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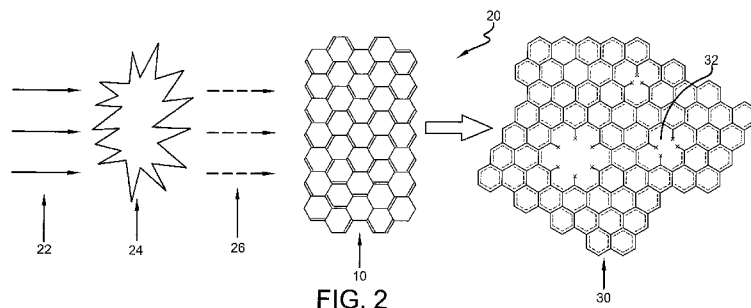
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- (54) **Title:** METHODS FOR PERFORATING GRAPHENE USING AN ACTIVATED GAS STREAM AND PERFORATED GRAPHENE PRODUCED THEREFROM



- (57) **Abstract:** Graphene sheets having a plurality of holes in their basal planes are described herein. Methods for making the graphene sheets can involve contacting graphene sheets with an activated gas that has contacted a helium or argon atmospheric pres-
sure plasma. The size and/or number of holes introduced can be altered by changing the contact time, the stand-off distance, the ac-
tivated gas concentration, and/or the plasma power. Polymer composites containing the perforated graphene sheets are also de-
scribed.