

## Supporting Information

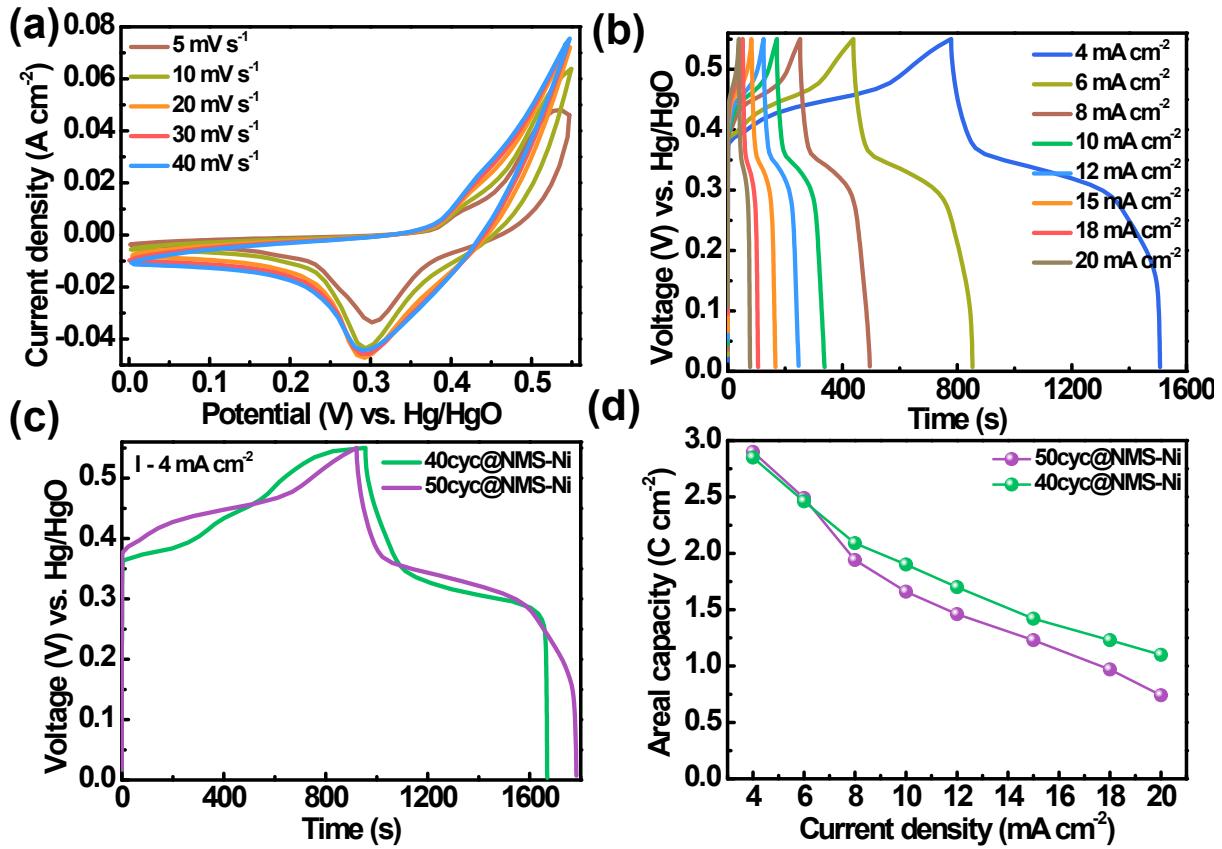
# Selective design of binder-free hierarchical nickel molybdenum sulfide as a novel battery-type material for hybrid supercapacitors

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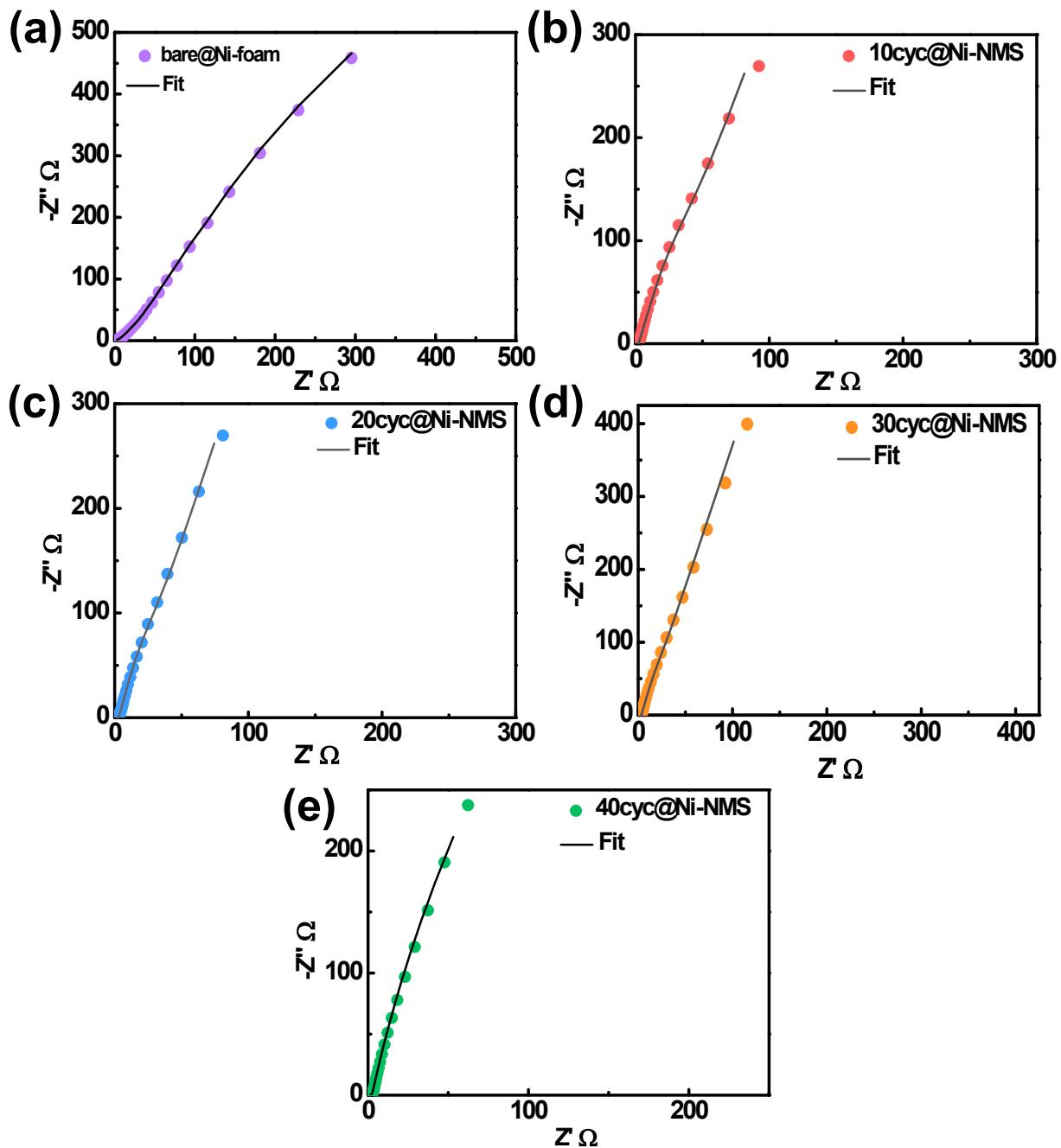
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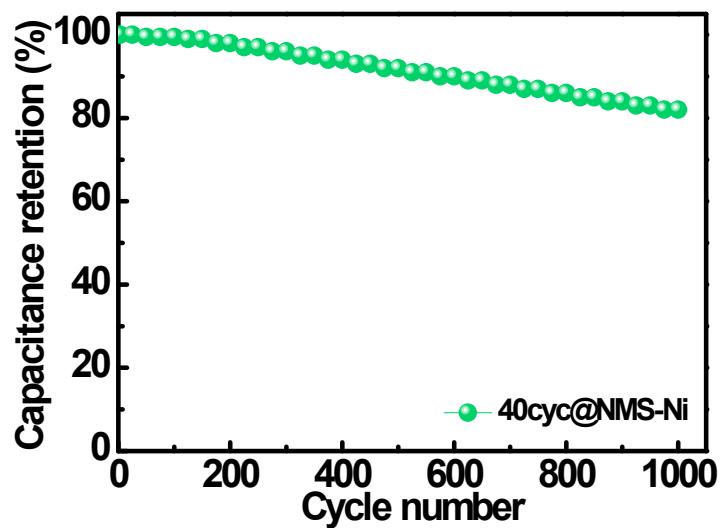
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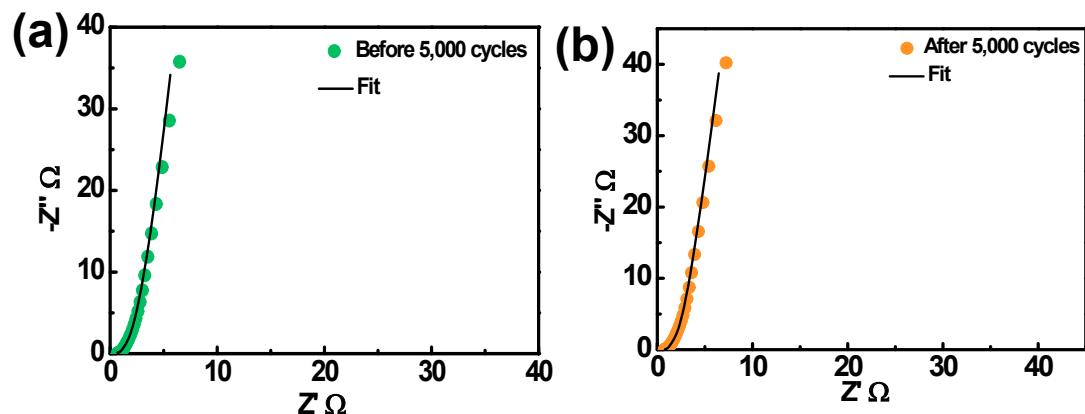
**Figure S1.** a) CVs of 50cyc@NMS-Ni electrode measured at different scan rates, b) GCD curves of the 50cyc@NMS-Ni electrode measured at various current densities, c) GCD curves of the 40cyc@NMS-Ni, and 50cyc@NMS-Ni electrodes at a current density of 4  $\text{mA cm}^{-2}$ , and d) The variation of areal capacity values of the 40cyc@NMS-Ni, and 50cyc@NMS-Ni electrodes with respect to different discharge current densities (4, 6, 8, 10, 12, 15, 18, and 20  $\text{mA cm}^{-2}$ ).



**Figure S2.** Nyquist plots with fitted curve of a) bare@Ni-foam, b) 10cyc@Ni-NMS, c) 20cyc@Ni-NMS, d) 30cyc@Ni-NMS, and e) 40cyc@Ni-NMS samples.



**Figure S3.** Cycling stability of 40cyc@NMS-Ni electrode in three-electrode system.



**Figure S4.** Nyquist plots with fitted curve of (a) before, and (b) after 5,000 cycles at a current density of  $15 \text{ mA cm}^{-2}$  of 40cyc@Ni-NMS sample.