Faculty of Science and Technology
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NMR study of Ion Dynamics in Electrode Materials for Ion Rechargeable Battery

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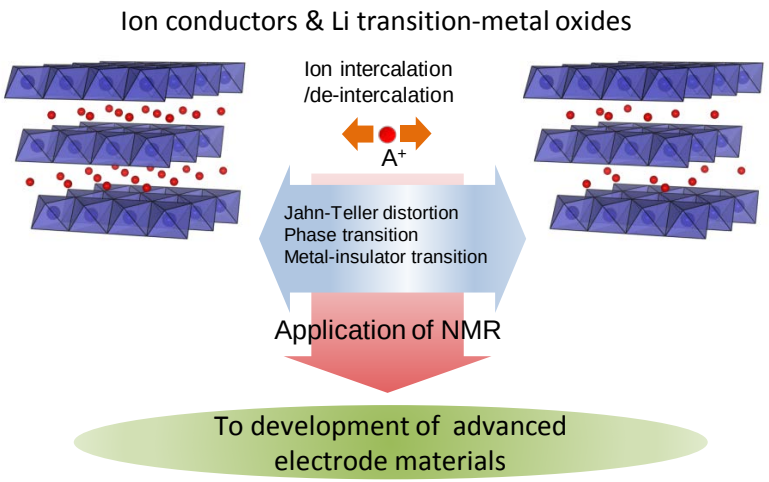

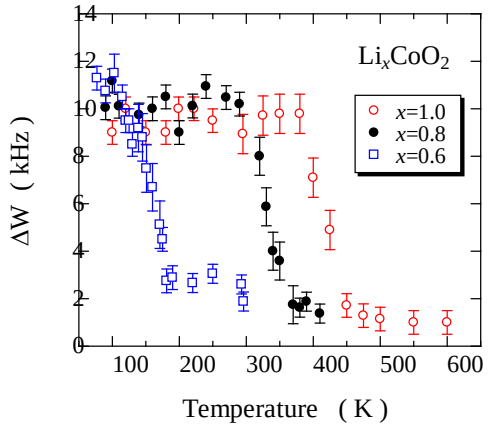

Temperature dependence of 7Li-NMR line widths in Li_xCoO_2.

Content:

Energy device materials such as ion rechargeable battery and fuel cell are key materials for sustainable energy resource. Conventional electrical measurement technique is inadequate to study electrochemical reaction microscopically. In special, microscopic insights for ion intercalation/de-intercalation are required to develop electrode materials for the advanced rechargeable battery.

NMR is a powerful tool to study local ion dynamics and electronic state in electrode materials because of probing nucleus directly. Spin-lattice relaxation, Spin-spin relaxation, and FT spectrum give an important information to the development of materials for ion rechargeable batteries.

We aim to understand diffusion mechanism and ionic conducting behavior in various ion conductors/electrode materials with NMR technique.

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