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Gardner et al.(10) **Pub. No.: US 2022/0361323 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **METHODS AND SYSTEMS FOR
FABRICATING 3D MULTIELECTRODE
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ABSTRACT

Methods and systems for fabricating 3D electronic devices, such as multielectrode arrays, including metalized, 3D printed structures using integrated 3D printing and photolithography techniques are disclosed. As one embodiment, a multielectrode array comprises a flexible substrate, a plurality of photopatterned electrical traces spaced apart and insulated from one another on the substrate, and a plurality of 3D printed electrodes. Each 3D printed electrode comprises a photopolymer coated in metal and has a 3D structure that extends outward from the substrate, and each 3D printed electrode is electrically connected to a corresponding electrical trace of the plurality of photopatterned electrical traces.

