COMPOSITIONS, SYSTEMS, AND METHODS FOR DETECTING EVENTS USING TETHERS ANCHORED TO OR ADJACENT TO NANOPORES

ABSTRACT OF THE DISCLOSURE

Compositions, systems, and methods for detecting events are provided. A composition can include a nanopore including a first side, a second side, and an aperture extending through the first and second sides; and a permanent tether including head and tail regions and an elongated body disposed therebetween. The head region can be anchored to or adjacent to the first or second side of the nanopore. The elongated body including a reporter region can be movable within the aperture responsive to a first event occurring adjacent to the first side of the nanopore. For example, the reporter region is translationally movable toward the first side responsive to the first event, then toward the second side, then toward the first side responsive to a second event. The first event can include adding a first nucleotide to a polynucleotide. The second event can include adding a second nucleotide to the polynucleotide.

[FIG. 1K]