Peltier heats of lithium-ion battery electrodes

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Lithium ion batteries have issues related to ageing of the battery and safety. When charging and discharging lithium-ion batteries, heat is released. The temperature of the battery is one of the most important factors for ageing and safety. In order to understand this ageing, we need know the heat sources and sinks in the electrode compartments to accurately model internal temperature profiles. At the electrode surfaces there will be two heat effects; one irreversible and one reversible effect. The reversible effect is the Peltier heat of the electrode and have to this date not been accounted for in battery modelling. In this talk we will show through theory and experimental results why the Peltier heats need to be included in these models.