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(54) Title: IMAGE DRIVEN QUALITY CONTROL FOR ARRAY BASED PCR

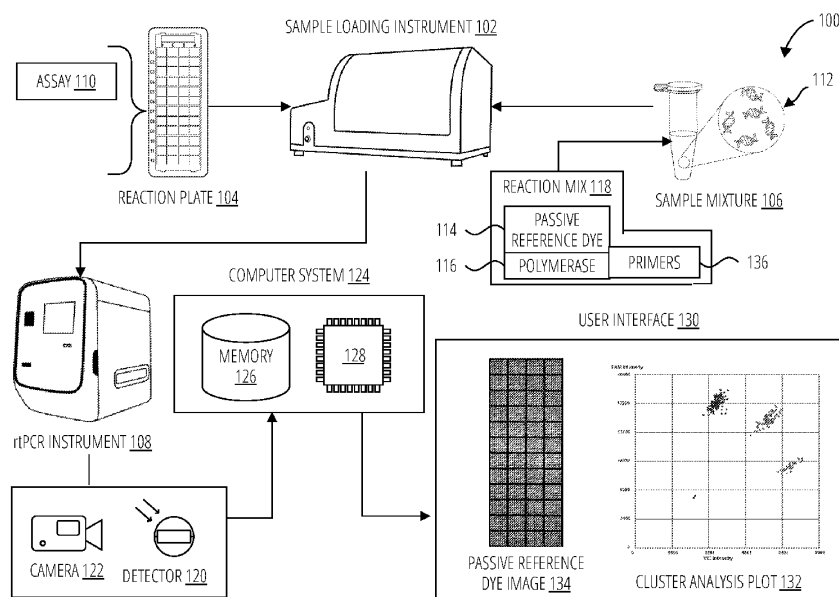


FIG. 1

(57) Abstract: A system and methods are provided for image driven quality control for array based PCR. The system comprises a PCR unit, a reaction array plate, a convolutional neural network (CNN) configured to receive a sequence of images of the reaction array plate in the PCR system, and an output of the CNN coupled to a control for the reaction array plate. The method comprises applying a sequence of images from a plurality of subarrays of the reaction array plate to a plurality of CNNs during operation of the PCR system on the reaction plate array, operating the CNNs to generate failure mode predictions for the reaction plate based on the sequence of images, and coupling an output of the CNNs to one or more of a setting for manufacture of the reaction array plate or to control the PCR system.

[Continued on next page]

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