



東北大学

TOHOKU UNIVERSITY

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Empower Your Energy Future

Press Release

2024 6 25

AZUL Energy



●

●

2.6

907 F/g_{AC} ¹

●

20,000

LED

2

CNT

WPI-AIMR

GX

AZUL Energy

4 1

AZUL Energy ×

GX

FeAzPc-4N

2.6 (907

F/g_{AC})

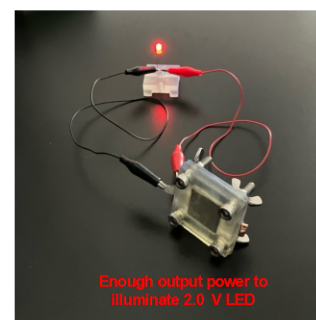
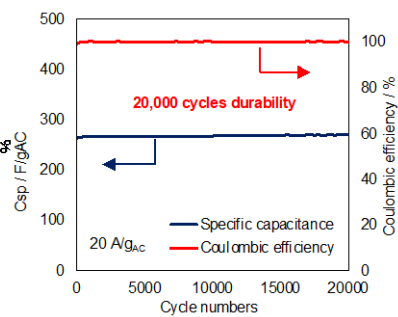
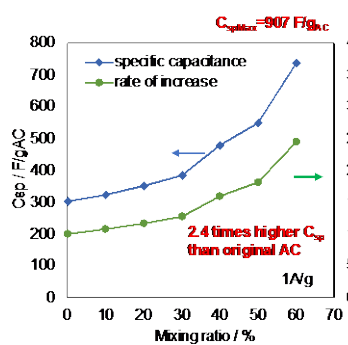
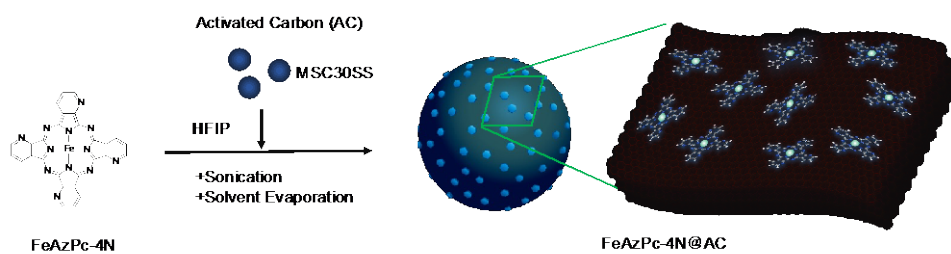
20,000

20 A/g_{AC}
LED

1

CNT

研究

Applied Materials & Interfaces
Supplementary Cover

1.

20 A/g_{AC}
2

LED

10 100 F/g

1,000 F/g

CNT

RuO₂

FeAzPc-4N 2

Oxygen Reduction Reaction, ORR 3

1 FeAzPc-4N ORR

FeAzPc-4N

FeAzPc-4N

FeAzPc-4N

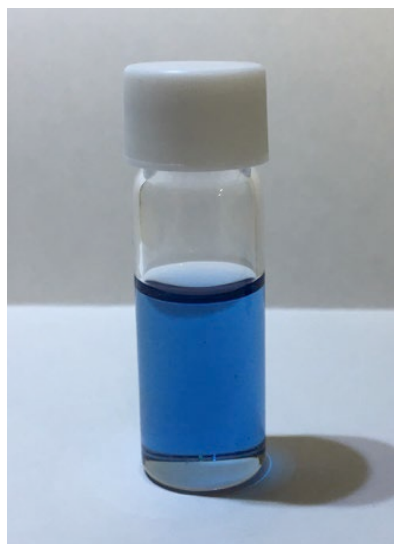
CV

40

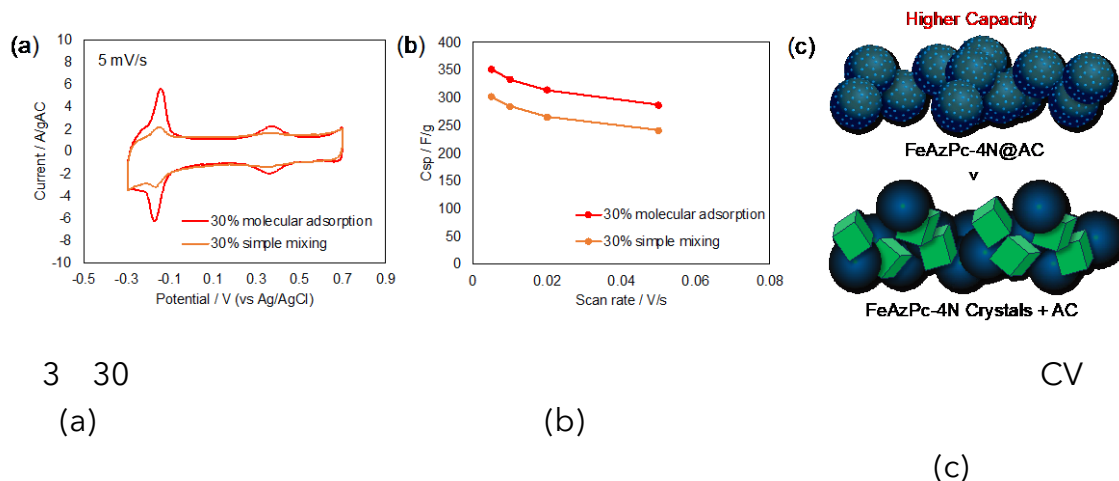
30

60

1 2.6 30 907 F/g_{AC}
40 FeAzPc-4N FeAzPc-4N
FeAzPc-4N
3
20A/g_{AC} 20,000
2V LED LED 2 1
2



2. FeAzPc-4N



3 30

(a)

(b)

(c)

1. H. Yabu*, K. Nakamura, Y. Matsuo, Y. Umejima, H. Matsuyama, J. Nakamura and K. Ito "Pyrolysis-free Oxygen Reduction Reaction (ORR) Electrocatalysts Composed of Unimolecular Layer Metal Azaphthalocyanines Adsorbed onto Carbon Materials" ACS Applied Energy Materials, 4(12), 14380-14389 (2021).
2. D. Zhang, Y. Hirai, K. Nakamura, K. Ito, Y. Matsuo, K. Ishibashi, Y. Hashimoto, H. Yabu*, and H. Li*, "Benchmarking pH-Field Coupled Microkinetic Modeling Against Oxygen Reduction in Large-Scale Fe-Azaphthalocyanine Catalysts" , Chemical Science, 15(14), 5123-5132 (2024).

NEDO

JPMJMI22I5

A JP23H00301
20002167-0

注1. F/g, F/g_{AC}

F

1 (V)
F/g

1 (C)

2
F/g_{AC}

注2.

2

注3.

Oxygen Reduction Reaction, ORR

A Molecular Adsorption Concept for Increasing Energy Density of
Hybrid Supercapacitors

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*

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