CLAIMS

1. A disposable PCR device comprising:

a base sheet;

a top sheet having at least one sample collection opening and a transparent portion configured as a result window;

a microfluidic channel comprising a PCR chamber provided between the base sheet and the top sheet, the microfluidic channel configured to be in fluid connection with the at least one sample collection opening, a portion of the microfluidic channel downstream of the PCR chamber being viewable through the result window; and

a dc heater provided between the base sheet and the top sheet such that the discrete heating area of the dc heater is adjacent the PCR chamber, the dc heater comprising: the discrete heating area made of a heat conductive material disposed on a surface that is electrically non-conductive; and at least one conductive trace configured to be connected to a dc voltage source and to heat the discrete heating area to a uniform temperature when connected to the dc voltage source, the at least one conductive trace disposed in an undulating configuration on the surface at least partially around the discrete heating area.

2. The disposable PCR device of claim 2, wherein the base sheet, the top sheet and the microfluidic channel are formed of at least one flexible sheet material.

3. An electric-heating bag configured for storage of a product therein, the electric-heating bag comprising:

a first sheet of flexible material sealed to a second sheet of polymeric material to define a cavity therebetween and forming a border comprising the first sheet of flexible material and the second sheet of flexible material around the cavity; and

a dc heater that comprises a discrete heating area made of a heat conductive material disposed on a surface that is electrically non-conductive; and at least one conductive trace configured to be connected to a dc voltage source and to heat the discrete heating area to a uniform temperature when connected to the dc voltage source, the at least one conductive trace disposed in an undulating configuration on the surface at least partially around the discrete heating area, wherein the discrete heating area is disposed on a portion of the first sheet of flexible material forming a first wall of the cavity, and wherein the at least one conductive trace is disposed in the undulating configuration on the border of the first sheet of flexible material.

4. The electric-heating bag of claim 3, further comprising a closeable opening in fluid communication with the cavity and configured for dispensing the product therethrough.

5. The electric-heating bag of claim 4, wherein the closeable opening is configured to be connectable to a tubing, the electric-heating bag configured to be a blood bag configured for at least one of: collection and storage of blood from a patient, and providing blood or a blood product to a patient.