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(54) Title: CONTROL SYSTEMS AND METHODS FOR BIOLOGICAL APPLICATIONS

(57) Abstract: A thermal cycler is provided. The thermal cycler comprises a tray assembly. The tray assembly comprises a main body made of a first material having a first thermal conductivity. The tray assembly further comprises an adaptor made of a second material having a thermal conductivity that is greater than the thermal conductivity of the first material. The thermal cycler also includes a control block configured to control the temperature of the one or more nucleotide samples. The thermal cycler further includes a thermal cover sized and positioned to at least partially cover the plurality of vessels. The thermal cycler further includes a sample block including one or more depressions configured to receive a plurality of vessels containing one or more nucleotide samples.