Improving Interfacial Stability of Sulfide-based Lithium-Ion-Conducting Solid Electrolytes with ALD

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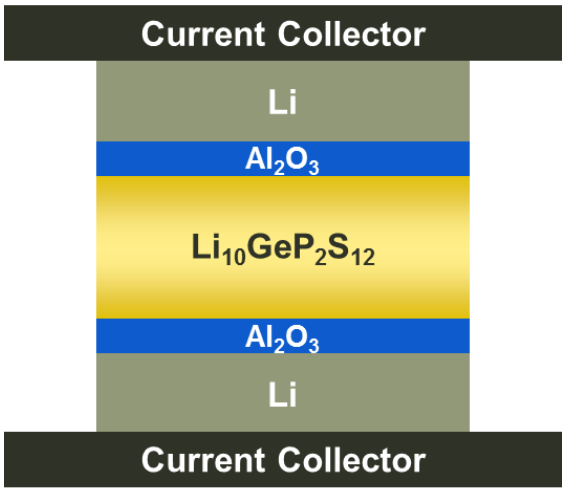

Figure 1. Cell composed of symmetric Li electrodes with $Li_{10}GeP_2S_{12}$ solid electrolyte. The Al_2O_3 ALD coating was applied to the $Li_{10}GeP_2S_{12}$ solid electrolyte prior to the assembly of the cell.

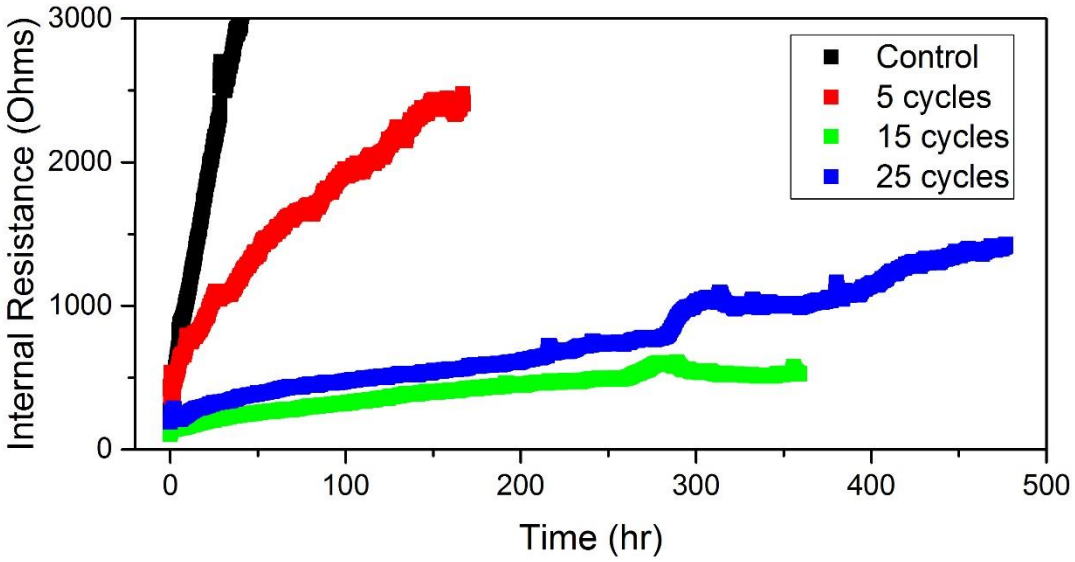

Figure 2. Chemical stability of interface between $Li_{10}GeP_2S_{12}$ and Li metal as measured by internal resistance of Li/$Li_{10}GeP_2S_{12}$/Li cell at 60°C. $Li_{10}GeP_2S_{12}$ electrolyte coated with 5, 15, and 25 cycles of Al_2O_3 ALD had greater interfacial stability than uncoated $Li_{10}GeP_2S_{12}$ electrolyte.