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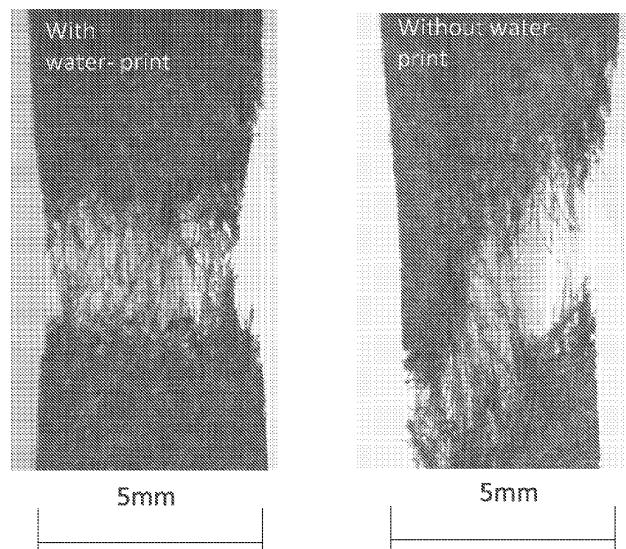
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(54) Title: WETTING- AND FRACTURE-INDUCED COMPOSITES FOR HIGHLY SENSITIVE RESISTIVE AND CAPACITIVE SENSORS



**FIG. 7B**

(57) Abstract: A sensor, comprising including a composite substrate including a template material, where the template material includes a plurality of insulating fibers, and a plurality of carbon nanotubes bonded to the insulating fibers forming a nanotube coating on the insulating fibers, and where the composite substrate exhibits a tensional fracture induced by a unidirectional tensile force to the composite substrate, wherein the plurality of insulating fibers align along the tensile force and expand in an out-of-plane direction at the site of the fracture, a first electrode coupled to the nanotube coating on one side of the fracture, and a second electrode coupled to the nanotube coating on the opposite side of the fracture, such that an electrical signal applied between the first electrode and the second electrode passes through the plurality of junctions at the site of the fracture.

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WO 2022/140286 A1

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