependent on deoxyribonucleic acid (DNA). The known functions of DNA are coding for proteins synthesis and also self-replication that ensure the hereditary of parent cells to offspring cells that shows the importance of DNA in every living creature. In term of biology, DNA is a polymer which is strung together from monomers called deoxyribonucleotides as illustrated in Figure 4.1. It is made up of three components which are sugar, phosphate group and nitrogeneous base [1]. Referring to Figure 4.2, deoxyribose has five carbon atoms where the phosphate group is attached at the 5′ carbon, the base is attached to the 3′ carbon and for sugar structure, there is a hydroxyl group (OH) that is attached to the 1′ carbon [2]. The two single strands in the double-stranded DNA (dsDNA) molecule have opposite directions. The nucleotide at the 5′ end of one strand is bonded to the nucleotide at the 3′ end of the other strand. It is a standard way to present a dsDNA molecule from the upper strand left to the right in the 5′-3′ direction. In reality, the representation of a dsDNA molecule as two linear strands bound together by Watson-Crick complimentarity is already a simplification since in