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# (12) United States Patent

#### Ju et al.

#### (54) MASSIVE PARALLEL METHOD FOR DECODING DNA AND RNA

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#### (57) ABSTRACT

This invention provides methods for attaching a nucleic acid to a solid surface and for sequencing nucleic acid by detecting the identity of each nucleotide analogue after the nucleotide analogue is incorporated into a growing strand of DNA in a polymerase reaction. The invention also provides nucleotide analogues which comprise unique labels attached to the nucleotide analogue through a cleavable linker, and a cleavable chemical group to cap the —OH group at the 3'-position of the deoxyribose.

#### 17 Claims, 28 Drawing Sheets



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