**Supplementary Materials**

**Alloyed Cu/Si core-shell nanoflowers on the three-dimensional graphene foam as an anode for lithium-ion batteries**

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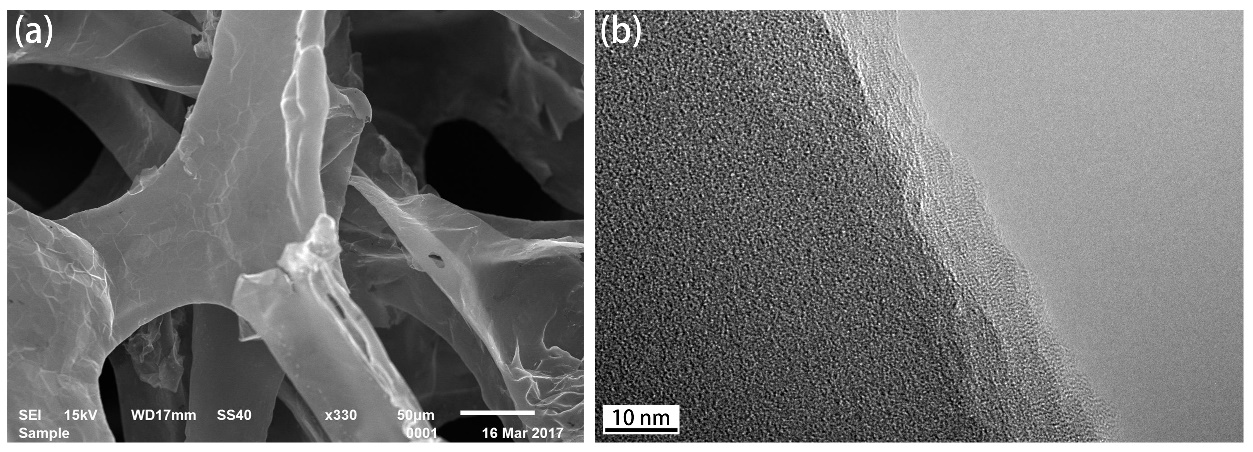


Figure S1 a) SEM characterization of bare as-prepared three-dimensional graphene foam (3DGF), b) TEM characterization of bare as-prepared 3DGF.

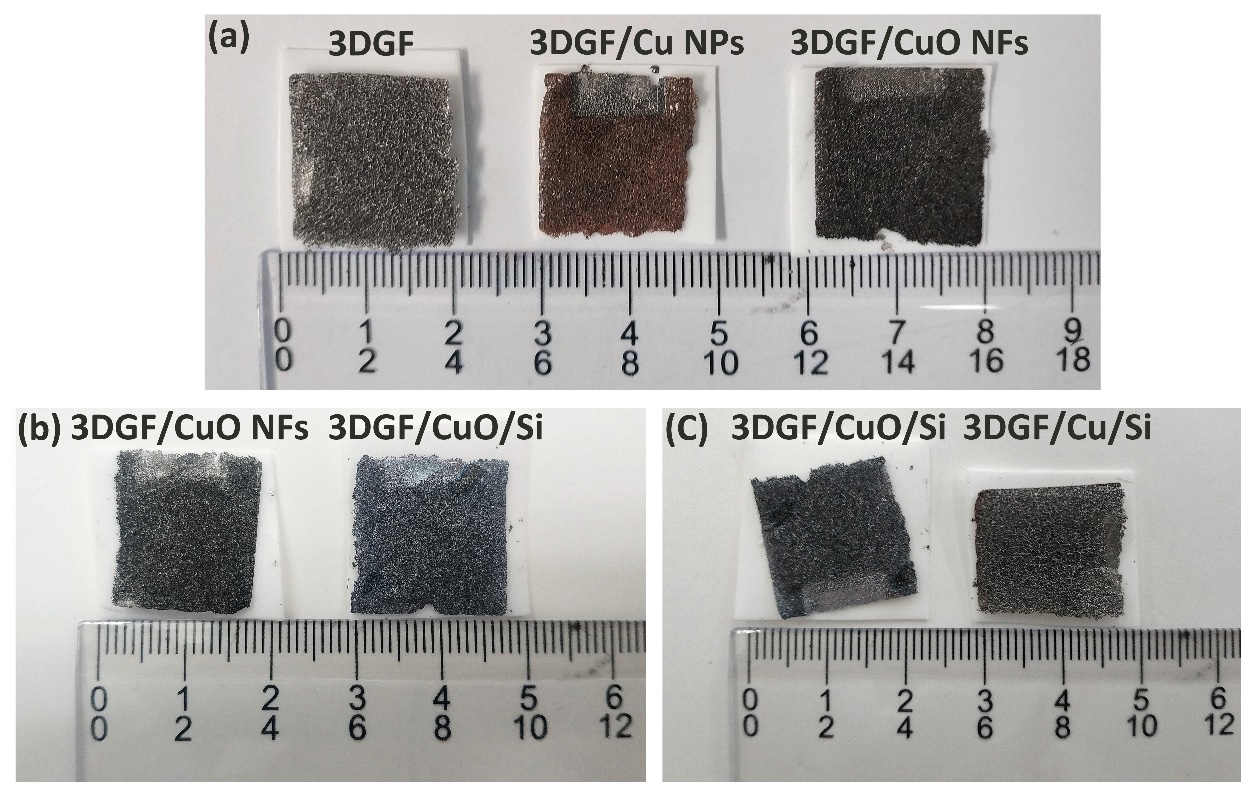


Figure S2 Optical images of (a) 3DGF, 3DGF/Cu nanoparticles (NPs), and 3DGF/CuO NFs samples; (b) 3DGF/CuO NFs and 3DGF/CuO/Si NFs samples; and (c) 3DGF/CuO/Si NFs and 3DGF/Cu/Si NFs samples.

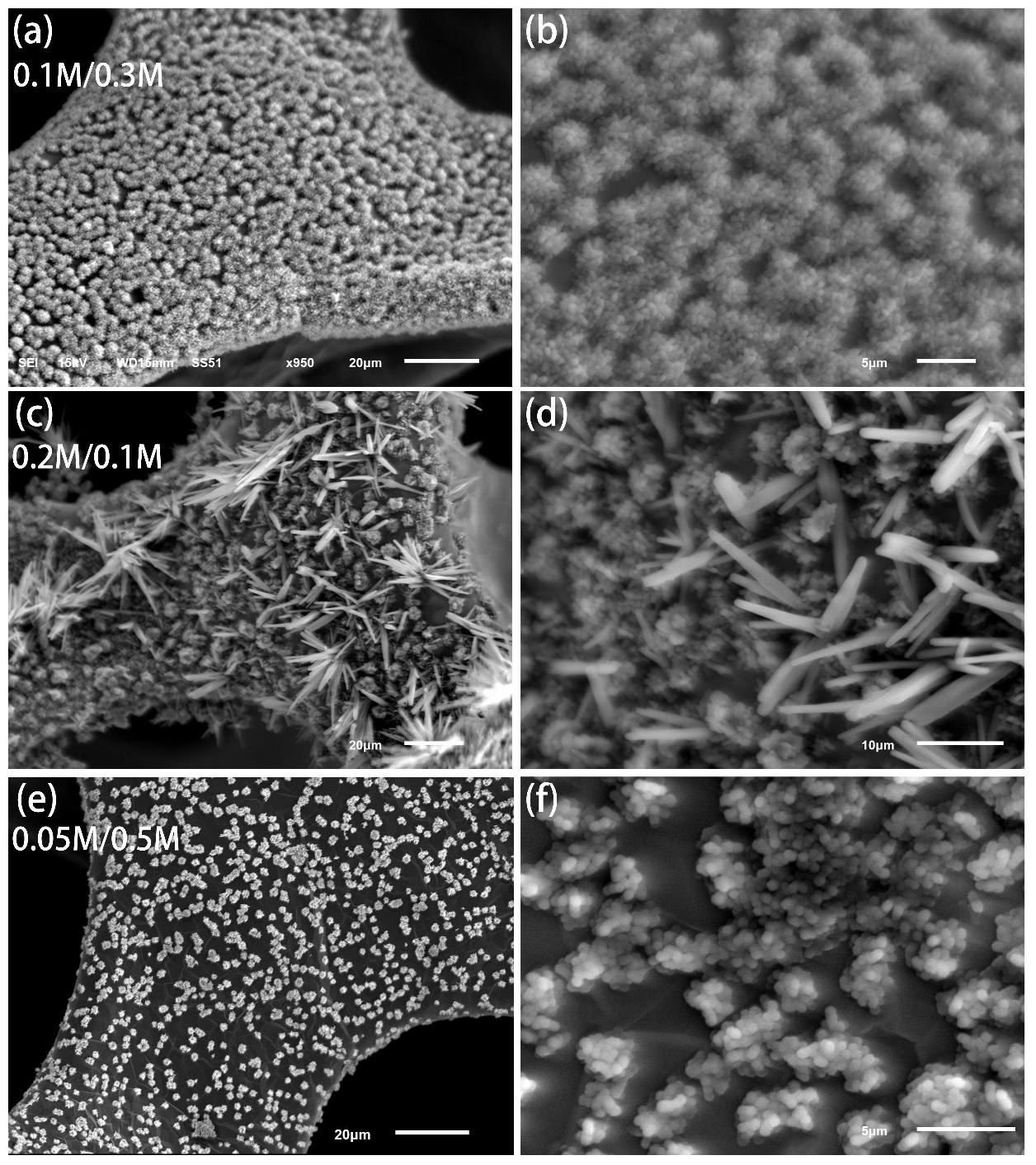


Figure S3 Typical SEM images of Cu/Si nanoflowers (NFs) grown on 3DGF with different distribution at different magnifications. The number inserted indicate the concentration of CuSO4 and H2SO4 sources in electrochemical deposition electrolyte.

Table S1 Analysis of Raman spectrum of as-prepared 3DGF

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | FWHM (cm-1) of G band | FWHM (cm-1) of 2D band | Intensity ratio G/2D | Number of layers |
| **Bare 3DGF**  **(this work)** | **17.1** | **71.3** | **0.56** | ~4 |
| Ref. [1] | 13.0 | 60.4 | 0.59 | 3 |
| 13.4 | 63.0 | 0.48 | 4 |
| 12.6 | 65.0 | 0.41 | 5 |

**References**

[1] D. Yoon, H. Moon, H. Cheong, J. Choi, J. Choi, B. Park, Journal of the Korean Physical Society, 55 (2009) 1299-1303.