

**Supplementary Information of**  
**“Soft chemistry derived Al-substituted hydrated nickel**  
**hydroxide electrodes for rechargeable aqueous batteries”**

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## 1. Additional figures.

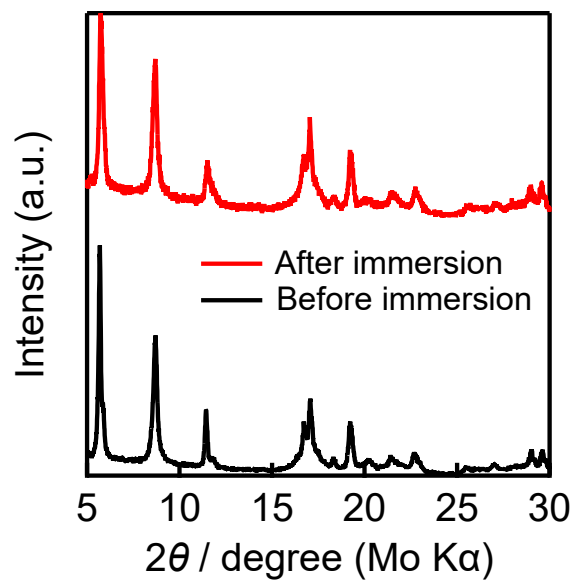


Figure S1. XRD profiles of Al-substituted hydrated nickel hydroxide before and after immersion in 6 mol dm<sup>-3</sup> KOH electrolyte for 60 h.

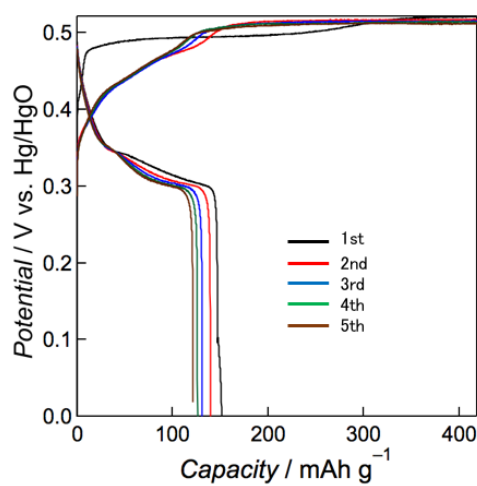


Figure S2. Charge-discharge performance of β-Ni(OH)<sub>2</sub> electrode prepared by the same manner as hydrated nickel hydroxide electrodes in this study.

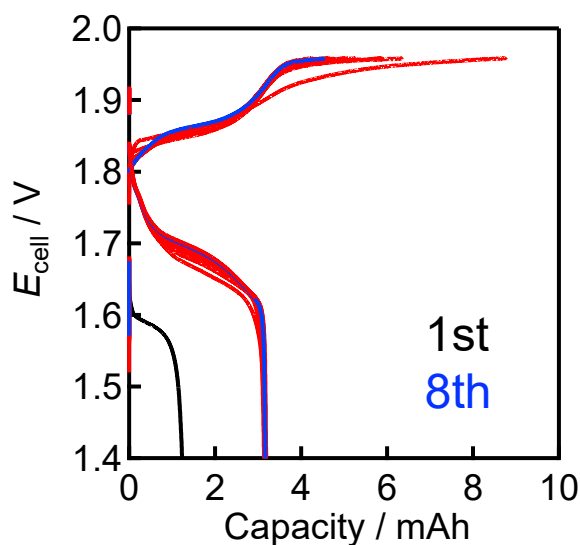


Figure S3. Discharge-charge performance of a full cell with the hydrated Al-substituted  $\gamma$ -NiOOH and metallic zinc plate as positive and negative electrodes in  $6 \text{ mol dm}^{-3}$  KOH cycled at 0.1C for the nickel electrode.

## 2. Synthesis of the coprecipitation sample

Nickel nitrate and aluminum nitrate powder (Ni:Al=0.9:0.1) was dissolved in water and the hydroxide was precipitated by lithium hydroxide solution at  $120^\circ\text{C}$ . The obtained precipitates were filtered, washed and dried.

## 3. Chemical Reagent used in this manuscript

Nickel nitrate: Kanto Chemicals, purity 98%.

Aluminum nitrate: Wako Chemicals, purity 99.9%.

Lithium hydroxide solution:  $0.5 \text{ mol dm}^{-3}$ , Kanto Chemicals, purity 98%.

Lithium hydroxide monohydrate: Kanto Chemicals, purity 98%.

Nickel carbonate basic: Kanto Chemicals, nickel content 50%.