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(54) Title: GRAPHENE PROCESSING TECHNIQUE

(57) Abstract: The invention relates to a method of processing graphene comprising the steps of: combining few-layer graphene with a poly(alkylene oxide); drying to form a graphene/poly(alkylene oxide) composite; and calcining the graphene/poly(alkylene oxide) composite thus formed in an inert atmosphere. The invention also relates to processed graphene comprising a few-layer feature, wherein the graphene further comprises one or more features selected from: in-plane nanopores with dimensions of from about 1.5 nm to about 3.5 nm; a greater than 50% expanded interlayer lattice; an expansion interlayer distance of greater than 3.40 Å; and an atomic O/C content of less than 4 %. The invention further relates to cathodes and batteries comprising processed graphene, and the use of processed graphene in capacitive deionization or rechargeable battery applications.



WO 2022/109673 A1