Supporting Information with New Data for "Chronopotentiometric Approach in Scanning Electrochemical Cell Microscopy: Minimizing Surface Change upon Landing"

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Contents

CP Approach with Different Tip Sizes

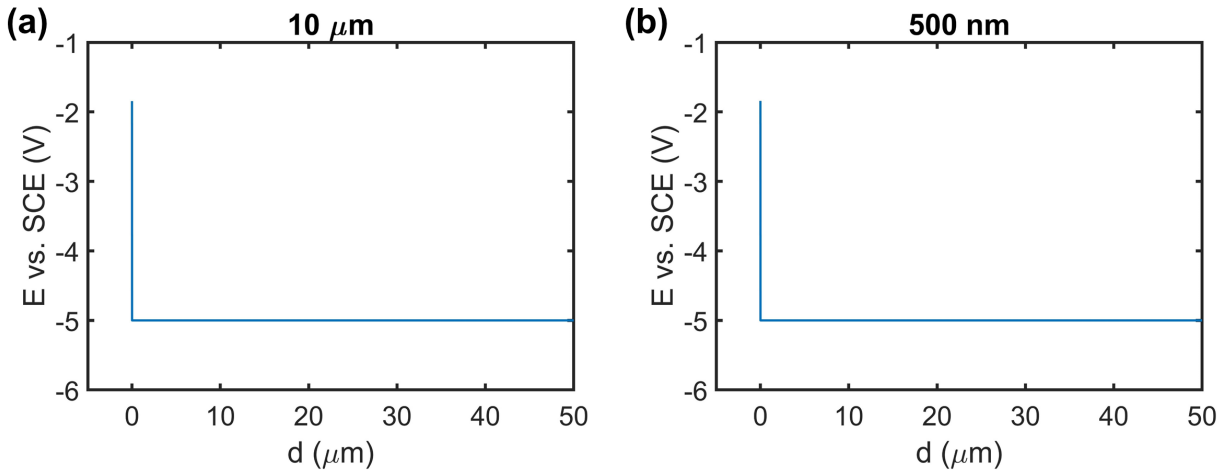

Figure S1: The CP approach was tested with two other tip sizes (10 m and 500 nm in diameter) at the bandwidth of 1 kHz. The approach curves are shown in Figure S1a and S1b.

Bulk OCP Measurement of Pure Al

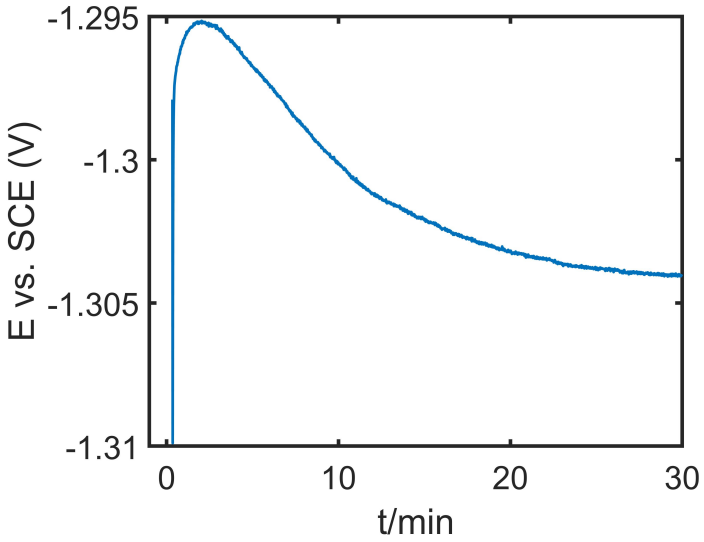

Figure S2: Bulk OCP measurement of pure Al sample in 3.5 wt% NaCl solution shows the OCP value reaches at -1.3 V vs. SCE in 30 min.

SECCM-PDP Curve with Pitting of Pure Al

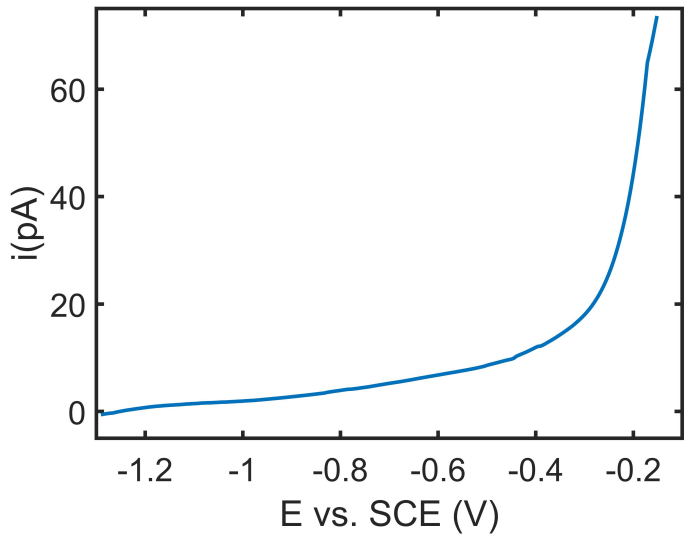

Figure S3: In SECCM experiment with CP approach method on pure Al, when the potential is scanned to -0.15 V vs. SCE, a sharp increase in current, indicative of pitting, becomes evident.

SECCM-PDP Curve with Pitting of AA7075

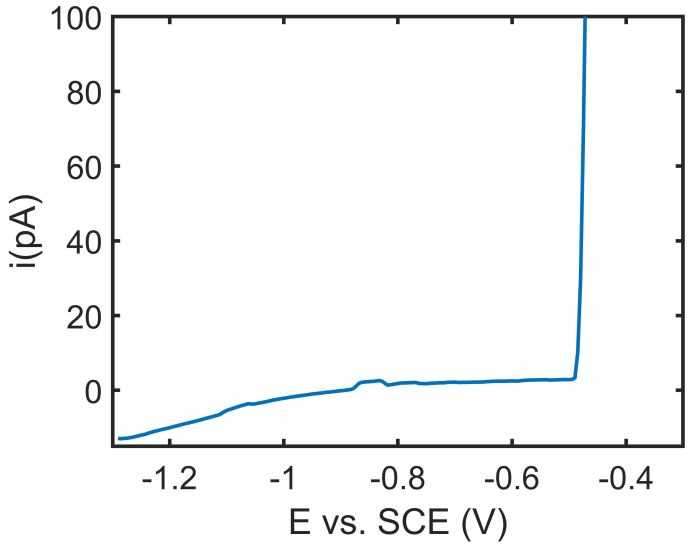

Figure S4: When the AA7075 surface is used for SECCM experiment immediately after polishing, the oxide layer remains thin, resulting in stable pitting corrosion.