

Figure S1. Nyquist diagrams (a), (c), (e) and Bode diagrams (b), (d), (f) of EIS spectra for SUS304 subjected to pre-immersion processing for different times: (a),(b) No pre-immersion processing; (c),(d) after immersion in 1 wt% H_2SO_4 solution for 5 min; and (e),(f) after immersion in 1 wt% Na_2CO_3 solution. The circular plots indicate the phase difference, while the triangular plots indicate $|Z|$.

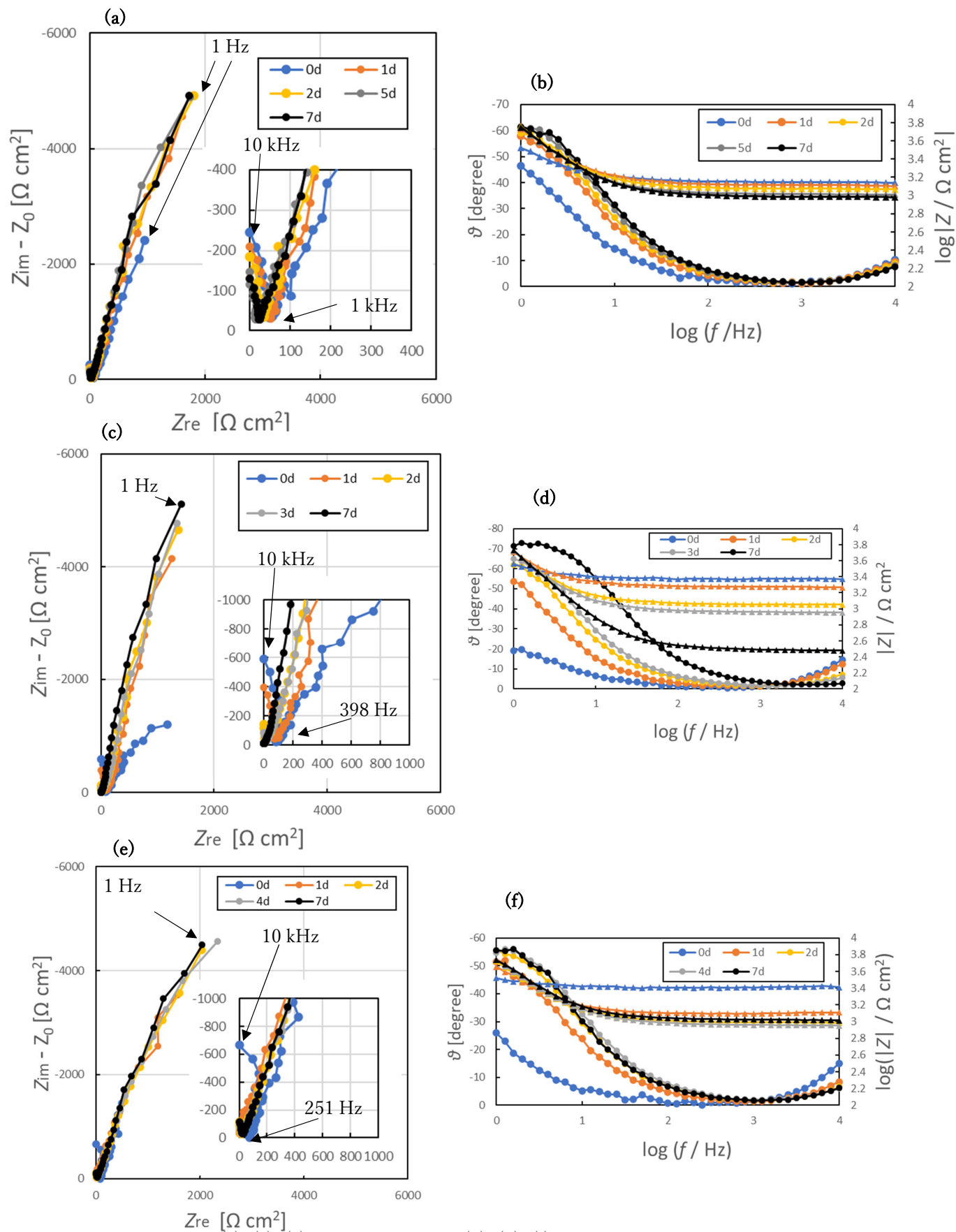


Figure S2. Nyquist diagrams (a), (c), (e) and Bode diagrams (b), (d), (f) of EIS spectra for SUS316 subjected to pre-immersion processing for different times: (a),(b) No pre-immersion processing; (c),(d) after immersion in 1 wt% H_2SO_4 solution for 5 min; and (e),(f) after immersion in 1 wt% Na_2CO_3 solution. The circular plots indicate the phase difference, while the triangular plots indicate $|Z|$.

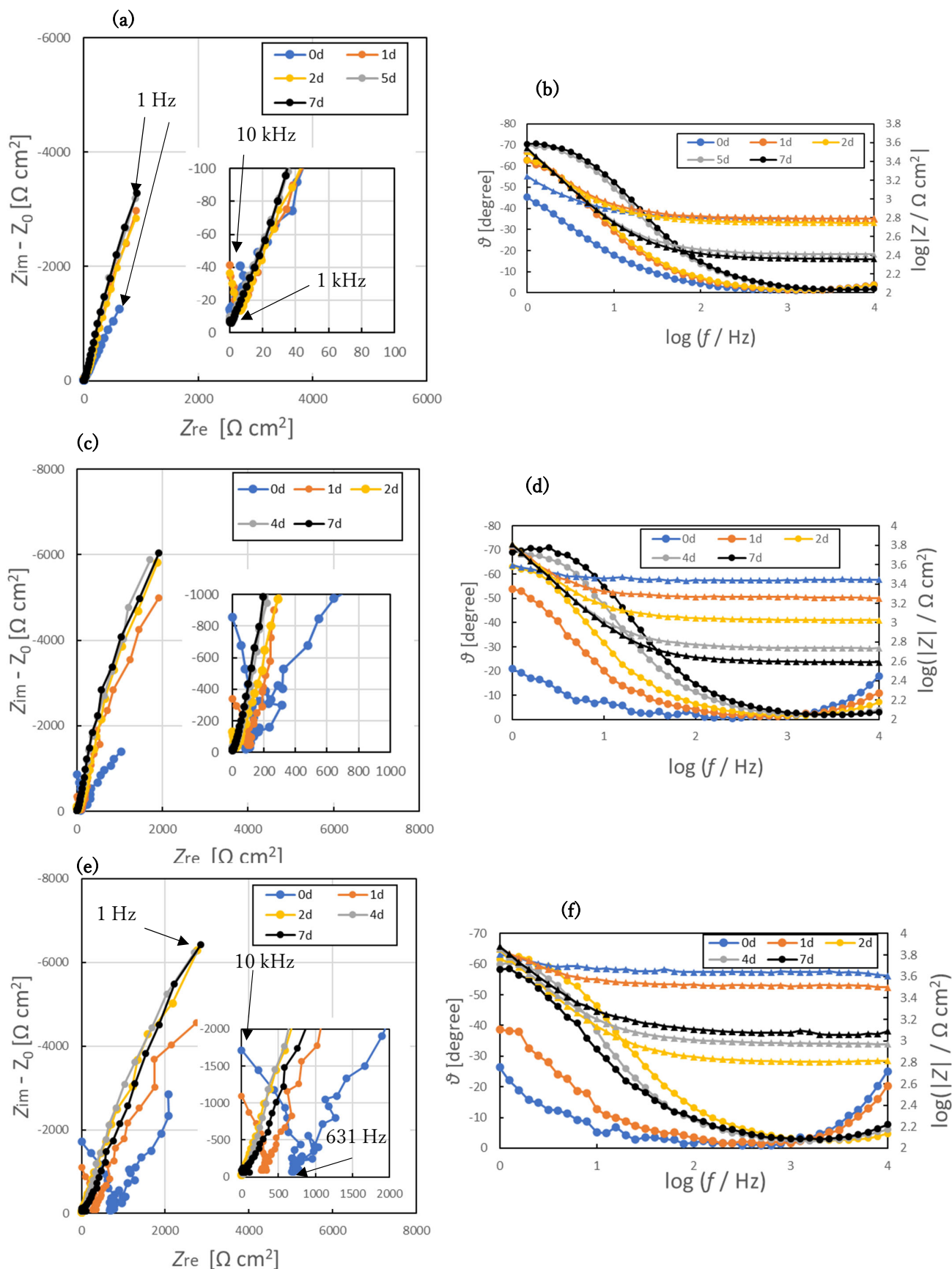


Figure S3. Nyquist diagrams (a), (c), (e) and Bode diagrams (b), (d), (f) of EIS spectra for SUS316L subjected to pre-immersion processing for different times: (a),(b) No pre-immersion processing; (c),(d) after immersion in 1 wt% H_2SO_4 solution for 5 min; and (e),(f) after immersion in 1 wt% Na_2CO_3 solution. The circular plots indicate the phase difference, while the triangular plots indicate $|Z|$.

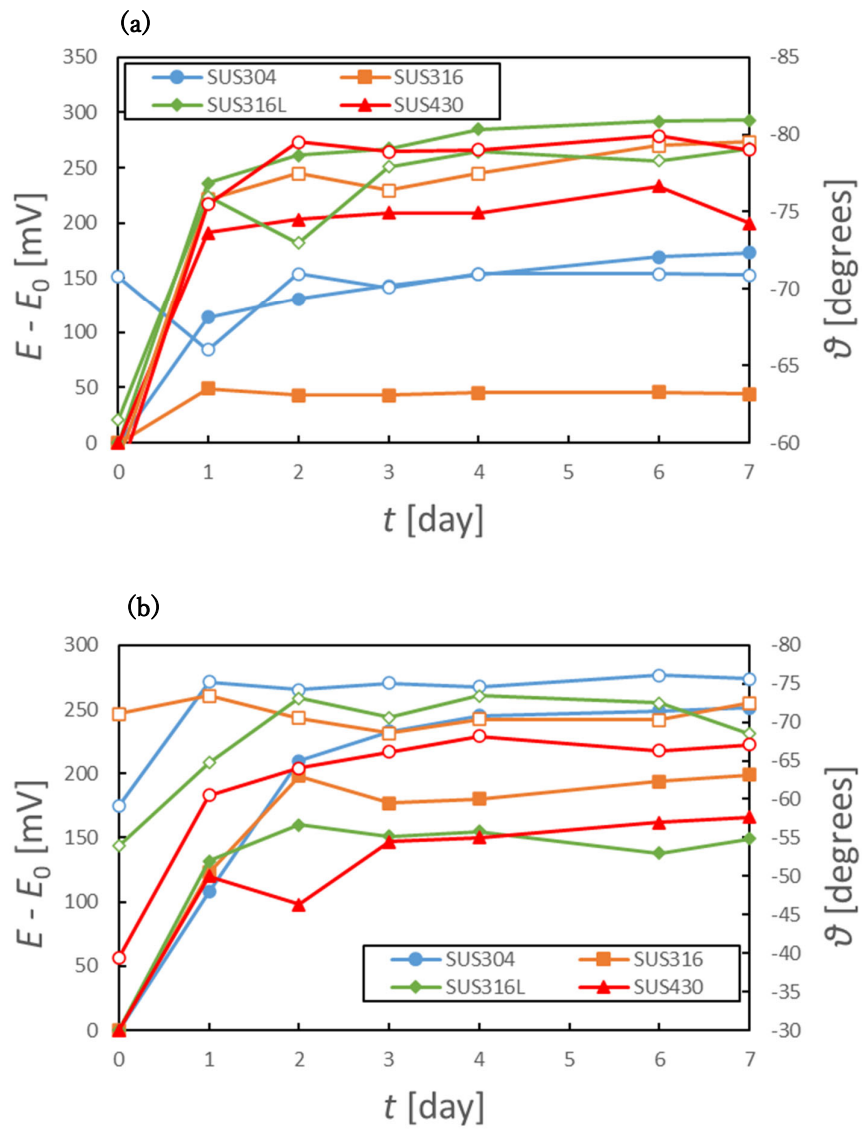


Figure S4. Relationships between potential changes and minimum phase differences of each SS in sub-tap water. (a) After immersion in 1 wt% H_2SO_4 solution for 5 min, (b) after immersion 1 wt% H_2SO_4 solution for 5 min. The filled plots correspond to the potential, and the hollow plots correspond to the phase.

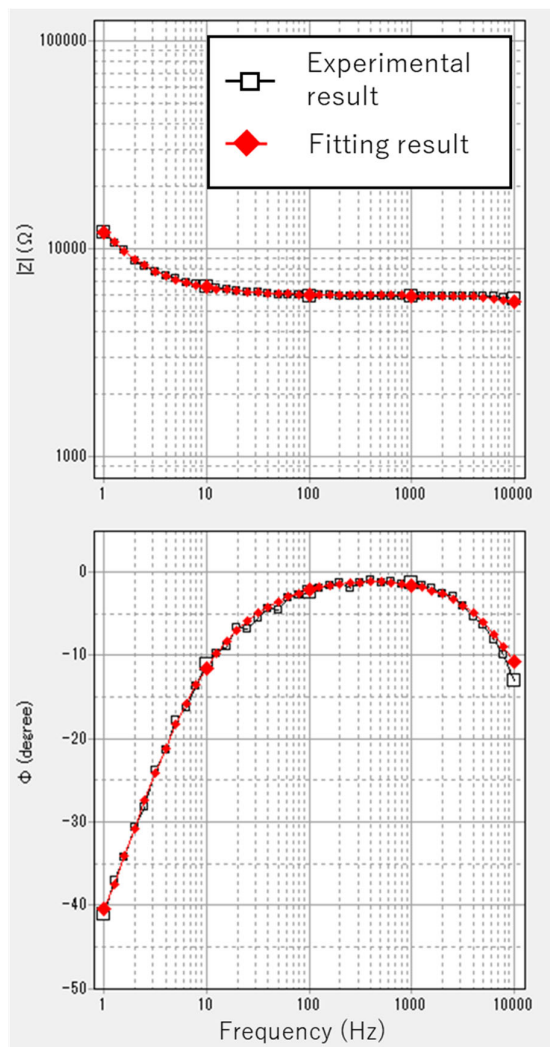
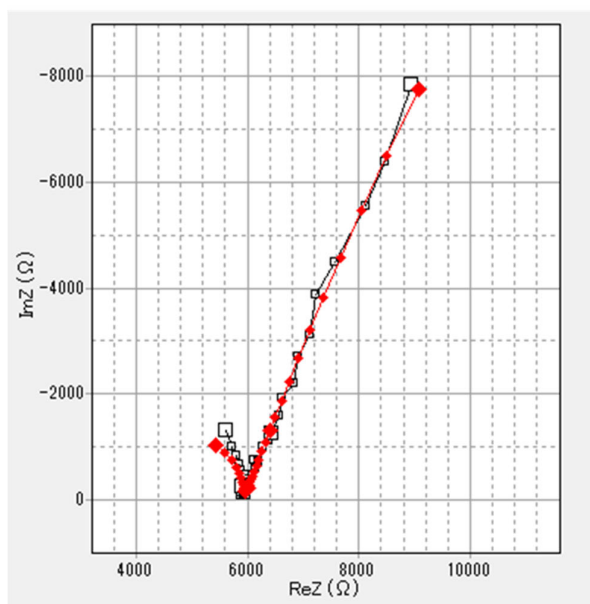


Figure S5. Experimental and fitted Nyquist and Bode diagram for polished (no pre-immersion) SUS304 at 0 day.