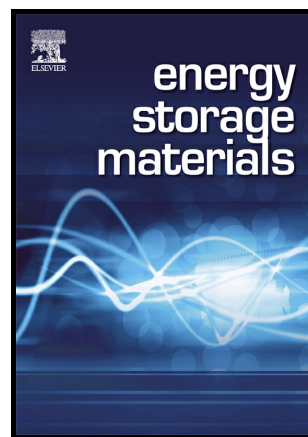


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# A New Insight into the Lithium Storage Mechanism of Sulfurized Polyacrylonitrile with No Soluble Intermediates

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## ABSTRACT

Sulfurized polyacrylonitrile (S@pPAN) is a promising cathode material for next-generation batteries due to its high stable cycle performance. However, challenges remain in achieving larger capacity and higher discharge voltage, it is therefore of vital significance to illustrate the electrochemical reaction mechanism of S@pPAN or similar materials. Herein, we present conjugate double-bond lithium-ion storage mechanism by solid-state NMR and XPS. During discharge, besides the reaction between sulfur and lithium, the C=N and C=C groups can also react with

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