Supplementary Information

An ultrafast process for fabrication of Li metal–inorganic solid electrolyte interface

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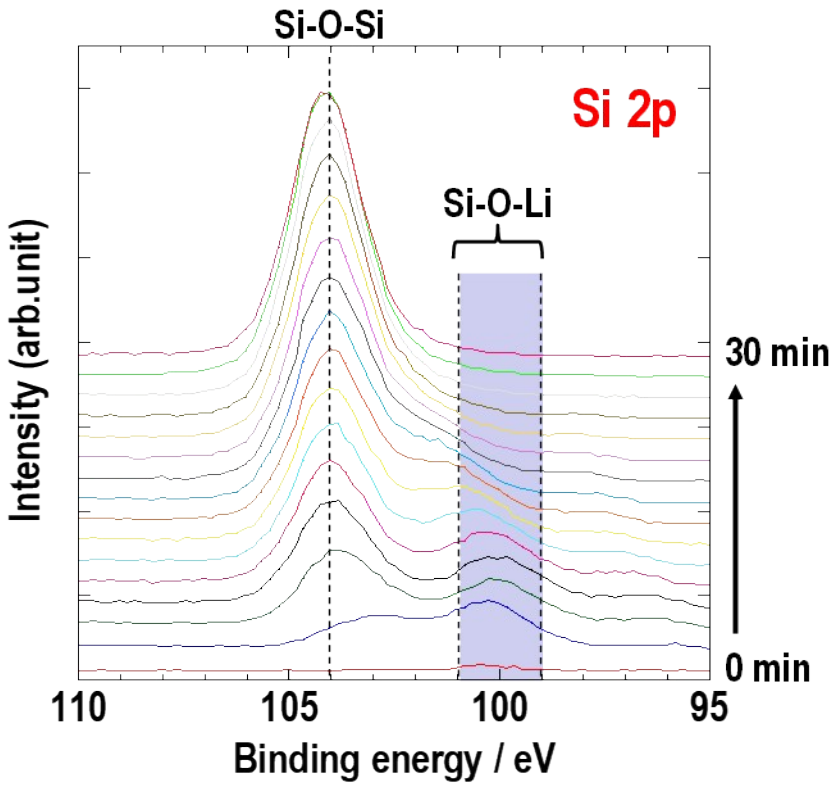

Fig. S1.
Si 2p XPS spectra during sputtering for 30 min.

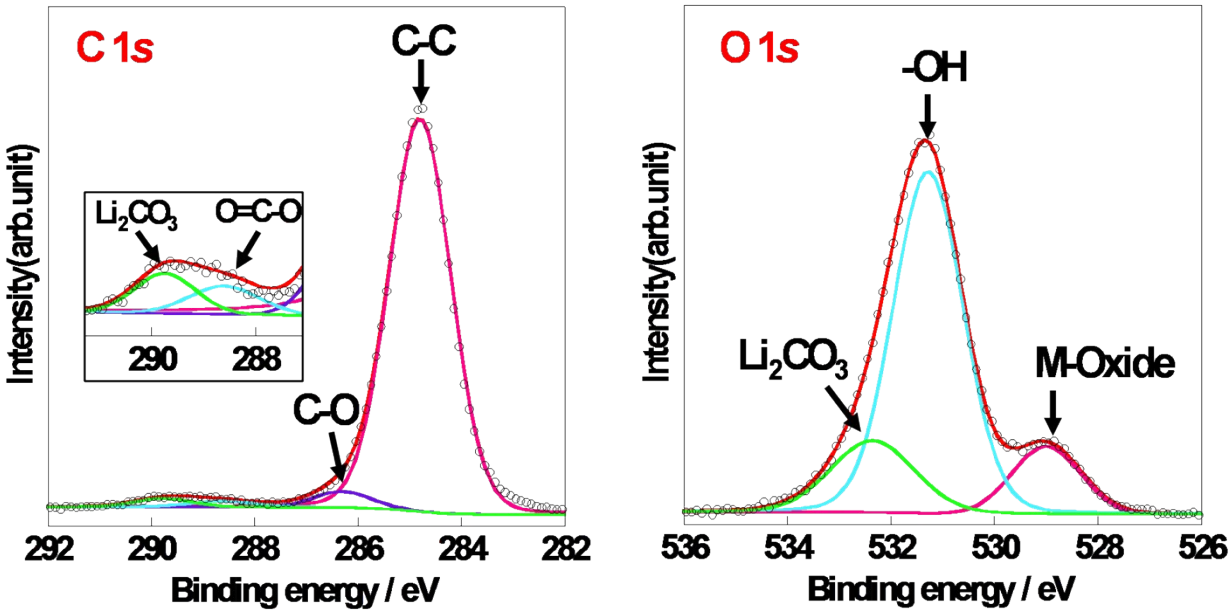

Fig. S2.

C 1*s* and O 1*s* XPS spectra of the surface of LLZ after polishing.

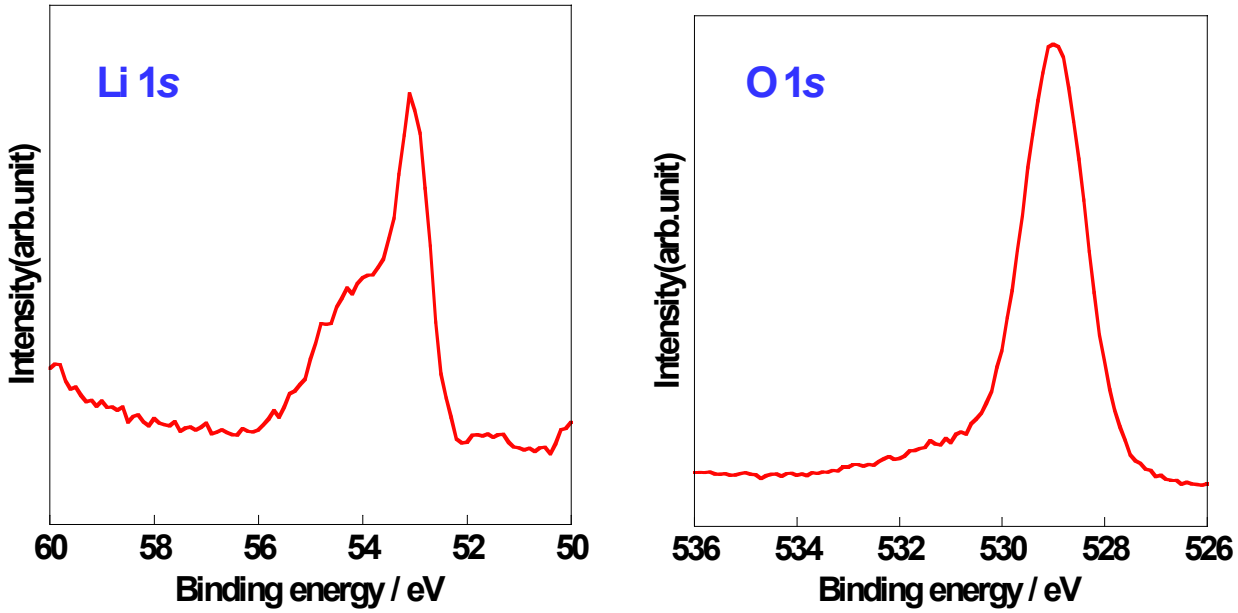

Fig. S3.

Li 1*s* and O 1*s* XPS spectra of Li–LLZ interface constructed by the UFW method.

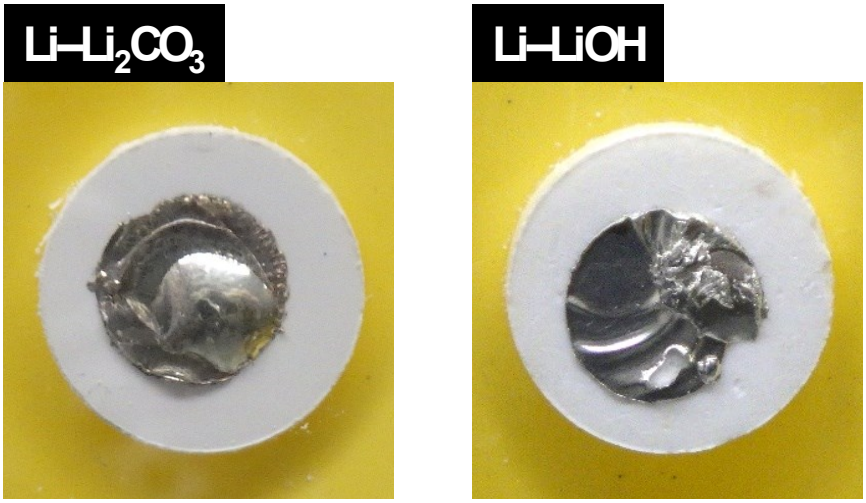

Fig. S4.
Photographs of Li–Li_2CO_3 and Li–LiOH prepared by the UFW method.

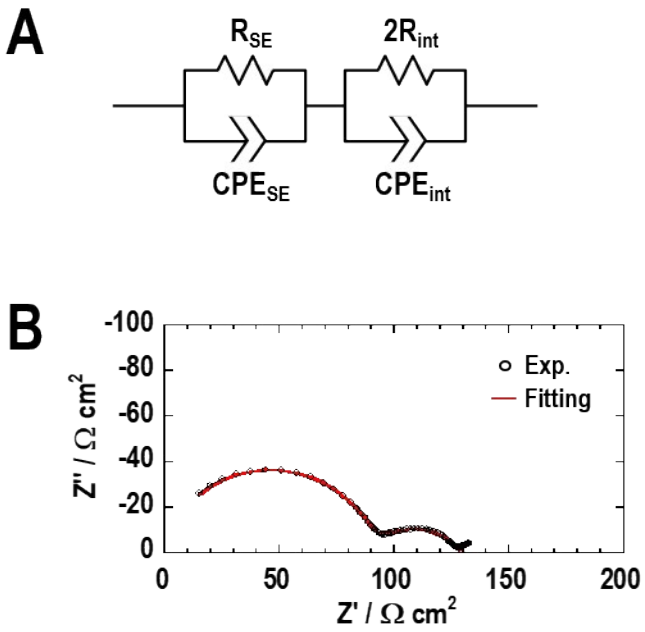

Fig. S5.

Impedance analysis of Li|LLZ|Li symmetrical cell. (A) Equivalent circuit model used for fitting. (B) Impedance plot and fitting result.

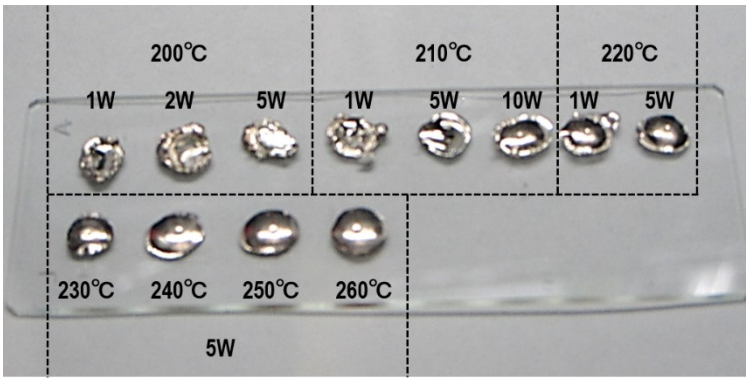

Fig. S6.

Li spots on the glass slide joined by the UFW method under various conditions.

Movie S1.
Observation of joining of melt lithium with glass substrate without ultrasonic irradiation.

Movie S2.
Observation of joining of melt lithium with glass substrate with ultrasonic irradiation.