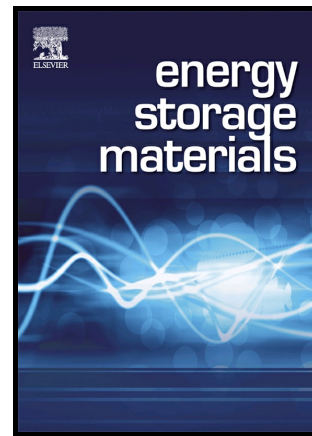


# Author's Accepted Manuscript

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PII: S2405-8297(18)30379-9  
DOI: <https://doi.org/10.1016/j.ensm.2018.04.023>  
Reference: ENSM375

To appear in: *Energy Storage Materials*

Received date: 31 March 2018  
Revised date: 18 April 2018  
Accepted date: 21 April 2018

Cite this article as: Miao Zhang, Xiaohe Song, Xuewu Ou and Yongbing Tang, Rechargeable batteries based on anion intercalation graphite cathodes, *Energy Storage Materials*, <https://doi.org/10.1016/j.ensm.2018.04.023>

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# Rechargeable batteries based on anion intercalation graphite cathodes

## Rechargeable batteries based on anion intercalation graphite cathodes

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### Abstract

Owing to the low cost, abundance and high working voltage, graphite cathodes have attracted tremendous attention in rechargeable batteries, especially in aluminum ion batteries (AIBs) and dual-ion batteries (DIBs). In this review, firstly, a general introduction is given to distinguish the working mechanism of graphite from the conventional metal oxide used as cathode in batteries. Secondly, the characterization methods of anion intercalated compounds, theoretical simulation of anion intercalation behavior into the graphitic cathode and the kinetic study of anion diffusion in graphite are discussed. Then, progresses and challenges of AIBs with different types of graphite cathode materials are presented. Next, typical DIBs systems with graphite cathode, a variety of anodes and electrolytes are introduced in detail. Finally, a conclusion for battery systems with anion

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