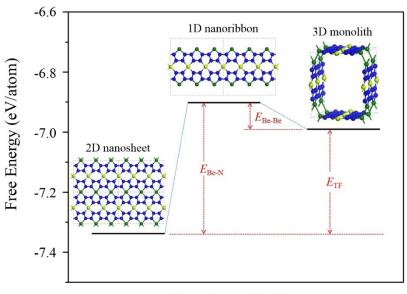
Electronic Supplementary Information

## BeN4 Nanoribbon-Based 3D Porous Metallic and Ductile Monolith for High-

## **Performance Sodium-Ion Battery Anode**

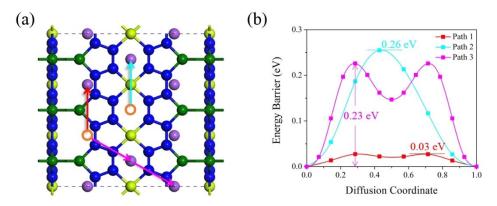
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**Transformation Process** 

**Fig. S1.** Energetics for the evolution from the 2D BeN<sub>4</sub> sheet to the 1D nanoribbon, and to the 3D monolith.



**Fig. S2.** (a) Three nonequivalent diffusion pathways for a single vacancy (orange circle), and (b) the corresponding energy barrier profiles.