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(54) **PROCESS FOR LOCALIZED REPAIR OF GRAPHENE-COATED LAMINATION STACKS AND PRINTED CIRCUIT BOARDS**

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(57) **ABSTRACT**

Processes for localized lasering of a lamination stack and graphene-coated printed circuit board (PCB) are disclosed. An example PCB may include a lamination stack, post-lamination, that may further include a core, an adhesive layer, and at least one graphene-metal structure. A top layer of graphene of the graphene-metal structure may have never been grown before the lamination process or may have been removed post-lamination such that a portion of the top layer of graphene is missing. The localized lasering process described herein may grow (for the first time) or re-grow the graphene layer of the exposed portion of the metal layer without adverse effects to the rest of the lamination stack or PCB and while promoting a uniform layer of graphene on the top surface. A process of growing graphene through application of molecular layer and a self-assembled mono-layer (SAM), are also described herein.