

Supporting Information

Formation of a Silicon Layer by Electroreduction of SiO₂ Nanoparticles in CaCl₂ Molten Salt

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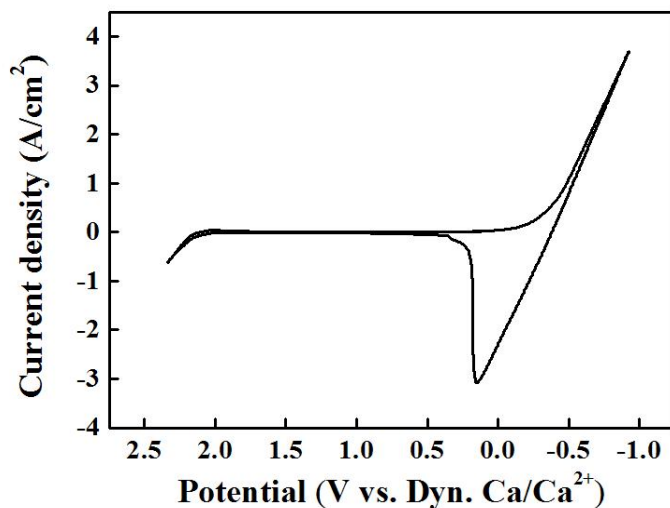


Figure S1. A cyclic voltammogram on a Mo electrode (1 mm dia. wire, 0.22 cm²) at a scan rate of 100 mV/s with 10 mA/cm² of current density passing on dynamic reference electrode (1 mm dia. Mo wire, 0.22 cm²) in 850 °C CaCl₂ melt.

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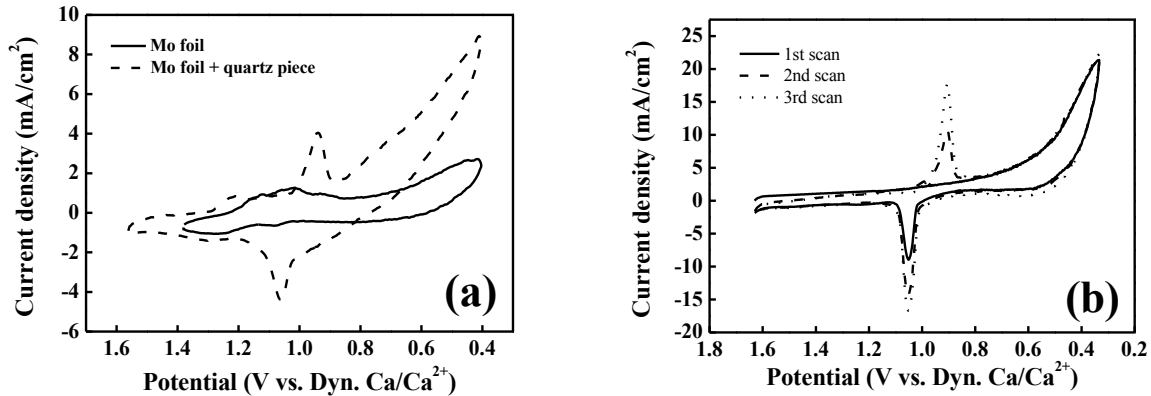


Figure S2. Cyclic voltammograms on a Mo electrode (a) contacted with (0.3 cm wide and 0.5 cm long) quartz piece and (b) with 0.2 M Na_2SiO_3 in 850 °C CaCl_2 melt.

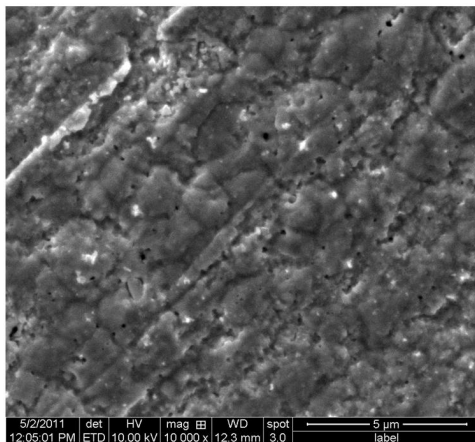


Figure S3. A SEM image of Si deposited on Mo grown in 850 °C CaCl_2 melt containing 0.2 M Na_2SiO_3 for 500 s. EDS analyses show that the Si film on Mo is composed of Si 48 at%, O 8 at%, C 19 at%, Na <1 at%, and Mo 24 at%.

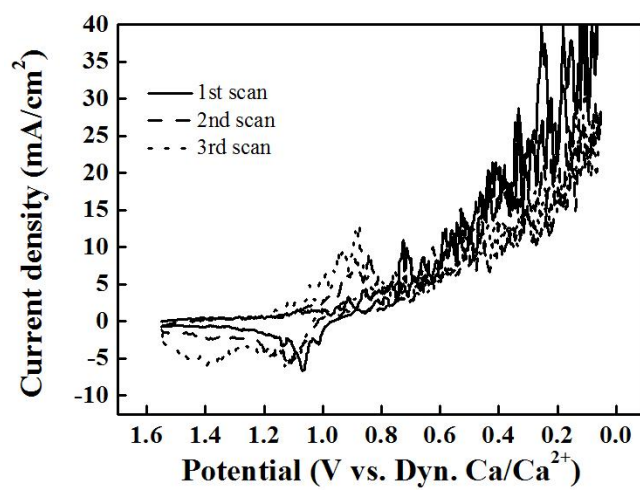


Figure S4. Cyclic voltammograms on a Mo foil working electrode (0.3 cm width, 0.42 cm²) at a scan rate of 20 mV/s with SiCl₄ gas mixed with Ar carrier gas which is transferred directly to 850 °C CaCl₂ melt.