# Tuning Sample Length Effect on Mass Transport in Current Carrying Cu-Si Thin Film Systems via Interfacial Engineering

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## Supplemental Material

(a) (b)

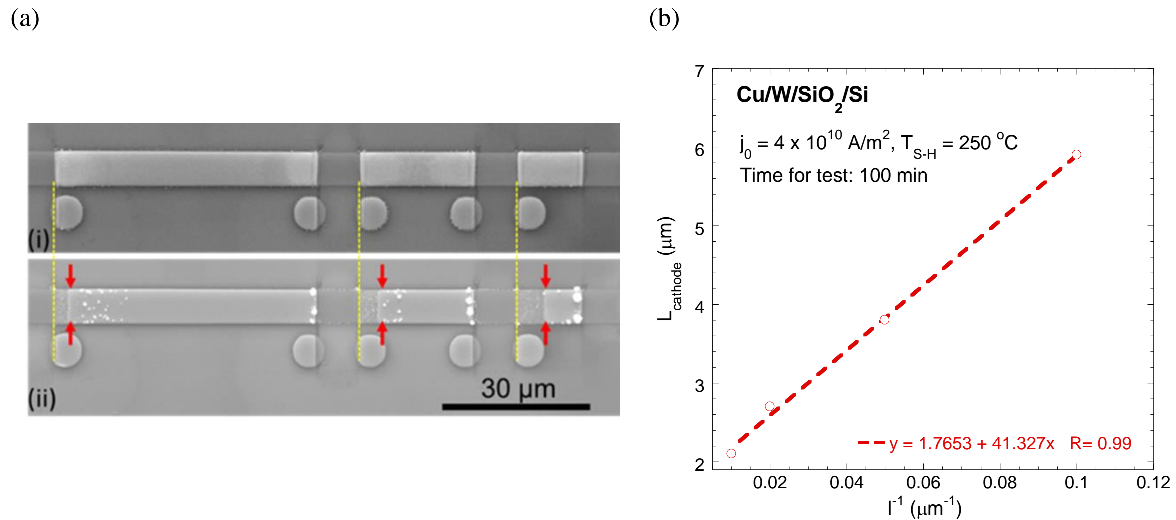


Fig. S1: (a) SEM micrograph of a Cu-W sample comprising 3 stripes and (b) variation of extent of the depletion zone at the cathode, $L_{cathode}$, as function of the inverse of the sample length, $l^{-1}$. Both of these figures confirm existence of *inverse Blech length phenomenon* in Cu-W system. Electromigration test was performed for 100 min by passing an electric current of density of $4 \times 10^{10}$ A/m$^2$ while maintaining a substrate temperature of 250 °C. (Figure is adopted from the ref 6. Permission will be taken from APS once ref. 6 is published)

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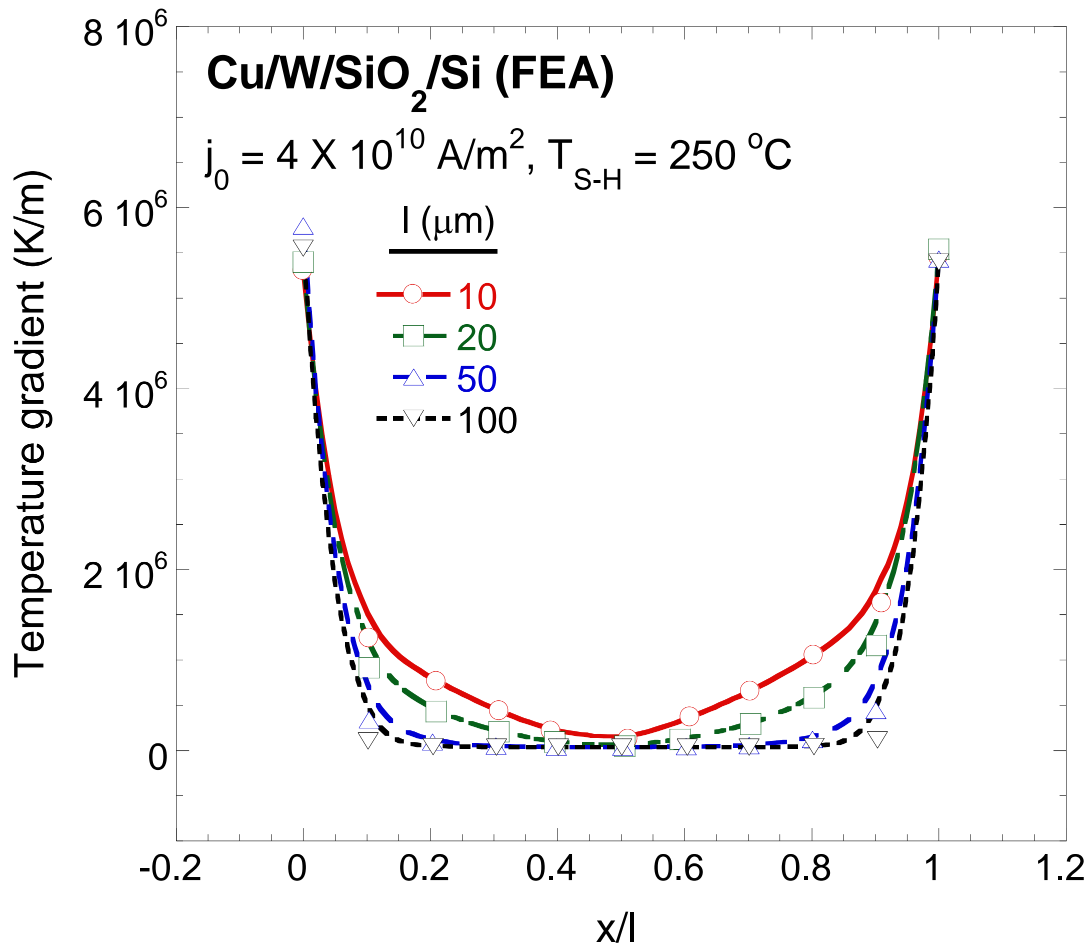


Fig. S2: Variation of the temperature gradient in Cu films segments in Cu-W sample as function of the normalized distance. The x-axis is normalized by dividing a distance by the total length of the sample. (Figure is adopted from the ref 6. Permission will be taken from APS once ref. 6 is published)