Supplementary information (ESI)

A facile room temperature chemical transformation approach for binder-free thin film formation of Ag_2Te and lithiation/delithiation chemistry of the film

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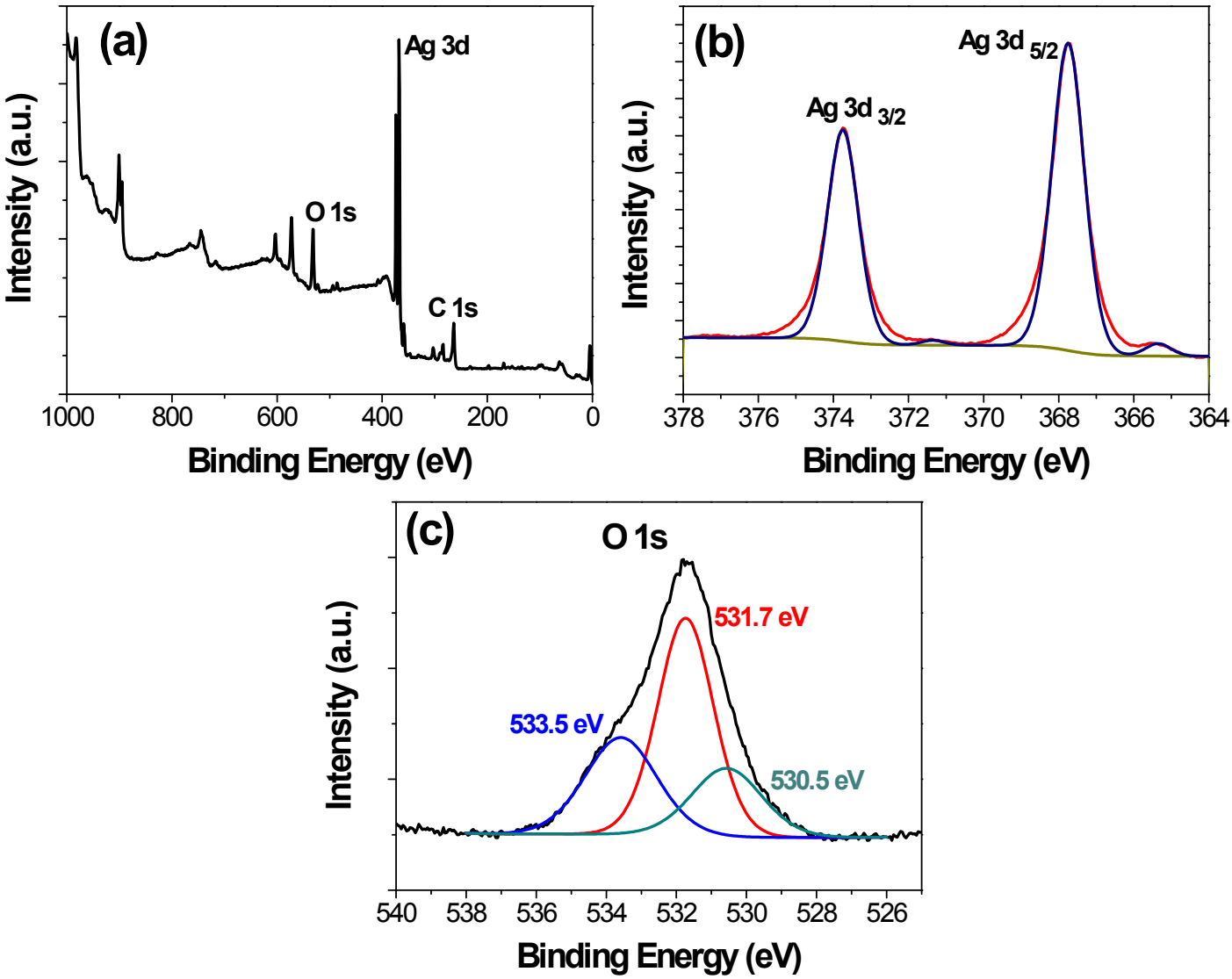

Fig. S1. XPS spectra of Ag/Ag_xO film. (a) Survey spectrum, (b) Ag 3d core level spectrum, and (c) O 1s core level spectrum.

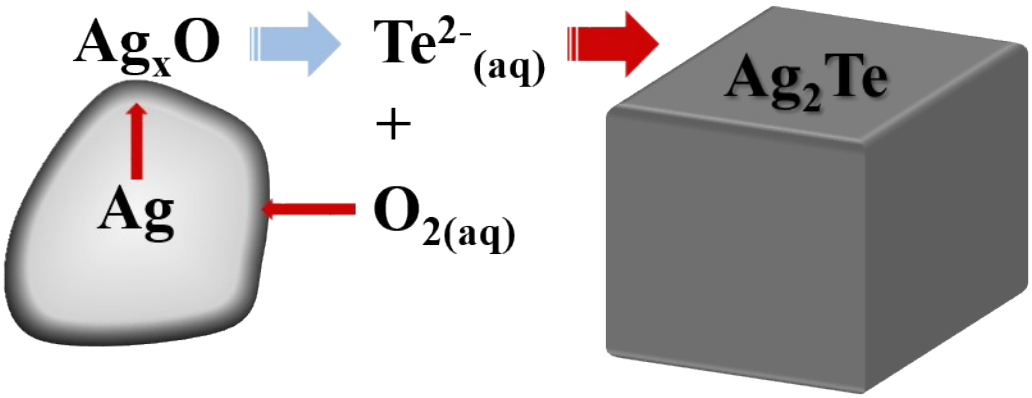

Fig. S2. Schematic diagram showing the surface oxidation of Ag particles followed by chemical transformation into Ag_2Te in presence of aqueous Te-precursor solution at room temperature.

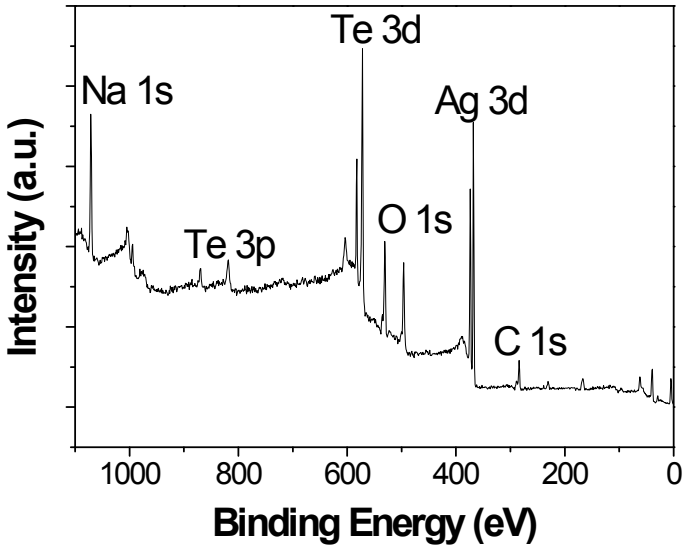

Fig. S3. XPS survey spectrum of chemically transformed Ag_2Te film. The Na signal at 1071.12 eV is attributed to residual NaOH.

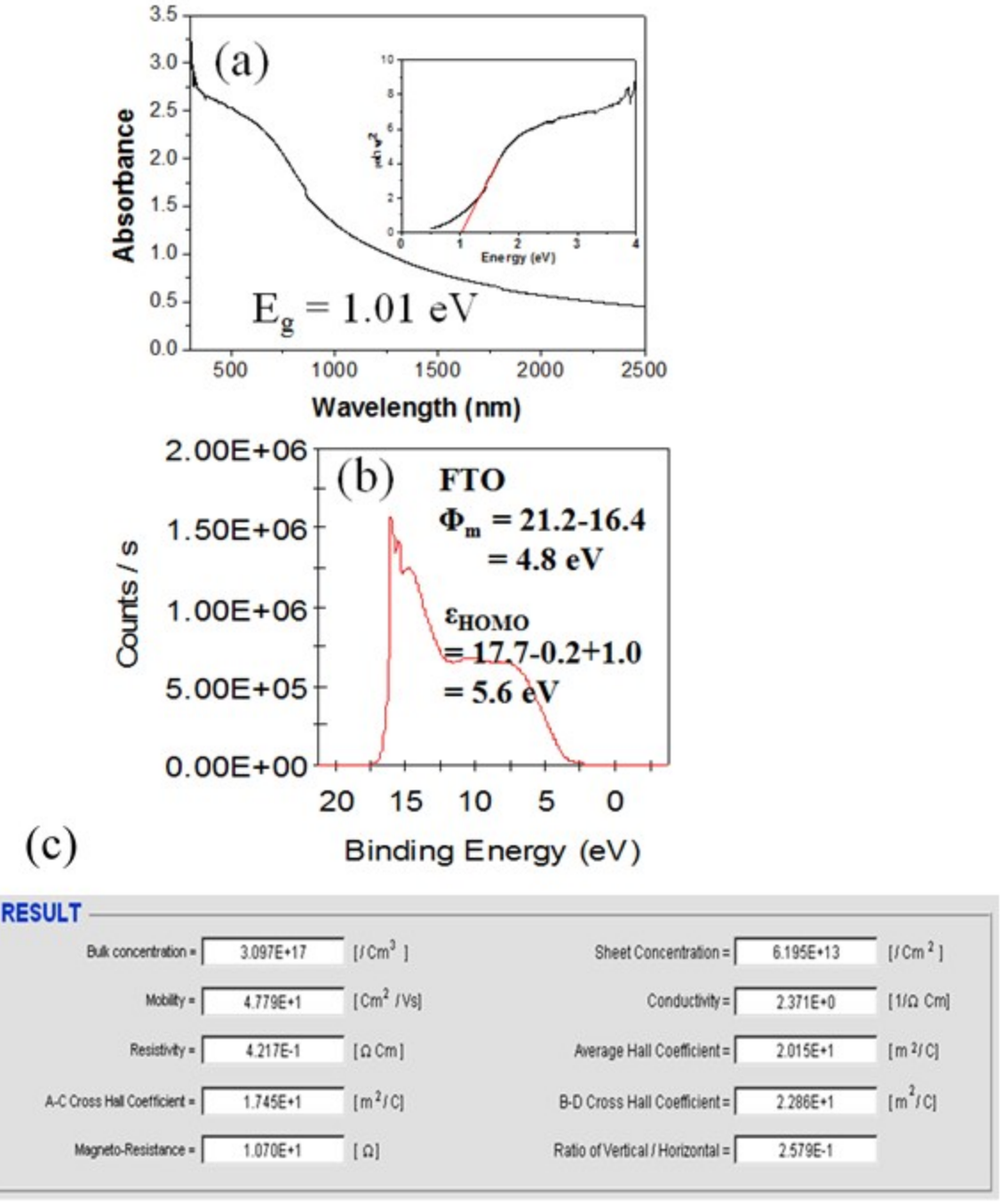

Fig. S4. (a) UV-vis absorption spectrum of Ag_2Te film and inset shows the Tauc plot for estimation of optical gap. (b) UPS spectrum for estimation of valance band edge position of Ag_2Te film. (c) Various parameters obtained from Hall measurement of the Ag_2Te film.

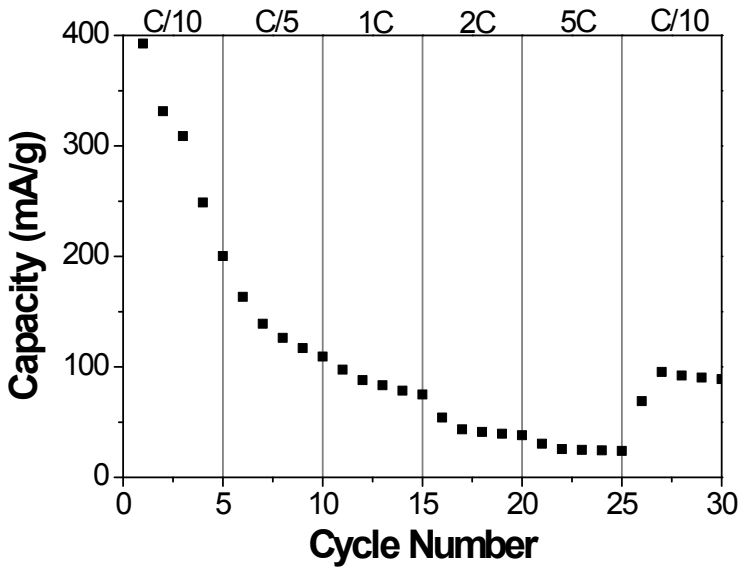

Fig. S5 Charge–discharge curves of the Li/LiPF6/Ag_2Te battery at various current densities.