

Gii Energy and Catalysis

MnO₂ decorated Gii Electrode as Cathode in Primary Zn–Mn Battery

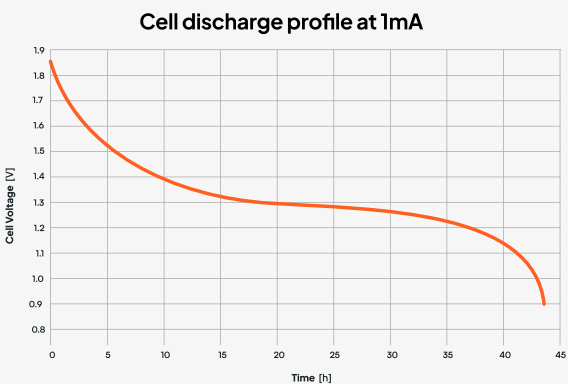
MnO₂ Decorated Gii Electrode

The Designed-for-Manufacture Gii production process and scalable MnO₂ deposition enable consistent results.

A typical discharge profile using fully pouched cells employing screen-printed Zn anode and glass microfibre separator is shown.

The discharge profile exhibits a voltage plateau near 1.2 V, with > 90% capacity above 1.1 V.

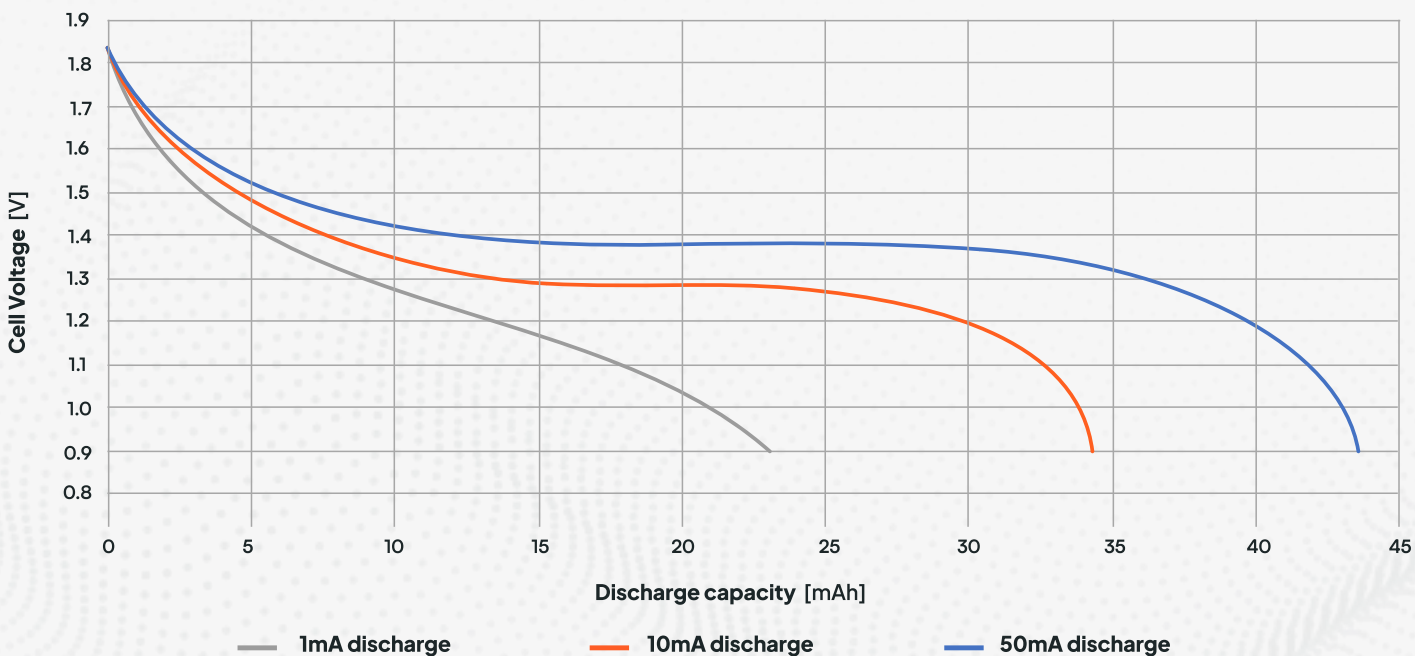
Discharge profile using fully pouched cells employing screen-printed Zn anode and glass microfibre separator



Cell Voltage at Varying Discharge Currents

The highly accessible surface area of the MnO₂ coating enables fantastic high-power performance. Discharge profiles remain stable as current is increased, with main difference being the position of the voltage plateau.

Cell discharge profiles at different currents



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MnO₂ decorated Gii Electrode

Metric	MnO ₂ on Gii (Polyimide Substrate)
External electrode dimensions	83 mm x 50 mm
Active electrode area (footprint)	17.7 cm ²
Nominal voltage	1.5 V
Nominal Capacity (at 1 mA)	42.8 mAh
High current capacity retention (at 10 mA)	80.8 % (91.3 % if discharged 5 times at 10 mA)
Ultra-high current capacity retention (at 50 mA)	53.9 % (77.9 % if discharged 5 times at 50 mA)
Specific areal capacity (active electrode area)	2.4 mAh/cm ²
Internal resistance of MnO ₂ on Gii cathode and full cell	0.3 Ω and 0.6 Ω , respectively
Electrolyte	1 M ZnCl ₂
Anode	Screen-printed Zn on Carbon, with Ag current collector
Separator	Glass microfibre

● Average value from at least five samples. Cut-off voltage of 0.9V used in testing.



GENERATION GII

Gii has the potential to provide a breakthrough in printed battery materials, delivering high-performance and reproducible electrodes that drop straight into existing carbon ink processes.

Contact our team to discuss your requirements by email at marketing@igii.uk, or scan the QR code.

