

Supporting Information

The details of calculation:

The structures of ABS zwitterions and the single layer of LDHs and MMT were simulated and optimized in Dmol3 module with GGA/PW91 function. In the process of geometry optimization, the SCF tolerance was set as 10^{-4} , the Max Force was set as 0.02Ha and the Max Displacement was set as 0.05 Å. The unit cell was constructed by combining the single layers of LDHs and MMT in a ratio of 1:1 with ABS zwitterions. The lattice parameter of the M1 unit cell were $a= 0.5378$ nm, $b= 0.91862$ nm, $c= 2.44995$ nm. The lattice parameter of the M2 unit cell were $a= 0.53995$ nm, $b= 0.9195$ nm, $c= 2.25327$ nm.

Information about the MMT

The crystal parameters of MMT used in the experiment was $a=0.518$ nm, $b=0.898$ nm, $c=0.98\sim 1.52$ nm. The major chemical components of MMT were SiO_2 , Al_2O_3 , H_2O , and small amount of elements were Mg, Na, K and others. The MMT reagent was bought from Sand Technology from Zhejiang Province.