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Grading Technology Verification in FY2022
with Mitsubishi Motors Corporation

Kyoto, Japan – Nuvoton Technology Corporation Japan (NTCJ) today announced a grading technology verification completion with Mitsubishi Motors Corporation.

*Toward circular economy
 realization by utilizing in-vehicle
 used batteries*

In recent years, the spread of electric vehicles (EV) has been accelerating for global environmental protection. Under such circumstances, secondary use of spent in-vehicle batteries has been considered instead of discarding. However, end-of-service EV battery reuse requires grading (sorting) of remaining battery life, and conventional methods take a very long time. A high-speed grading technology is now increasingly important to build a reuse ecosystem.

NTCJ, in collaboration with Mitsubishi Motors Corporation, has verified the grading technology for second-life EV batteries by AC impedance method as a two-year program since 2021.

In FY2021, we successfully derived an algorithm to estimate a deterioration state from the correlation between the impedance of a battery-cell and the remaining battery life.

Program Report for FY2021: [Link](#) *Japanese Version Only

With the estimation algorithm, we conducted grading of used in-vehicle battery modules in the final program year of FY2022. Our high speed and accuracy grading technology with the AC impedance method demonstrated the performance, realizing a-few-minute accurate diagnosis* of SOH with an error margin of plus or minus 2.5 percent. *Except for some conditions

Going forward, NTCJ will contribute to the construction of a circular economy by integrating this technology with our semiconductor ICs in portable grading systems.

Program Report for FY2022:

https://www.mitsubishi-motors.com/jp/sustainability/environment/recyclelow/pdf/AC_Method_summary_2022.pdf

*Japanese Version Only

We will continuously focus on the realization of a sustainable earth and society through our battery management technology.

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About Nuvoton Technology Corporation Japan (NTCJ)

Nuvoton Technology Corporation Japan (NTCJ) joined Nuvoton Group in 2020. As a dedicated global semiconductor manufacturer, NTCJ provides technology and various products cultivated over 60 years since its establishment, and solutions that optimally combine them. We value relationships with our customers and partners, and by providing added value that exceeds expectations, we are working as a global solution company that solves various issues in society, industry, and people's lives. For more information, please visit <https://www.nuvoton.co.jp/en/>.