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Large Scale Production of High Aspect Ratio Graphite Nanoplatelets with Tunable Oxygen Functionality

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Supplementary Information

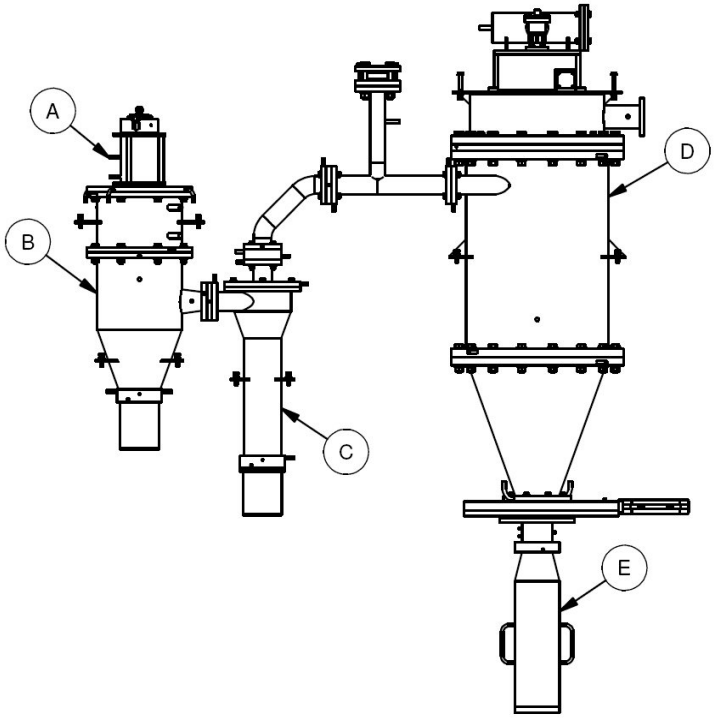

Fig. S1 Thermal ICP reactor design for the thermal expansion of graphite. The labeled components are as follows: A) TEKNA PL-70 plasma torch, B) reactor, C) cyclone, D) filter baghouse, and E) collection canister. Note: the collection canister is not drawn to scale.

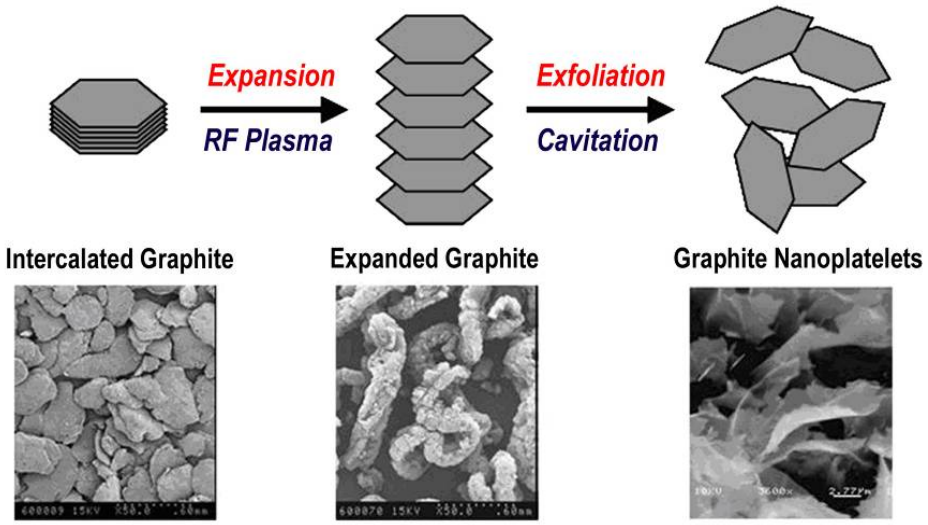

Fig. S2 Scheme illustrating 2-step production process for the production of graphite nanoplatelets along with SEM images showing the morphology of graphite particles at each step.

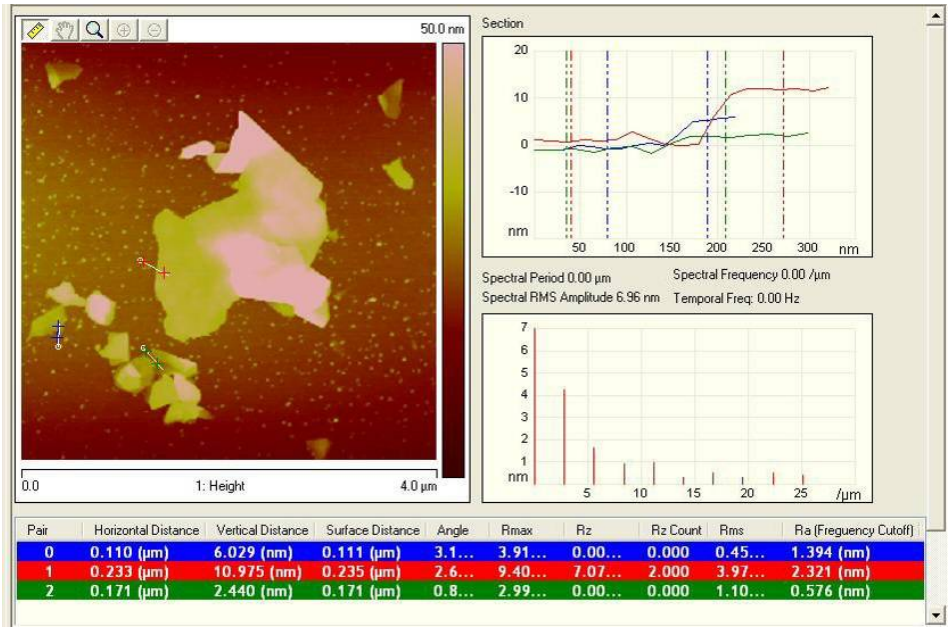

Fig. S3 AFM image and height profiles for graphite nanoplatelets prepared from *PExG* expanded in plasma sheath gas comprised of 9 slpm O_2. Exfoliation of *PExG* was induced by gentle stirring with a magnetic string bar in water with Pluronic® P123 as a dispersant.

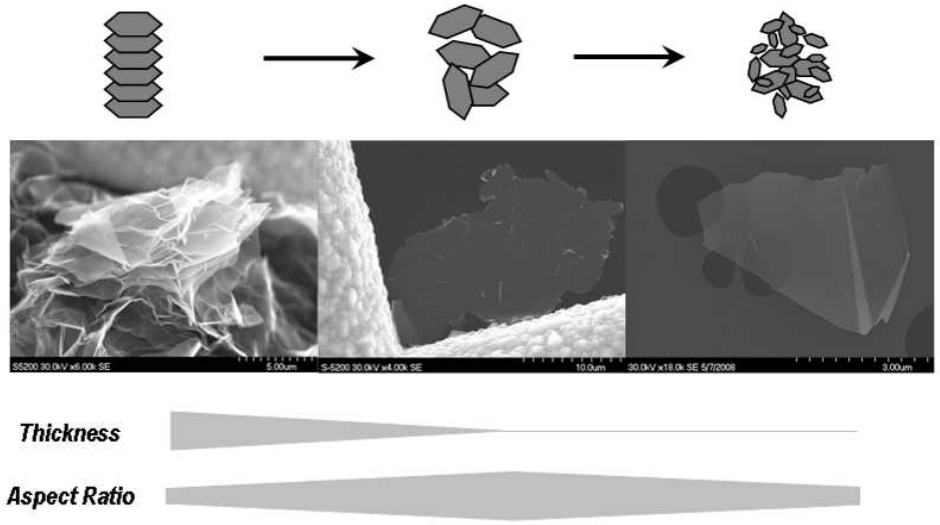

Fig. S4 Scheme illustrating evolution of GraphEx morphology with increasing ultrasonication time along with SEM images.