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- (54) Title: PORTABLE NUCLEIC ACID ANALYSIS SYSTEM AND HIGH-PERFORMANCE MICROFLUIDIC ELECTROACTIVE POLYMER ACTUATORS

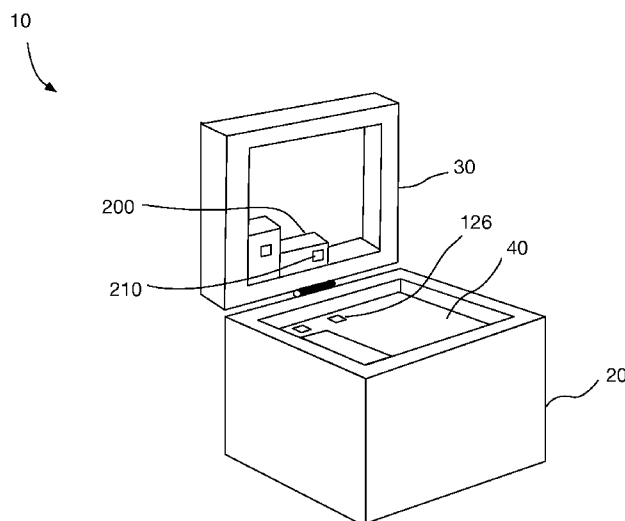


Fig. 1

(57) Abstract: Devices, systems and methods for the parallel detection of a set of distinct nucleic acid sequences use multiple sequence amplification and simultaneous hybridization readout. An automated nucleic acid analysis system comprises in microfluidic connection sample lysis, purification, PCR and detection modules configured to detect in parallel distinct nucleic acid sequences via multiple sequence amplification and simultaneous microarray hybridization readout. High performance microfluidic electroactive polymer (μ EAP) actuators comprising a dead-end fluid chamber in which the floor of the chamber is an electrode covered with an EAP layer of dielectric elastomer are configured for particle sorting.



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