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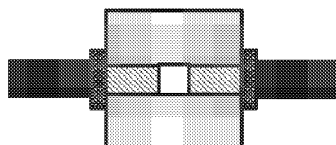
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(54) Title: NUCLEIC ACID SCAFFOLDS AND RELATED DEVICES AND METHODS

FIG. 3D



- Oligo density field
- Attachment oligos
- Nucleic acid scaffold
- Electrode

(57) Abstract: Provided are nucleic acid scaffolds. In some em-
bodiments, the nucleic acid scaffolds comprise a structure having
a fixed or variable resistance operably coupled to site-specifically
metalized nucleic acid regions within the nucleic acid scaffold. The
structure having a fixed or variable resistance comprises an opening
formed by one or more non-metalized nucleic acid regions of the
nucleic acid scaffold, and when in use, conductance between two or
more of the site-specifically metalized nucleic acid regions is con-
ditioned upon a state of the structure having fixed or variable resis-
tance. In some instances, the state of the structure is the presence
or absence of an analyte within the opening, e.g., the presence or
absence of a polymer (e.g., a nucleic acid or protein) translocating
through the opening. Also provided are devices and methods that
employ the nucleic acid scaffolds of the present disclosure, e.g., for
detection and/or analysis of analytes of interest.