

Solar energy storage requires phosphorus





Overview

Which phosphorus is most stable and least reactive?

It is noted that BP is the most stable and least reactive form compared to other allotropes of red, white and violet phosphorus. BP is composed of puckered honeycomb layer structures stacked through van der Waals (vdW) interactions (figure 1).

Can phosphorene/graphene heterostructure enhance the cycle life of lithium ion batteries?

Theoretical reports have demonstrated that the phosphorene/graphene heterostructure could effectively enhance the cycle life of LIBs owing to ultrahigh stiffness by prohibiting the distortion of pristine phosphorene after the lithium insertion . This property has been further proved by several experimental studies [55, 57].

What are emerging energy storage devices?

Emerging energy storage devices mainly contain LIBs, LSBs, MIBs, SIBs and supercapacitors, as shown in figure 2. Recently, BP has shown outstanding performance as a potential candidate for these devices, as shown in table 1.



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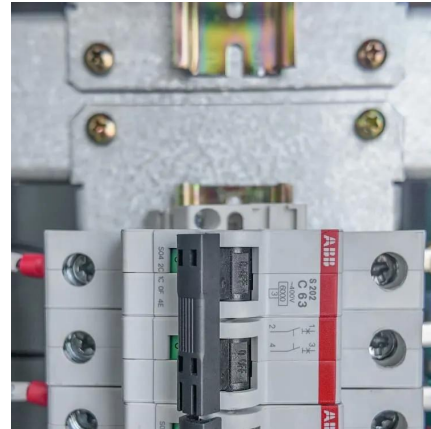
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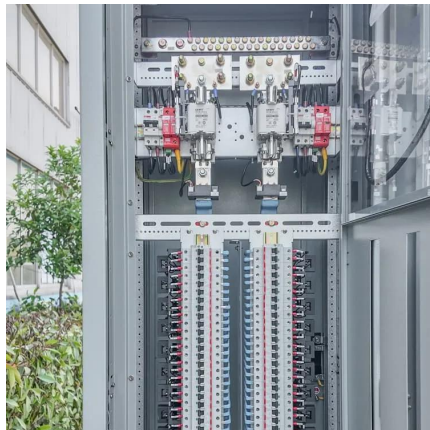
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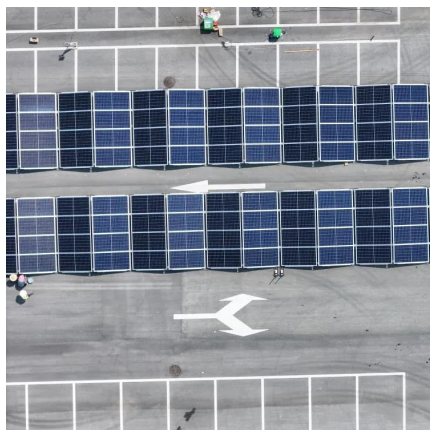


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