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(57) Abstract :

The present invention relates to a low cost microfluidic device for DNA/RNA isolation, purification and amplification using Chip based PCT/RT-PCR for the development of optical, electrochemical, magnetic and other biosensing applications. It relates to isolation and purification of DNA/RNA inside microfluidic device using in-channel anodized alumina nanopores or any other nanoporous membrane and amplification of DNA on low voltage resistive heater based spatial PCR Chip where the three temperature zones have been generated and placed as the vertices of an equilateral triangle. This portable DNA isolation and amplification device can be integrated to any type of Biosensors and even it can act as point of care device for the detection of pathogens including biological warfare agents or any other genetic diseases which can be detected through PCR.



No. of Pages : 23 No. of Claims : 19

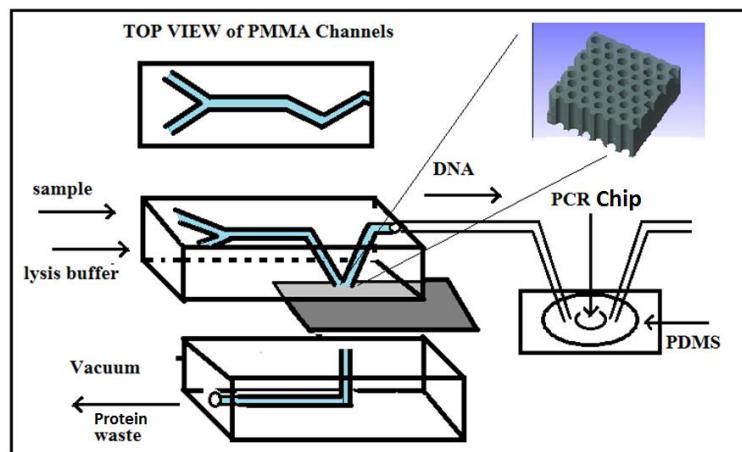


Figure 1

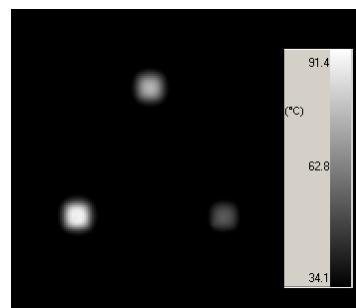


Figure 2

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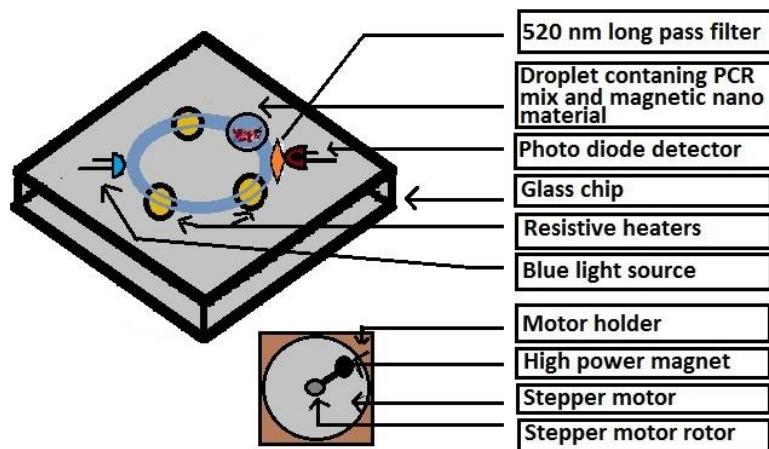


Figure 3

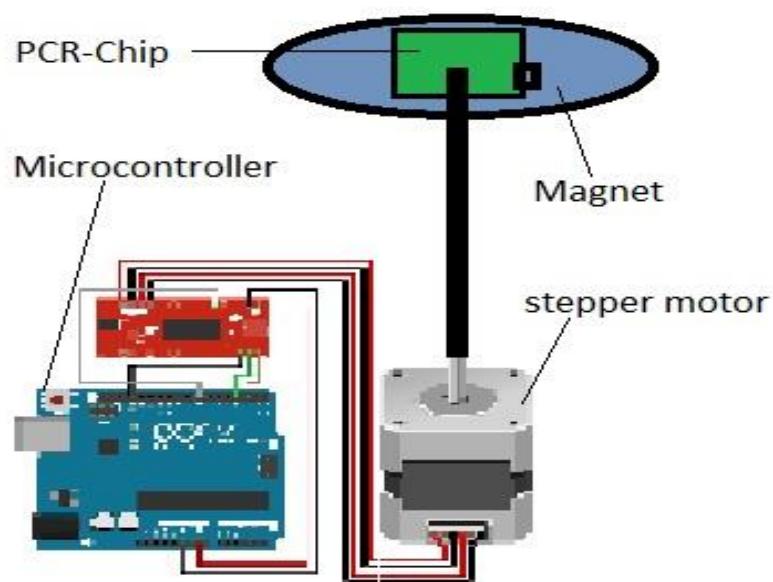


Figure 4

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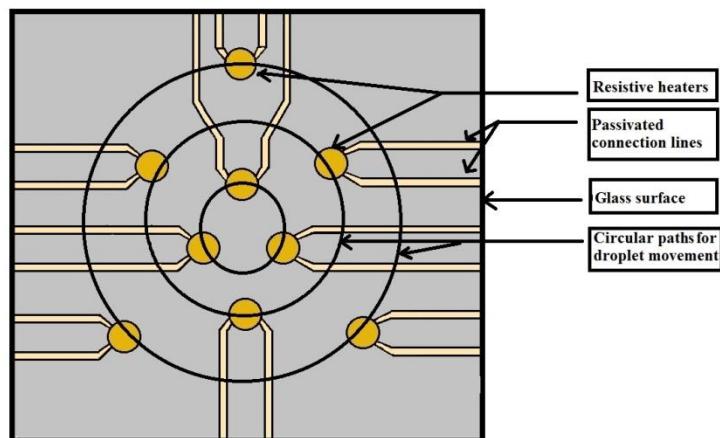


Figure 5

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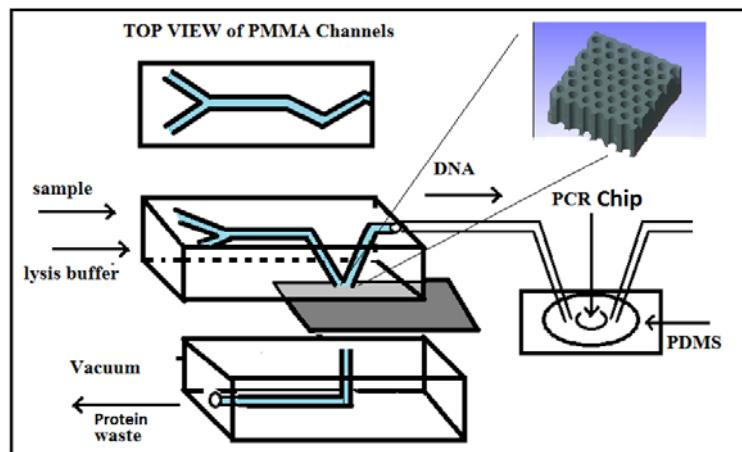


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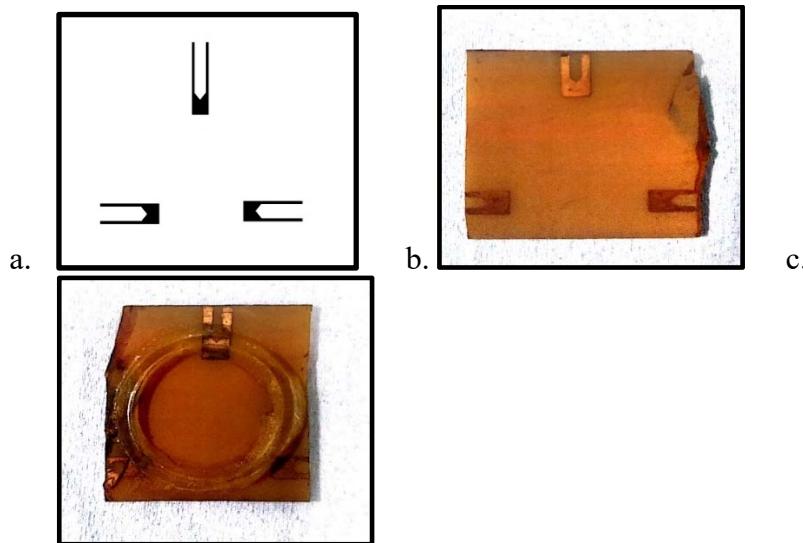


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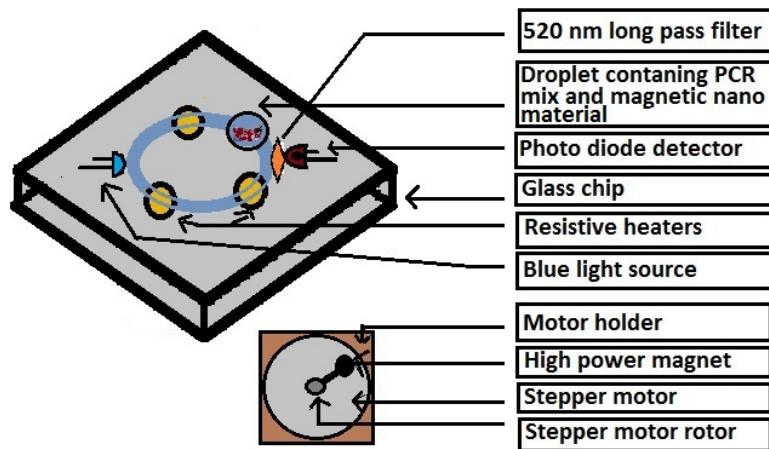


Figure 3

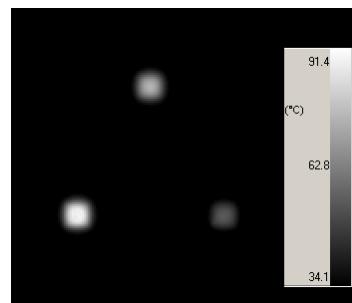


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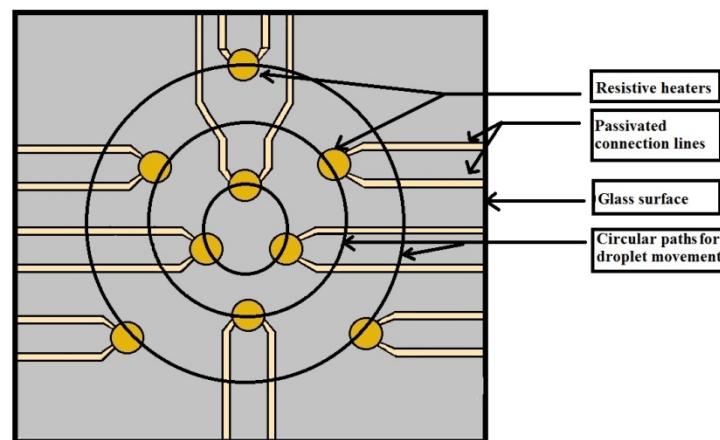


Figure 5

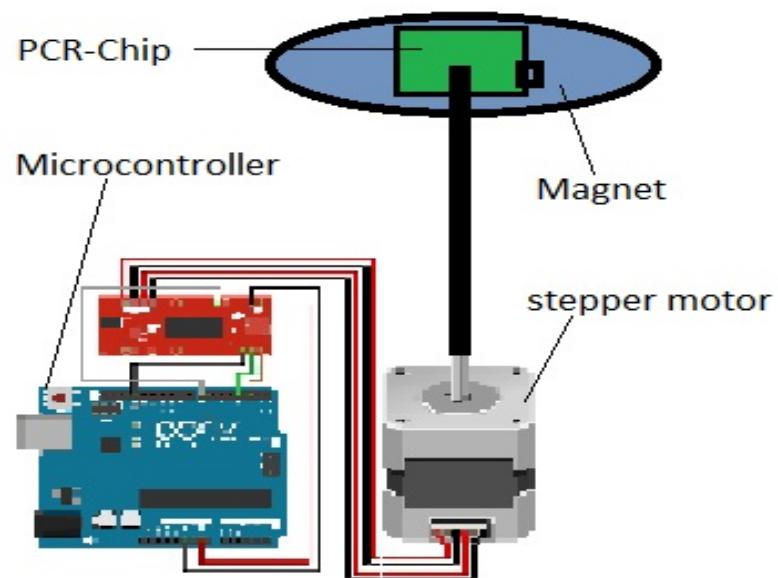


Figure 6

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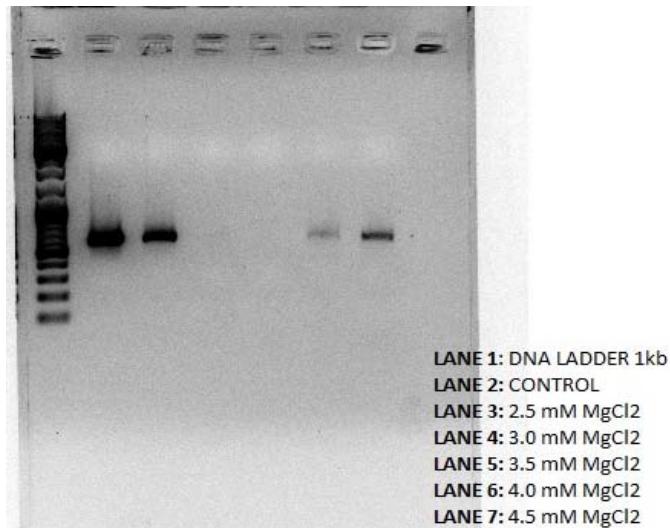


Figure 7

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