

(54) Title of the invention : A LOW COST MICROFLUIDIC DEVICE FOR DNA/RNA ISOLATION, PURIFICATION AND AMPLIFICATION USING CHIP BASED PCR/ RT- PCR FOR BIOSENSING APPLICATIONS

(51) International classification :B01L2200/027
 (31) Priority Document No :NA
 (32) Priority Date :NA
 (33) Name of priority country :NA
 (86) International Application No :NA
 Filing Date :NA
 (87) International Publication No : NA
 (61) Patent of Addition to Application Number :NA
 Filing Date :NA
 (62) Divisional to Application Number :NA
 Filing Date :NA

(71)Name of Applicant :

1)JAYDEEP BHATTACHARYA

Address of Applicant :11, OLD TRANSIT HOUSE,
 DAKSHINAPURAM, JAWAHARLAL NEHRU UNIVERSITY,
 NEW DELHI-110067, INDIA Delhi India

(72)Name of Inventor :

1)JAYDEEP BHATTACHARYA

2)RAJKAMAL BHARTI

3)ASHWATHI ASHA MADHAVAN

4)RANJITA GHOSH MOULICK

(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

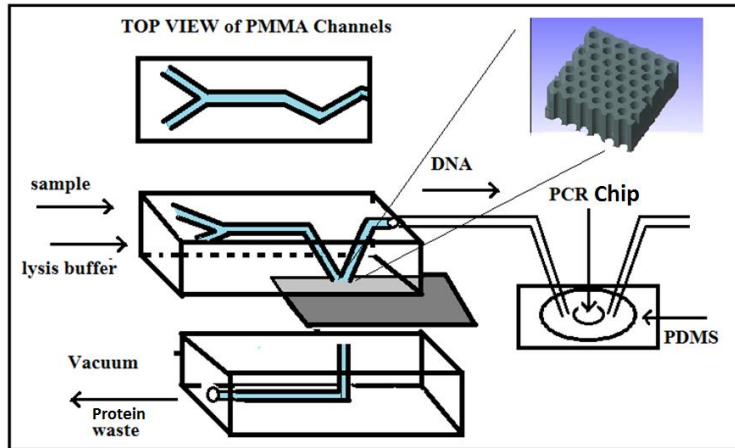


Figure 1

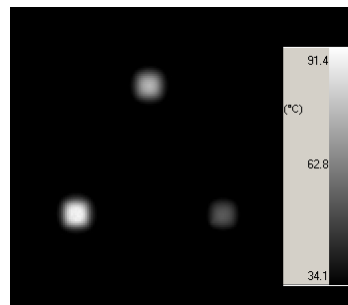


Figure 2

Anushri Gupta

(DR. ANUSHRI GUPTA)
OF ANUSHRI GUPTA & ASSOCIATES
ATTORNEY FOR THE APPLICANT[S]

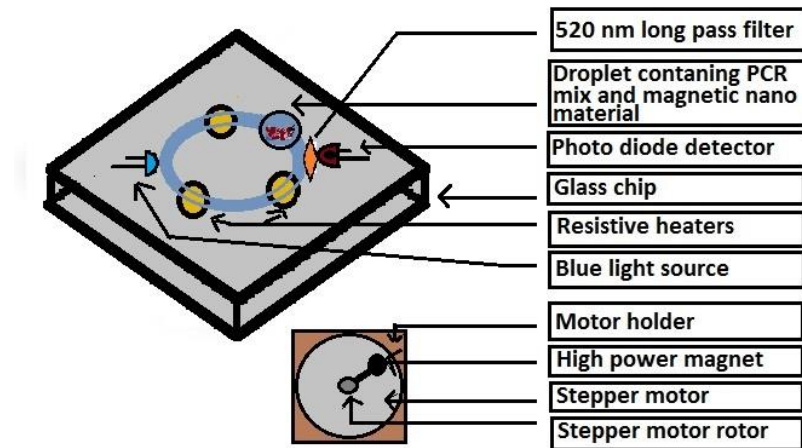


Figure 3

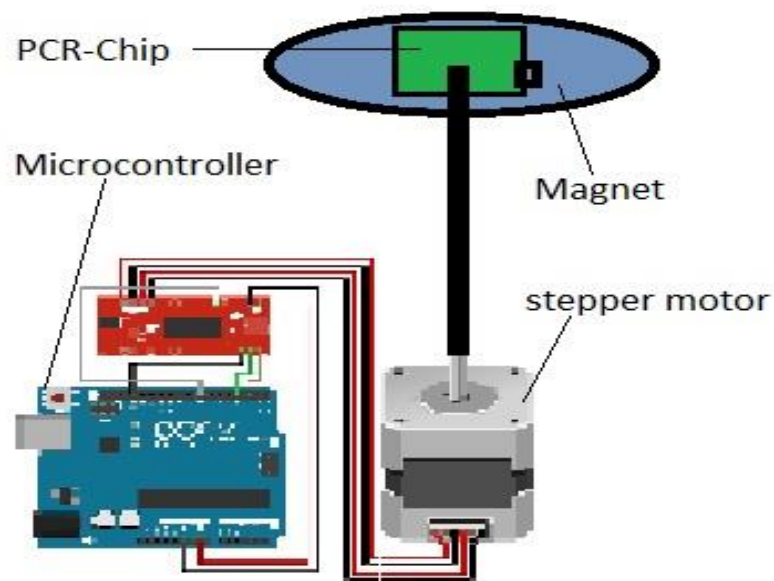


Figure 4

Anushri Gupta

(DR. ANUSHRI GUPTA)
OF ANUSHRI GUPTA & ASSOCIATES
ATTORNEY FOR THE APPLICANT[S]

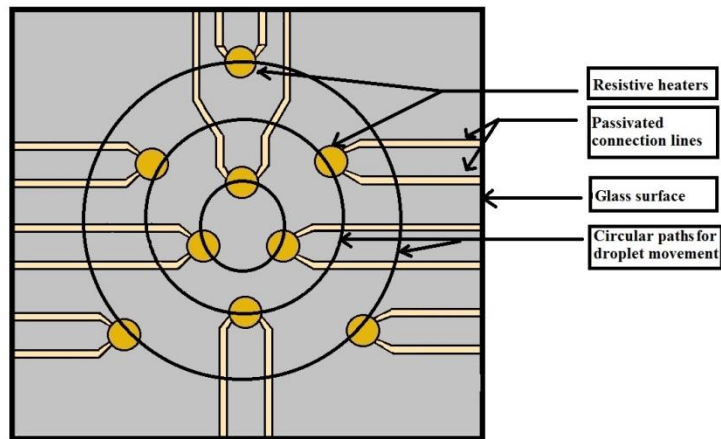


Figure 5

Anushri Gupta

(DR. ANUSHRI GUPTA)
OF ANUSHRI GUPTA & ASSOCIATES
ATTORNEY FOR THE APPLICANT[S]

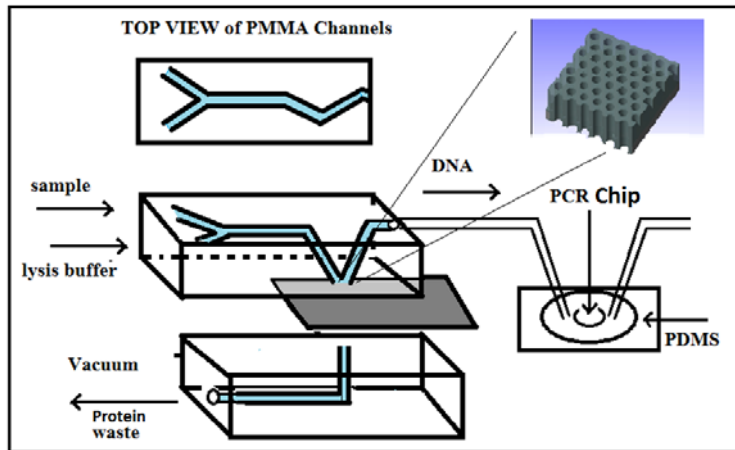


Figure 1

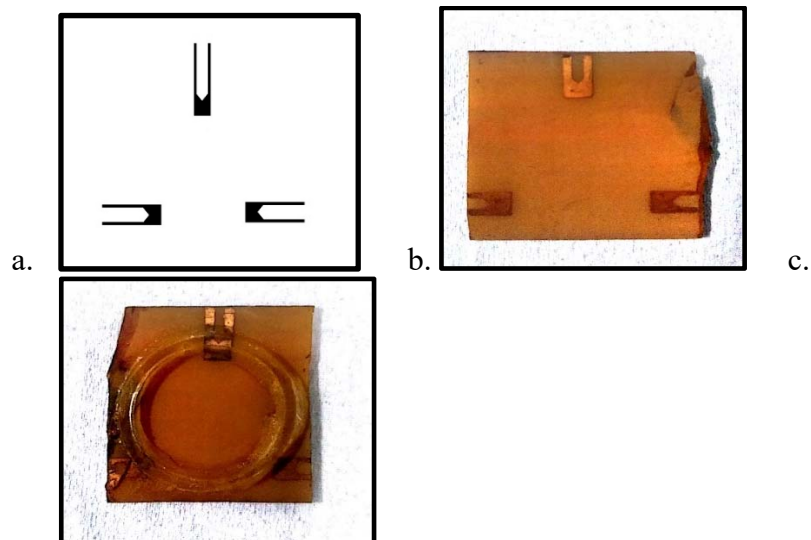


Figure 2

Anushri Gupta

(DR. ANUSHRI GUPTA)
OF ANUSHRI GUPTA & ASSOCIATES
ATTORNEY FOR THE APPLICANT[S]

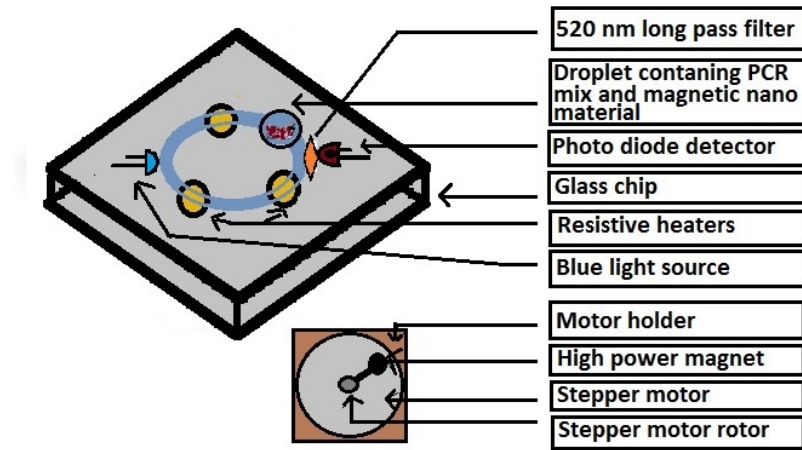


Figure 3

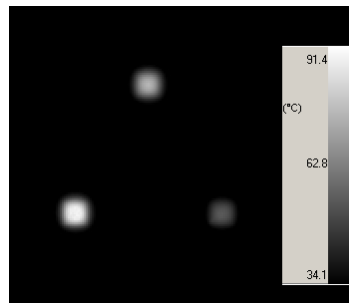


Figure 4

Anushri Gupta

(DR. ANUSHRI GUPTA)
OF ANUSHRI GUPTA & ASSOCIATES
ATTORNEY FOR THE APPLICANT[S]

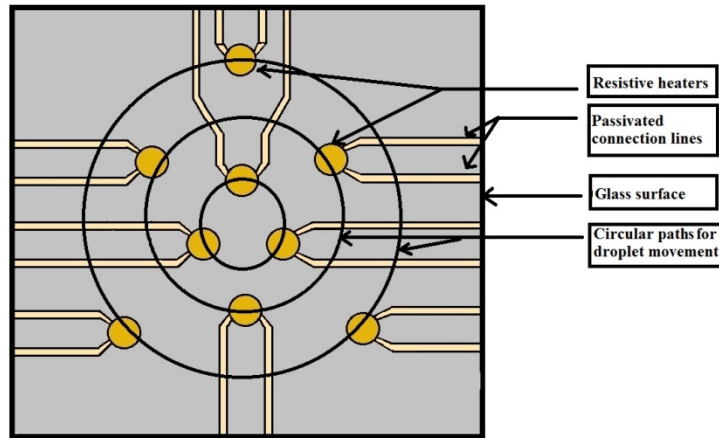


Figure 5

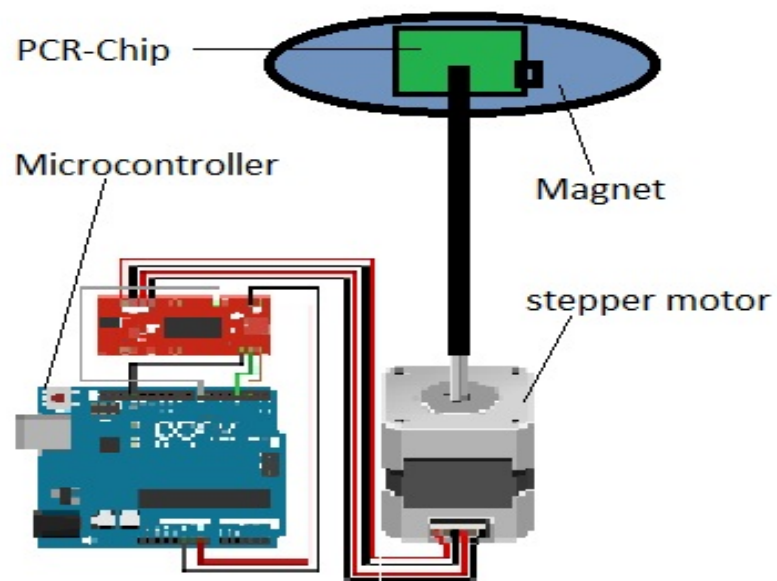


Figure 6

Anushri Gupta

(DR. ANUSHRI GUPTA)
OF ANUSHRI GUPTA & ASSOCIATES
ATTORNEY FOR THE APPLICANT[S]

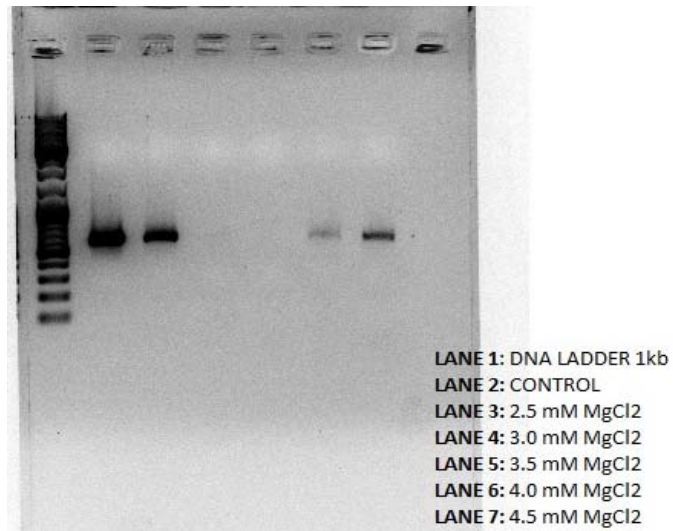


Figure 7

Anushri Gupta

(DR. ANUSHRI GUPTA)
OF ANUSHRI GUPTA & ASSOCIATES
ATTORNEY FOR THE APPLICANT[S]