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— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

[Continued on next page]

(54) **Title**: PCR-BASED METHOD OF SYNTHESIZING A NUCLEIC ACID MOLECULE

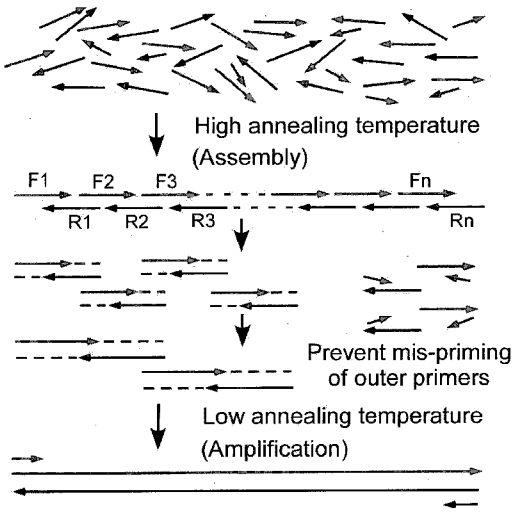


FIGURE 1

(57) **Abstract**: There is provided a method of synthesizing a nucleic acid molecule and in one aspect, the method comprises assembling a full length template nucleic acid molecule by PCR in a PCR reaction mixture comprising a set of assembly oligonucleotides having a first average melting temperature and a set of outer amplification primers having a second average melting temperature that is lower than the first average melting temperature, wherein said assembling comprises subjecting the PCR reaction mixture to a first annealing temperature that is higher than the second average melting temperature and; amplifying the full length template nucleic acid molecule by PCR in the PCR reaction mixture wherein said amplifying comprises subjecting the PCR reaction mixture to a second annealing temperature that permits annealing of the outer amplification primers to the full length template nucleic acid molecule.

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