

Text S4. DEMS measurement.

Ar is bubbled into the electrolyte to saturation before the Differential Electrochemical Mass Spectrometry (DEMS) test. The LSV test was conducted at 0.3 to -0.7V vs. RHE, during which the corresponding quality signal could be detected. After the electrochemical test was over and the mass signal returned to baseline, the next cycle was started using the same test conditions to avoid accidental error during DEMS measurements. The measurement was ended after several cycles.