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(54) Title: COMPLEMENTARY METAL-OXIDE-SEMICONDUCTOR (CMOS) MULTI-WELL APPARATUS FOR ELECTRICAL CELL ASSESSMENT

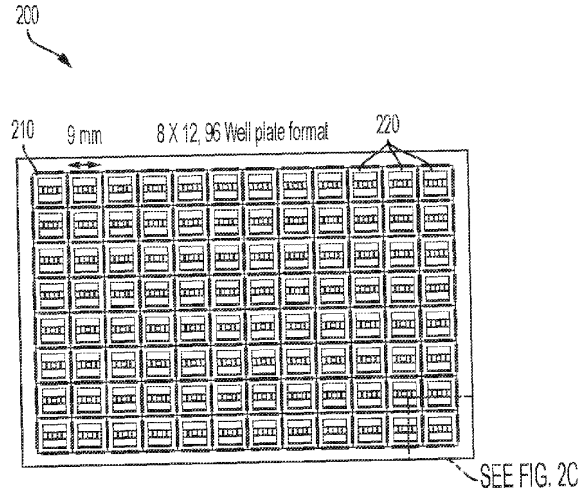


FIG. 2B

(57) Abstract: Disclosed herein are semiconductor devices to provide a CMOS-compatible, wafer-scale, multi-well platform that can be used for biomedical or other applications, and methods to operate the same. In some embodiments, circuitry is provided underneath a multiple-well array to electrically interface with electrodes in the wells. To interface with electrodes in a large array, circuitry may be fabricated on a single silicon (Si) wafer having a dimension that is at least the same or larger than that of the multiple-well array. According to one aspect of the present disclosure, standard CMOS fabrication process such as those known to be used in a standard semiconductor foundry may be used without expensive customization for complex fabrication procedures. This may help the production cost to be lowered in some cases.

[Continued on next page]

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