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#### Supporting information for

# Quantifying the pH shift induced by

## selective anodic electrochemical reactions in

### ion concentration polarization phenomenon

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#### Note 1. SEM images of LEEA and SEEA Ag electrodes





(C) EDS results after 60min operation

wt%	LEEA	SEEA
С	18.21	26.35
Ο	3.58	7.76
Na	0.43	0.00
Cl	21.26	14.22
Ag	56.53	51.67
Total	100.00	100.00

**SI Figure 1.** The surface morphology of (a) LEEA and (b) SEEA after 60 minute operation. FE-SEM (HITACHI S-4800) was used to image surface morphology. (c) The surface atomic composition of LEEA and SEEA. Energy Dispersive X-ray Spectroscopy (EDS) was used to analyze surface composition inside white box of the SEM image. While chlorine is discovered in both LEEA and SEEA, there is more chlorine in LEEA, meaning anodic reaction #1 is more dominant in LEEA than one in SEEA.