

温度変化で発電するモバイル発電器

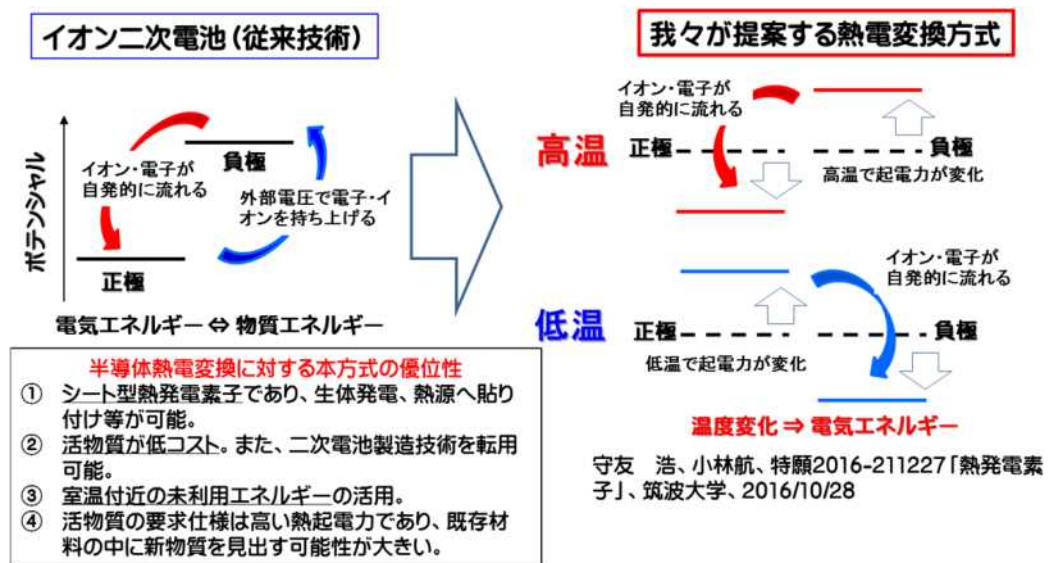
Thermoelectric effect due to redox process

概要

我々は、二次電池技術を転用した新しいタイプの熱電変換素子（熱発電セル）を提案する。このセルでは、二次電池の正極と負極に熱起電力の符号の異なるレドックス物質を配置する。このセルは温度変化を電力に変換するため、モバイル発電等、様々な用途で活用できる。本デバイス実現に向けて、巨大熱起電力を示すレドック材料の開発を行う。

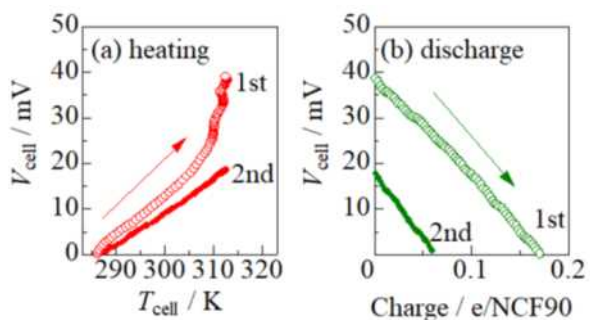
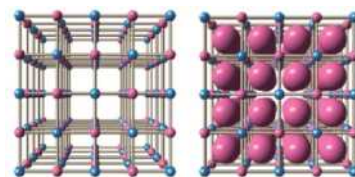
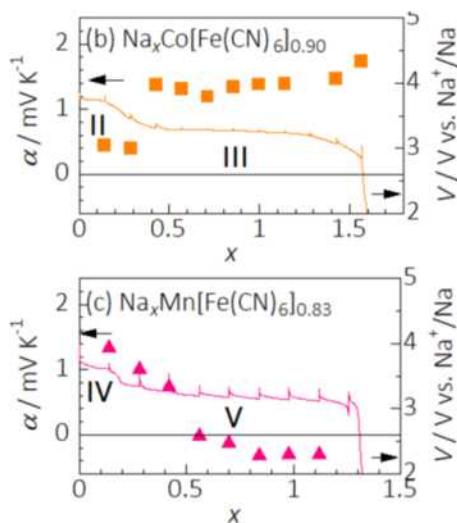
We proposed a new thermoelectric device (thermoelectric cell) with use of the ion-secondary battery technology. In this cell, redox materials with opposite thermal coefficients of voltage are used as cathode and anode materials. The cell converts the temperature change to the electric power and can be utilized in a variety of situations, such as mobile power generation. To realize the device, we will explore the redox materials with giant thermal voltage.

Concept of Thermoelectric cell



Demonstration of Power Generation

Cobalt Prussian blue analogues



Y. Fukuzumi, et al. *Energy Technol.* 10.1002/ente.201700952