CLAIMS

1. A method for droplet processing, comprising:

a. providing an electrowetting array comprising a plurality of electrodes and a single plate;

b. dispensing a droplet adjacent to said single plate of said electrowetting array; and

c. subjecting said droplet to a plurality of reactions, wherein a reaction of the plurality of reactions comprises a chemical reaction, biological reaction, or biochemical reaction within said droplet while said droplet is adjacent to said single plate of said electrowetting array,

d. during the plurality of reactions, detecting a volume of said droplet; and

e. when said volume of said droplet is detected as not within about 20% of a threshold volume range sufficient for the plurality of reactions, combining said droplet with a replenishing droplet to maintain said volume of said droplet within the threshold volume range sufficient for the plurality of reactions, wherein, during said plurality of reactions, at least one replenishing droplet is combined with said droplet.

2. The method of claim 1, wherein a temperature sensor is coupled to a side of said electrowetting array.

3. The method of claim 1, further comprising providing a temperature control element not comprised by said electrowetting array.

4. The method of claim 1, wherein said original volume of said droplet and said threshold volume differ by at most about 10%, optionally wherein said original volume of said droplet and said threshold volume differ by at most about 5%, optionally wherein said original volume of said droplet and said threshold volume differ by at most about 1%, optionally wherein said original volume of said droplet and said threshold volume differ by at most about 0.01%.

5. The method of claim 1, wherein an original volume of said droplet and said threshold volume of said droplet differ by at most about 5% over a time period of at least 10 seconds.

6. The method of claim 1, wherein combining said replenishing droplet with said droplet maintains said volume of said droplet to within 20% of said threshold volume.

7. The method of claim 6, wherein a module dispenses a replenishing droplet when said volume and said threshold volume differ by greater than about 20%.

8. The method of claim 1, further comprising providing one or more humidity sensors adjacent to said electrowetting array.

9. The method of claim 1, wherein detecting said volume of said droplet comprises using one or more sensors to detect a change in said volume of said droplet.

10. The method of claim 1, wherein said chemical reaction, said biological reaction, or said biochemical reaction is preparing a library of nucleic acid molecules for sequencing.

11. The method of claim 1, wherein said replenishing droplet is dispensed,

a. directly onto said droplet; or

b. onto said single plate of said electrowetting array and said electrowetting array is used to merge said droplet with said replenishing droplet.

12. The method of claim 1, further comprising an oil layer disposed on top of the single plate.

13. The method of claim 12, wherein the oil layer is configured to support the dispensed droplet.

14. The method of claim 12, wherein the subjecting said droplet to the plurality of reactions occurs on top of the oil layer.

15. The method of claim 1, wherein said droplet is surrounded by gas.