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(71) Applicant: **UNIVERSITY OF UTAH RESEARCH FOUNDATION** [US/US]; 615 Arapen Drive, Suite 310, Salt Lake City, UT 84108 (US).

(72) Inventor: **TABIB-AZAR, Massood**; 615 Arapen Drive, Suite 310, Salt Lake City, UT 84108 (US).

(74) Agent: **ERICKSEN, Erik, S.** et al.; Thorpe North & Westem, LLP, 8180 S 700 E, Suite 350, Sandy, UT 84070 (US).

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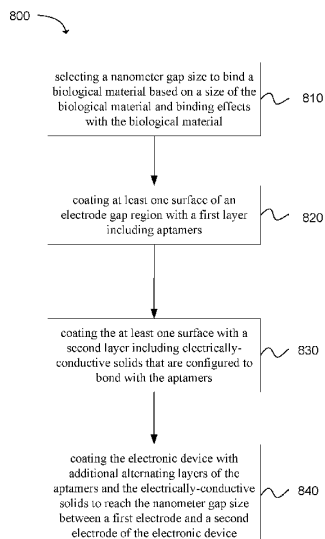
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(54) Title: METHODS FOR REDUCING ELECTRODE GAP DISTANCES IN ELECTRONIC DEVICES AND RESULTING DEVICES HAVING NANOMETER ELECTRODE GAPS VIA LIQUID PHASE MOLECULAR LAYER DEPOSITION TECHNIQUE



(57) Abstract: A method for reducing electrode gap distances in an electronic device having a first electrode spatially separated from a second electrode by an electrode gap can comprise selecting (810) a nanometer gap size to bind a biological material based on a size of the biological material and binding effects with the biological material. The method can further comprise coating (820) at least one surface of an electrode gap region with a first layer including molecular recognition groups, and coating (830) the at least one surface with a second layer including electrically-conductive solids that are configured to bond with the molecular recognition groups. The electronic device can be further coated (840) with additional alternating layers of the molecular recognition groups and the electrically-conductive solids to reach the nanometer gap size between a first electrode and a second electrode of the electronic device.

FIG. 8