# A Hybrid-DFT Study on Sodium Ion Conductive Mechanism of β-Alumina

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In lithium ion battery, lithium ion conductor is used for the lithium ion conductive electrolyte. Previously, we investigated the lithium ion conductive mechanism of the perovskite-type titanium oxide. It was concluded that lithium ion has the ionic bonding with other atoms, by the use of our chemical bonding rule [1-2]. In addition, we designed the new lithium ion conductive perovskite with the thermally stable structure [3-4].

Recently, sodium-sulfur battery has been much expected as rechargeable battery, as same as lithium ion battery. In sodium-sulfur battery, β-alumina is used for the sodium ion conductive electrolyte. We have investigated the sodium ion conductive mechanism of β-alumina, by the use of hybrid-DFT.

**References**

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