

**An Estimation Method of SOC of Lithium-ion Battery
for Contact-wire and Battery Hybrid Electric Railway Vehicle**

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Nowadays, there has developed some railway vehicles equipped with the on board secondary batteries to improve the energy saving performance. Concerning such vehicles, accurate and stable SOC (state of charge) estimation is important for the management of battery energy. In this paper, we showed a SOC estimation method developed for the lithium ion batteries boarded on contact wire and battery hybrid electric railway vehicle. This method enabled the stable SOC estimation and the automatic tuning of parameters such as battery capacity and its inner resistance. These characteristics of developed method had been evaluated through the running test on the JR Shikoku railway main line.