Supporting Information

Ductile Amorphous Boron Nitride Microribbons

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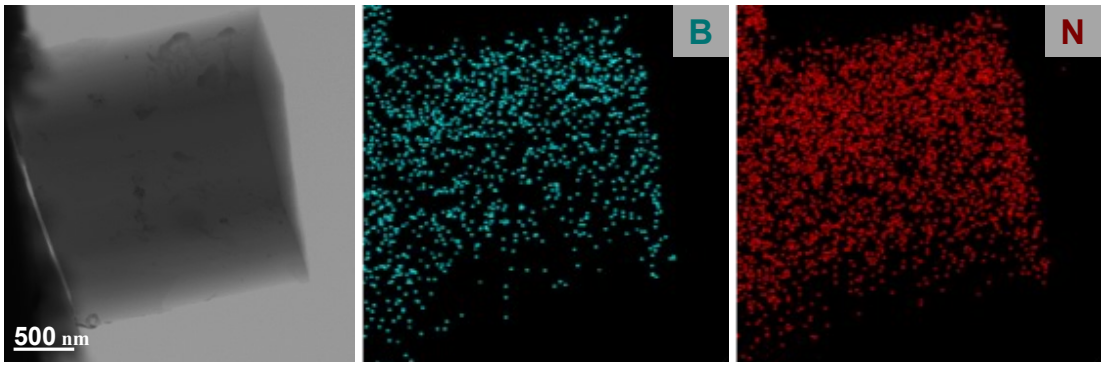

Fig. S1. TEM-EDS mappings of single a-BN microribbon.

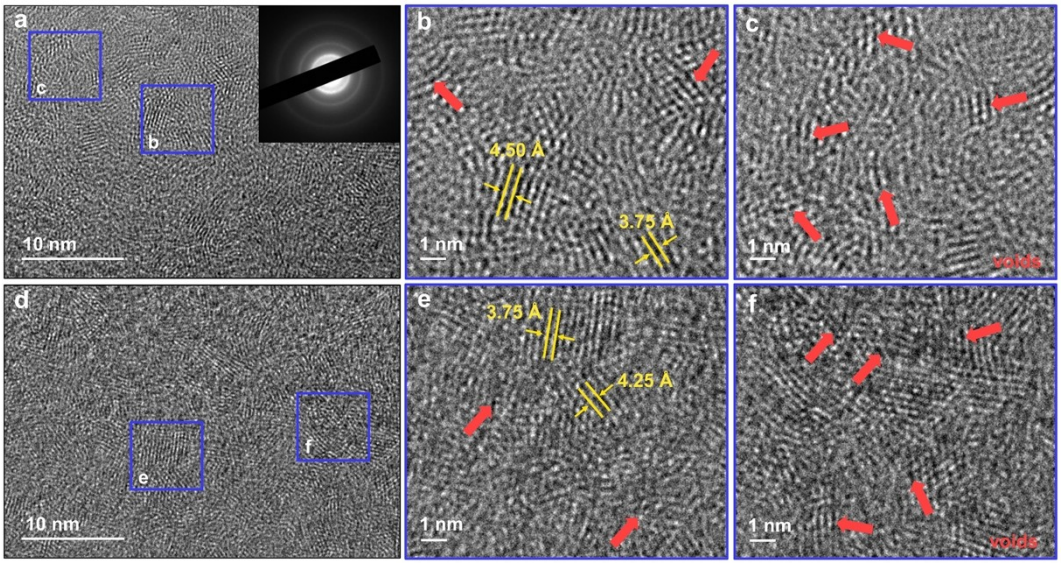

Fig. S2. (a), (d) Representative HRTEM images of the a-BN microribbons, showing the disordered structure. Inset displaying the SAED pattern of the sample. (b-c), (e-f) HRTEM images of the two regions denoted by blue solid boxes in (a), (d), respectively, these images revealing the presence of sub-nanometer-sized voids (outlined by red arrows).

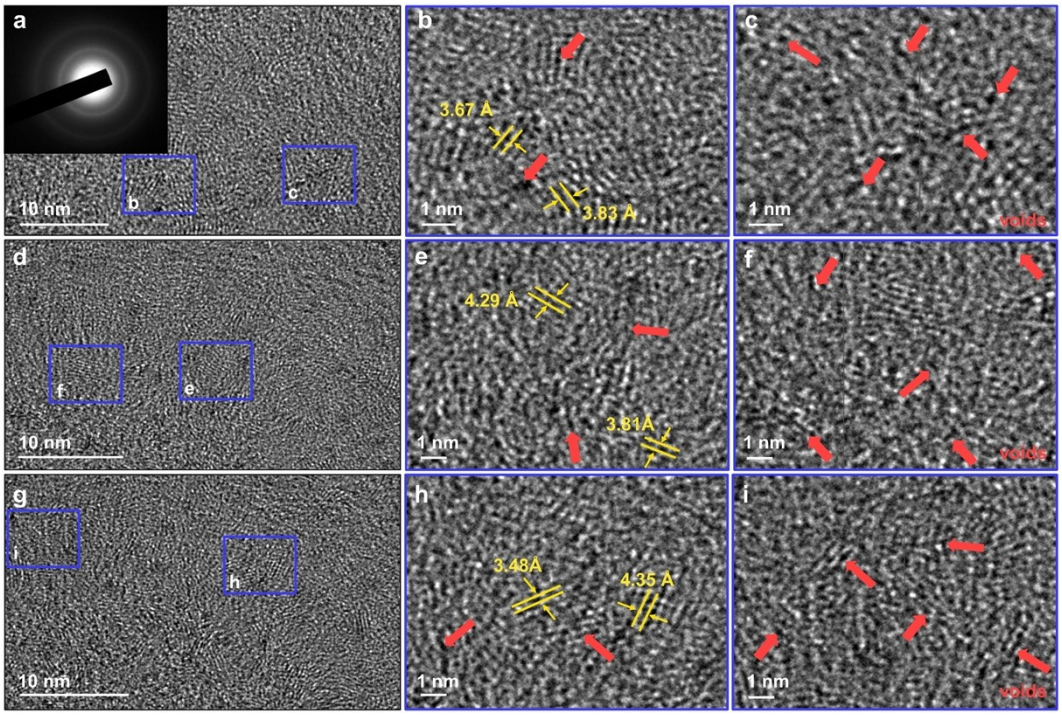

Fig. S3. (a), (d), (g) Representative HRTEM images showing the cross-section of a-BN microribbons, exhibiting the disordered structure. (b-c), (e-f), (h-i) HRTEM images of the two regions denoted by blue solid boxes in (a), (d), (g), respectively, these images revealing the presence of sub-nanometer-sized voids (outlined by red arrows).

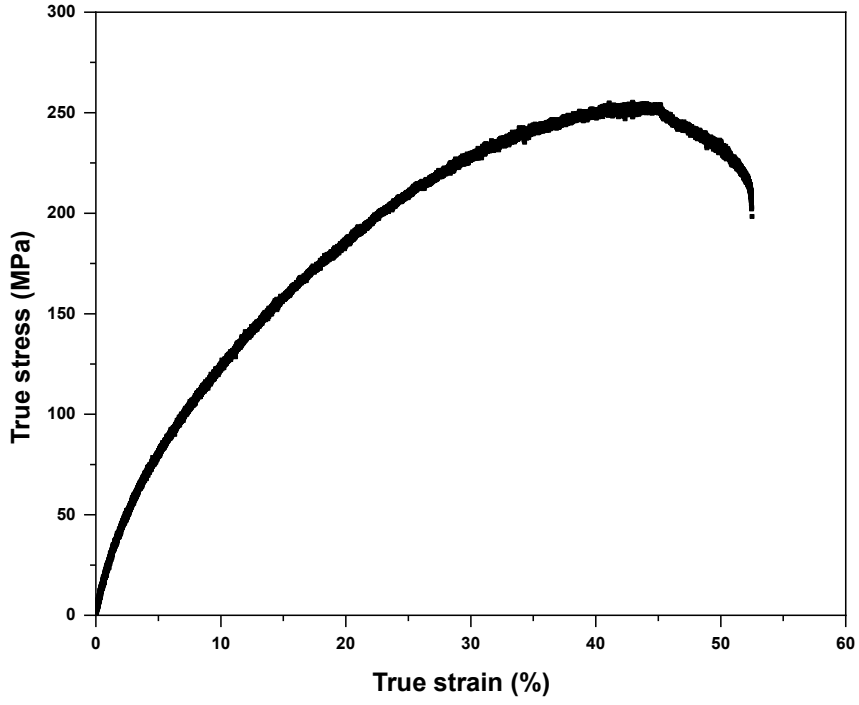

Fig. S4. The true stress-strain curve of the tensile a-BN microribbon.

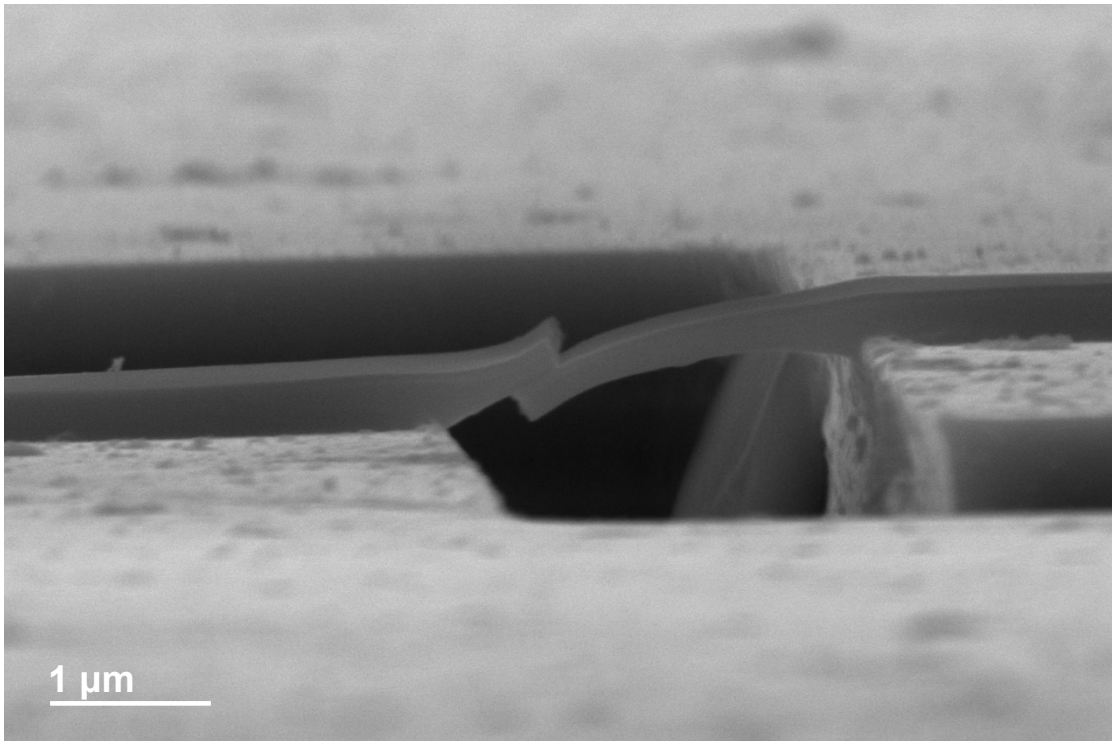

Fig. S5. SEM image showing the side view of the tensile sample after complete unloading.

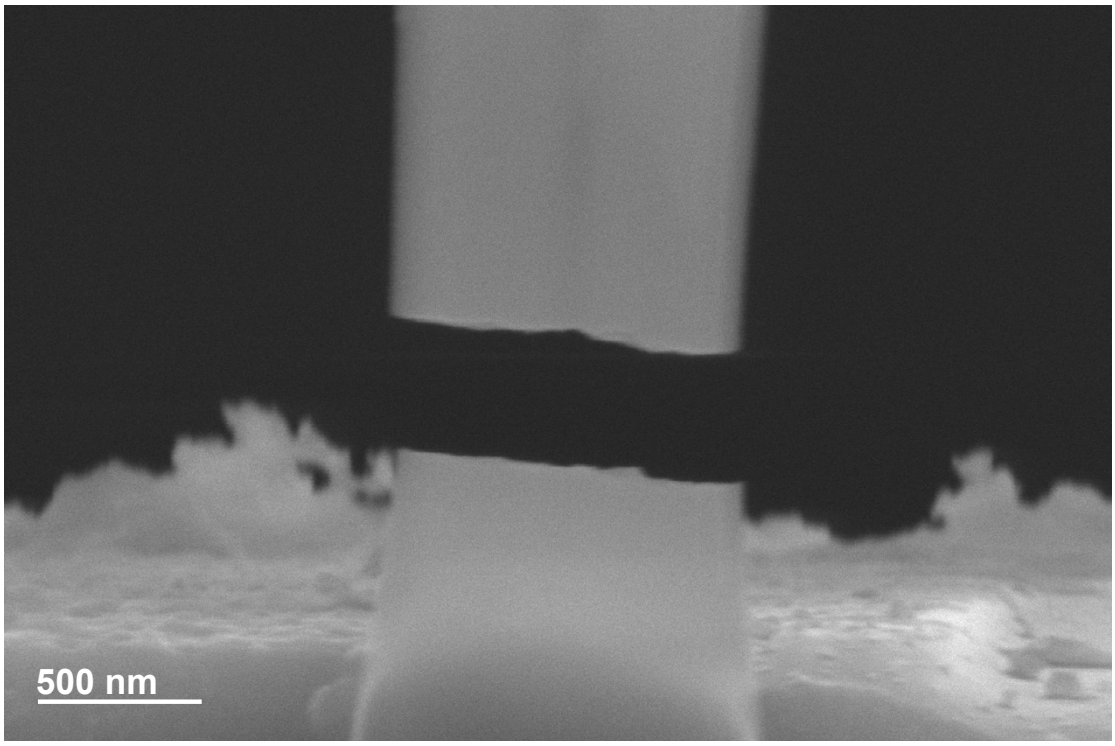

Fig. S6. SEM image of the crack edge morphology of the tensile specimen.

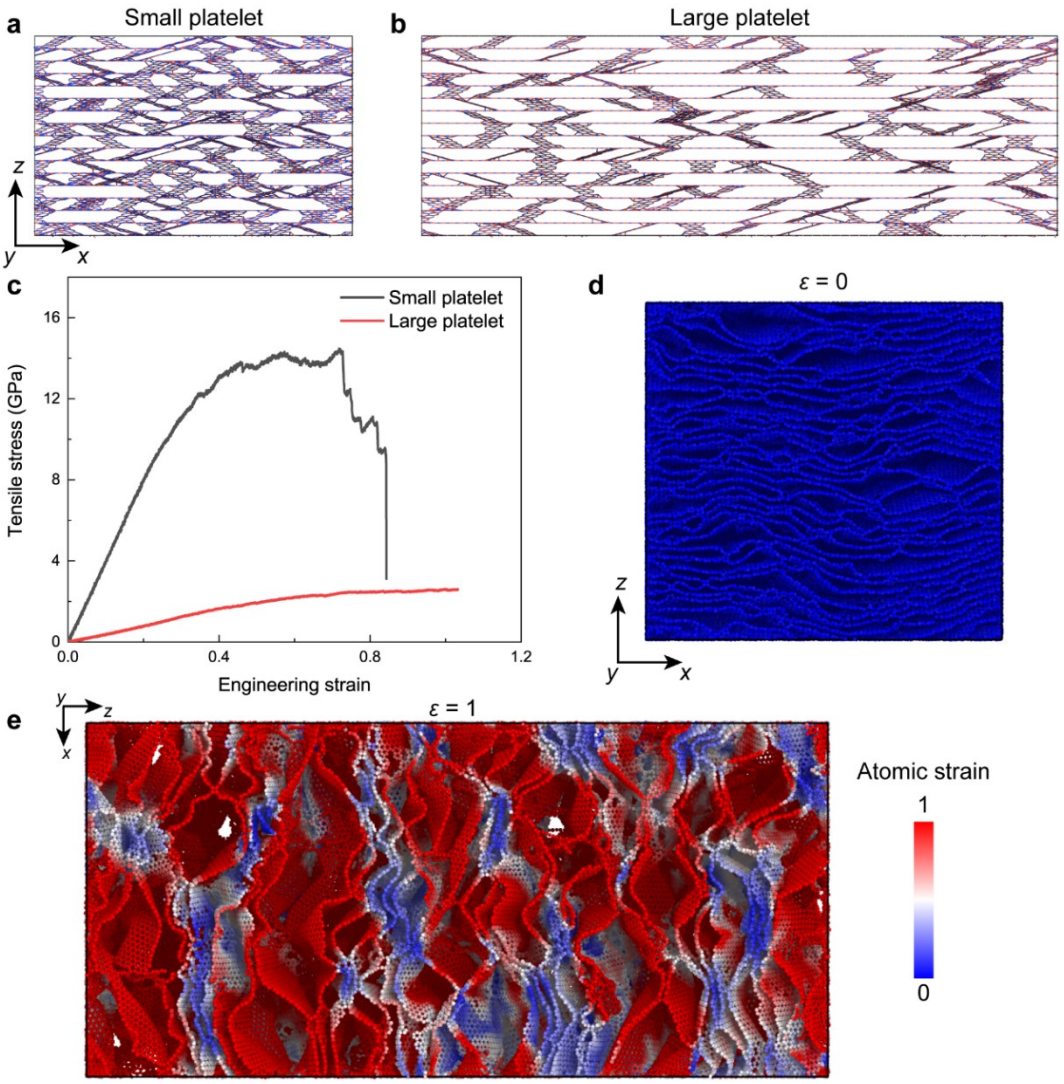

Fig. S7. Porous BN with small platelets (a) and large platelets (b). (c). Tensile stress-strain curves under different domain sizes. (d, e) Snapshots of deformed a-BN with large platelet.

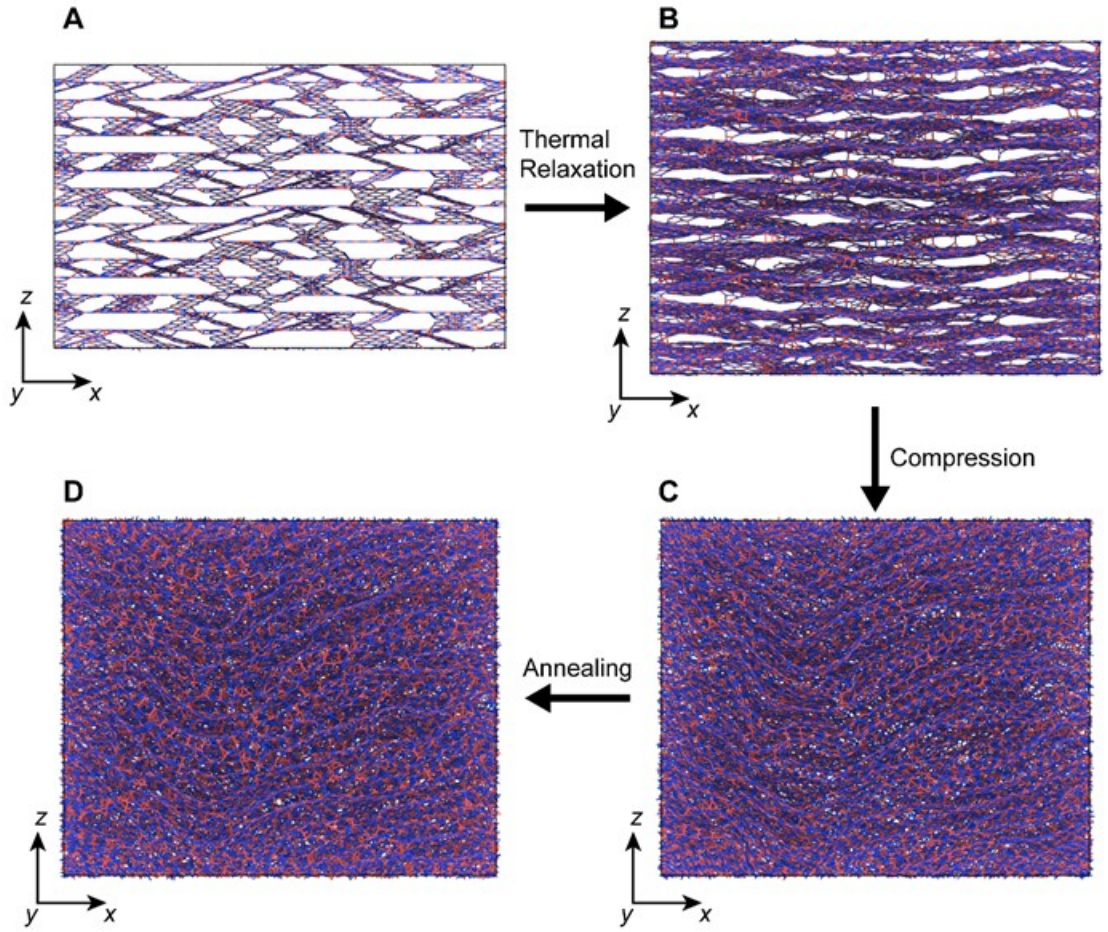

Fig. S8. The construction process of amorphous boron nitride model in molecular dynamics simulation. Porous BN with interlayer crosslink before (a) and after thermal relaxation (b). A-BN before (c) and after the annealing process (d).

Supplementary Movie 1 shows the in-situ uniaxial tensile measurement of the a-BN microribbon.
Supplementary Movie 2 shows the cyclic loading-unloading tensile tests of the a-BN microribbon.
Supplementary Movie 3 shows the initiation and propagation process of a crack in a-BN microribbon.
Supplementary Movies 4 shows molecular dynamics simulation of the plasticity of a-BN microribbon.
Supplementary Movies 5 shows fracture behavior of a-BN microribbon.