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Nanostructured Lithium Titanates ($Li_4Ti_5O_{12}$) for Lithium-Ion Batteries

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ABSTRACT:

Nanostructured lithium titanates ($Li_4Ti_5O_{12}$) have been intensively investigated as anode materials of Li-ion batteries due to their many advantages, such as excellent performance, outstanding safety, and excellent cycle life. This chapter firstly focuses on the crystal structure and lithium intercalation/de-intercalation mechanism of LTO, subsequently, the present status of nano-LTO including the synthesis method and structural design. Secondly, it is devoted to discussion of LTO battery performance and design,gasing mechanisms and how to suppress gasing generation. Finally, the outlook and perspective for application of LTO is outlined.