

In one example, a system for separating biological molecules includes a plurality of capillaries configured to separate biological molecules in a sample, each capillary comprising a detection portion configured to pass electromagnetic radiation into the capillary; a capillary mount, the plurality of capillaries coupled to the capillary mount such that the detection portions are fixedly located relative to one another; a plurality of optical fibers corresponding to the plurality of capillaries, each optical fiber comprising a receiving end configured to receive emissions from a respective one of the detection portions; a fiber mount, the optical fibers being coupled to the fiber mount such that the receiving ends of the optical fibers are fixedly located relative to one another; an emission optical system configured to direct emissions from the detection portions into the receiving ends of the optical fibers; an optical detector configured to produce an alignment signal when emissions from at least one of the plurality of capillaries is transmitted through a respective at least one of the optical fibers and onto the optical detector; and a motion stage configured to move to a plurality of locations, one or more of the capillary mount, the fiber mount, or at least a portion of the emission optical system; wherein the motion stage is configured to align the receiving ends of the optical fibers to the detection portions based on values of the alignment signal at the plurality of locations.

In another example, a system for separating biological molecules includes a plurality of capillaries configured to separate biological molecules in a sample, each capillary comprising a detection portion configured to pass electromagnetic radiation into the capillary; a capillary mount, the capillaries coupled to the capillary mount such that the detection portions are fixedly located relative to one another; a radiant source producing a source beam of electromagnetic radiation configured to illuminate the detection portions; a base configured to receive the capillary mount, the base comprising a mirror configured to reflect the source beam and to direct the source beam through the plurality of capillaries.

In another example, a system for separating biological molecules includes a plurality of capillaries configured to separate biological molecules in a sample, each capillary comprising a detection portion configured to pass electromagnetic radiation into the capillary; a radiant source producing a source beam of electromagnetic radiation configured to illuminate the detection portions; wherein the source beam has a linear polarization disposed along a polarization axis; wherein the polarization axis of the source beam within the detection portions is perpendicular to the capillary plane.

In yet another example, a method of separating biological molecules includes providing a plurality of capillaries, each capillary comprising an detection portion, the capillaries coupled to a capillary mount such that detection portions are fixedly located relative to one another; providing a plurality of optical fibers corresponding to respective ones of the plurality of capillaries, each optical fiber comprising a receiving end configured to receive emissions from a respective one of the detection portions, the optical fibers being coupled to a fiber mount such that the receiving ends are fixedly located relative to one another; producing values of an alignment signal from an optical detector by transferring emissions within the detection portion of at least one of the capillaries through a respective at least one of the optical fiber and to the optical detector; moving, one or more times to one or more different locations, the capillary mount or the fiber mount; at each of the one or more locations, producing a respective value of the alignment signal from the optical detector by transferring emissions within the detection portion of the at least one capillary through the at least one optical fiber to the optical detector; aligning the capillaries to the receiving ends of the plurality of optical fibers based on the values of the alignment signals.