Electronic Supplementary Information

Confining calcium oxalate crystal's growth in carbonated apatite-coated microfluidic channel to better understand the role of Randall's plaque in kidney stone formation

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Table 1: Chemical composition in Na^+, K^+, Mg^{2+}, Ca^{2+}, Cl^-, HCO_3^-, HPO_4^{2-} and SO_4^{2-} ions of 1.5 SBF solution buffered at pH 7.4 with 10 mM Tris-HCl.

Ions	Na^+	K^+	Mg^{2+}	Ca^{2+}	Cl^-	HCO_3^-	HPO_4^{2-}	SO_4^{2-}
ion concentrations (mmol/L)	213.0	7.5	2.3	3.8	221.7	6.3	1.5	0.8

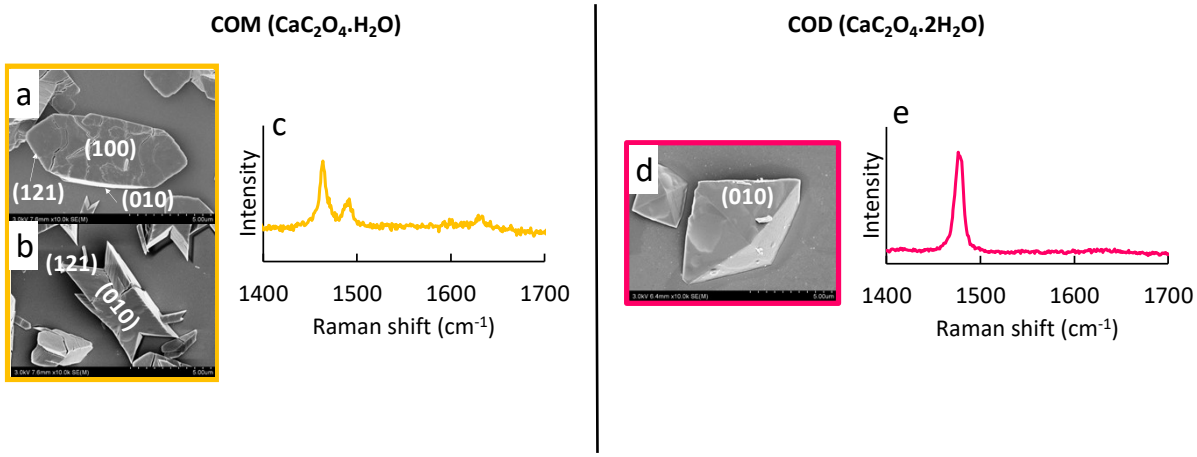


Fig. S1: a,b) SEM-FEG images of COM crystals and d) COD crystals with their respective Raman spectra

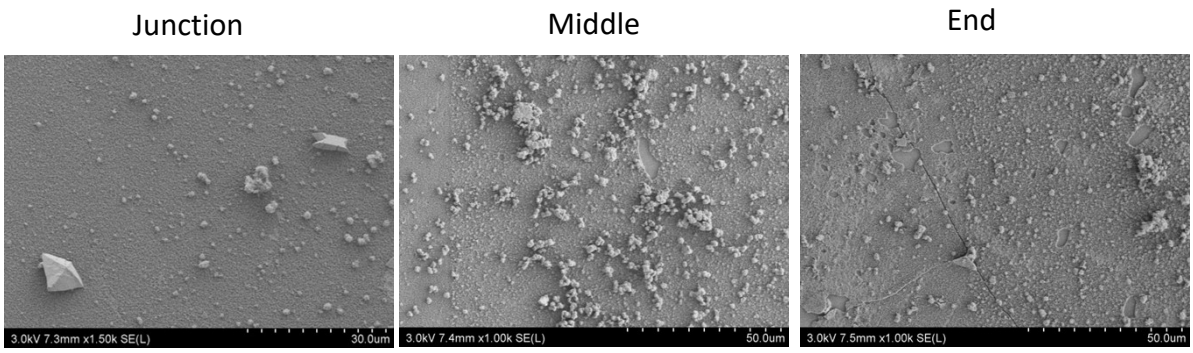


Fig. S2: SEM images of CHA coating at different positions in the channel after perfusion of oxalate and calcium solutions for 2h (SB)

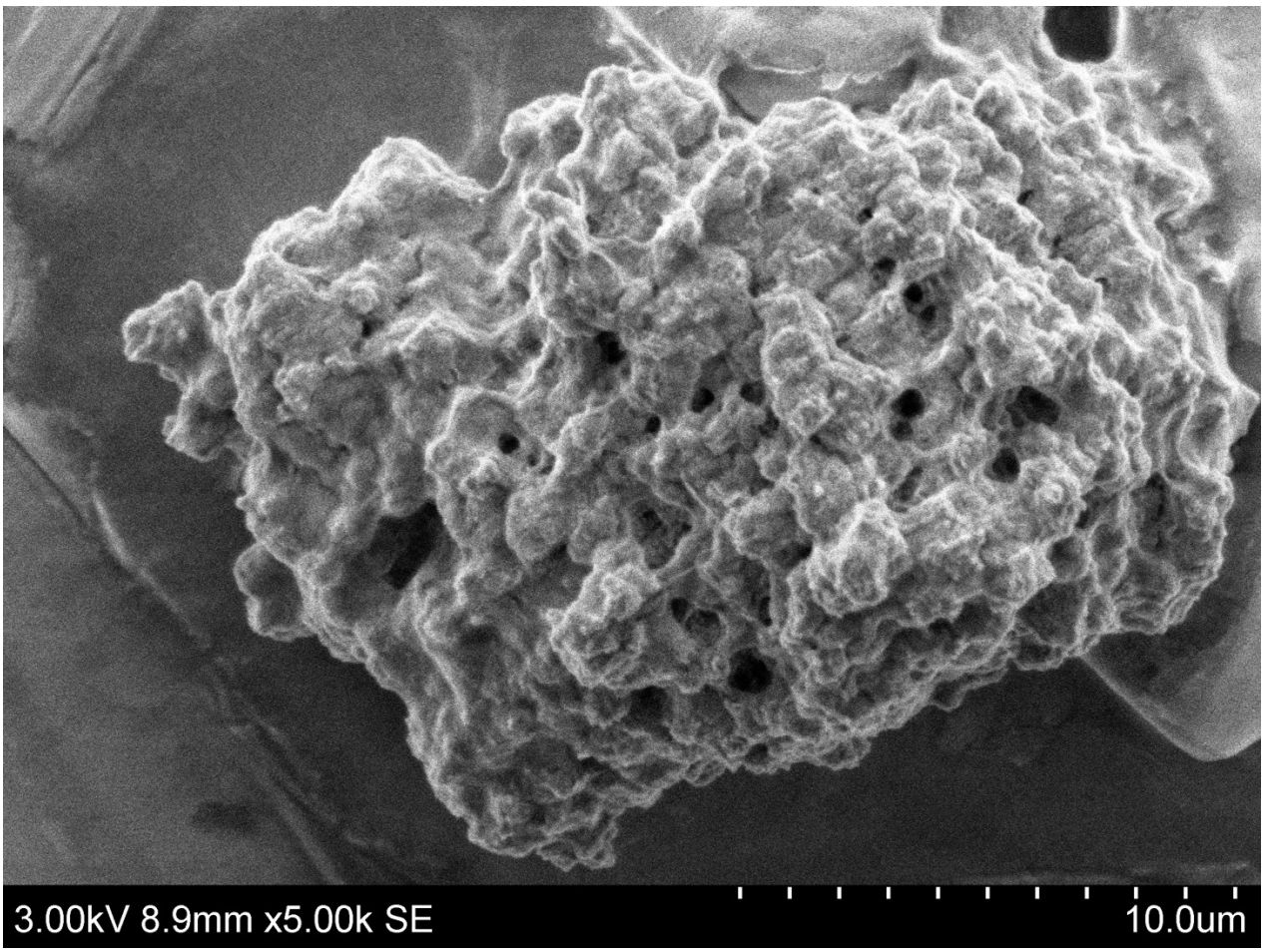
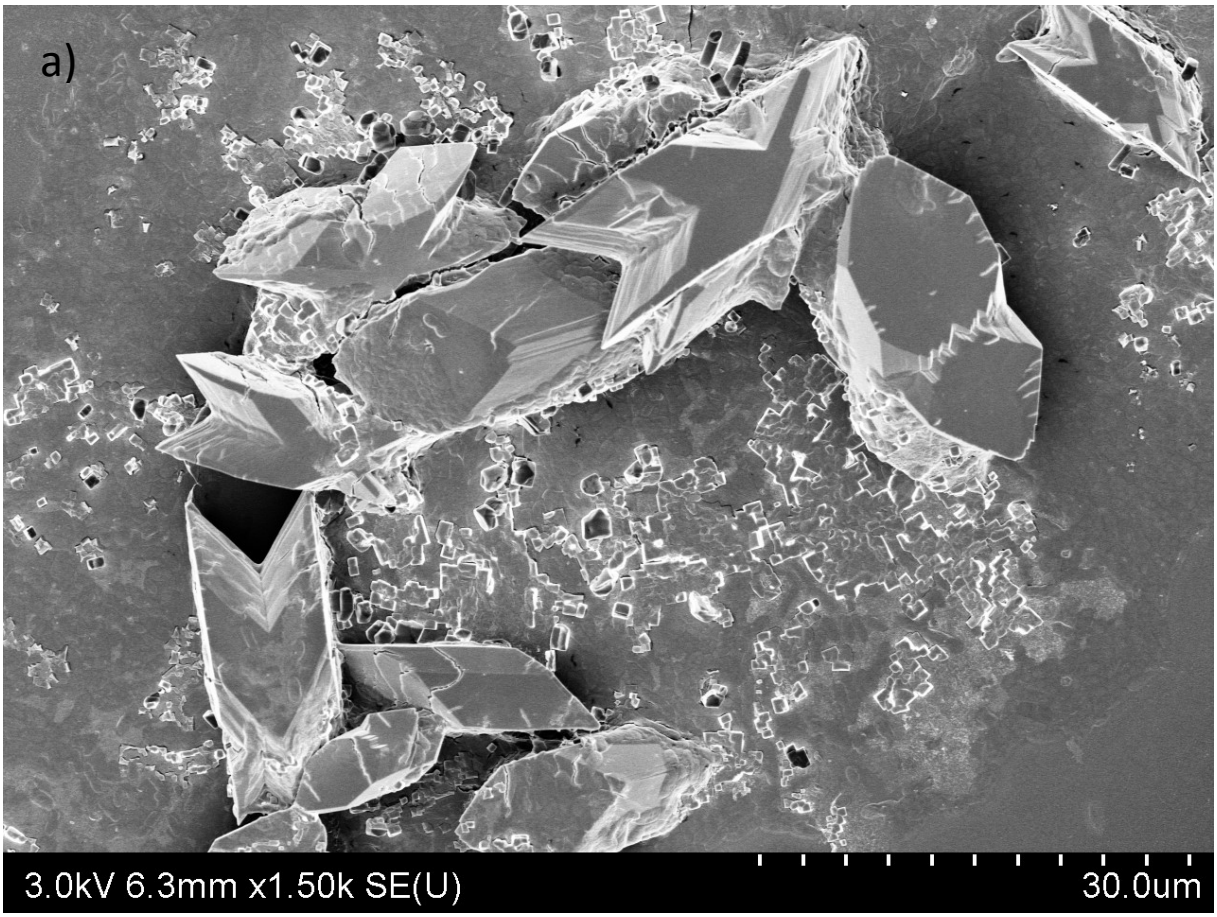
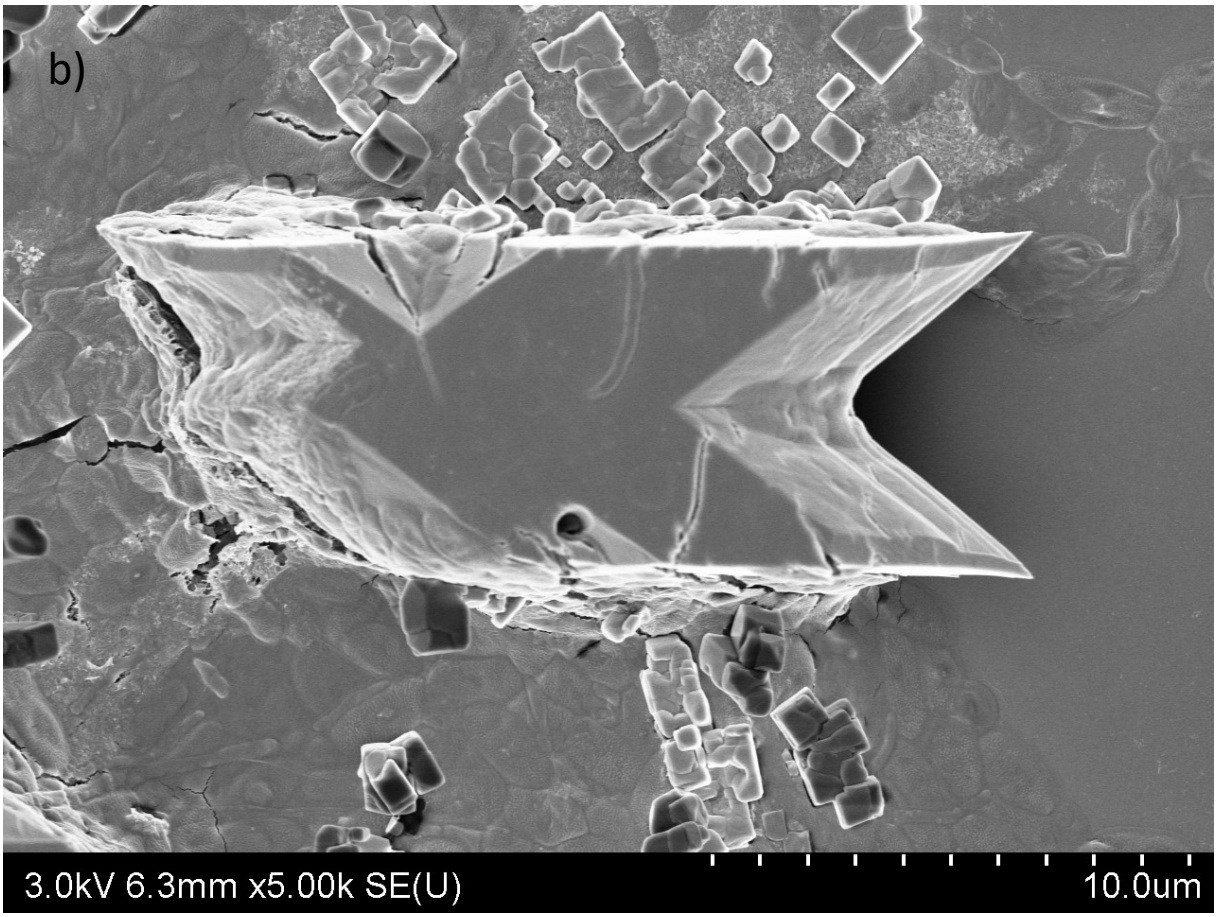


Fig. S3: SEM image showing the precipitate formed at the outlet of the microchannel after perfusion of oxalate and calcium solutions for 2h (SB)

Fig. S4: SEM-FEG images of the initial CHA substrate and at the end of the experiment for SB and SC


a)
3.0kV 6.3mm x1.50k SE(U)
30.0um


b)
3.0kV 6.3mm x5.00k SE(U)
10.0um

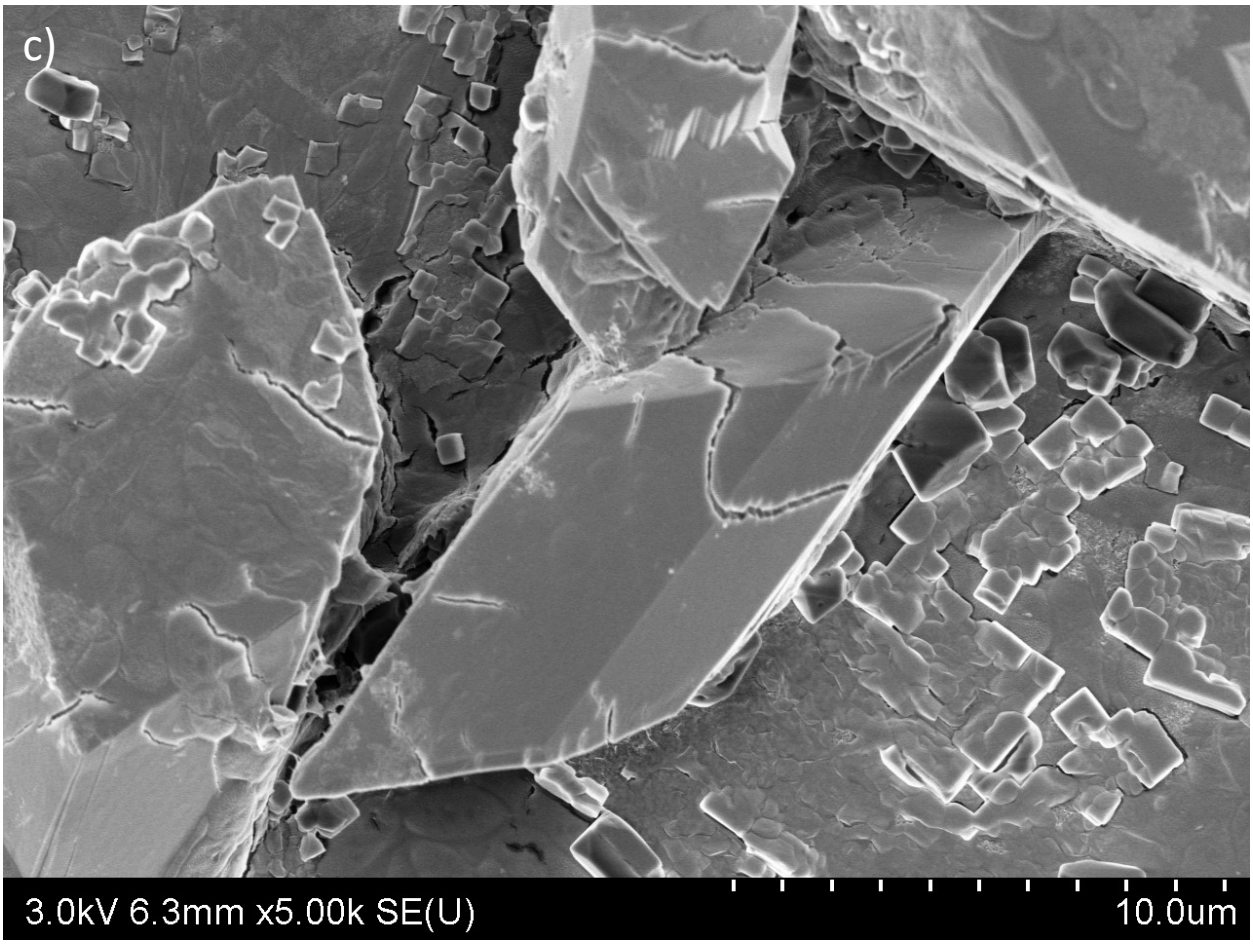


Fig. S5: a-c) Crystallization of CaOx in the microchannel after infusion of calcium and oxalate solutions on CHA for 2h (SB)

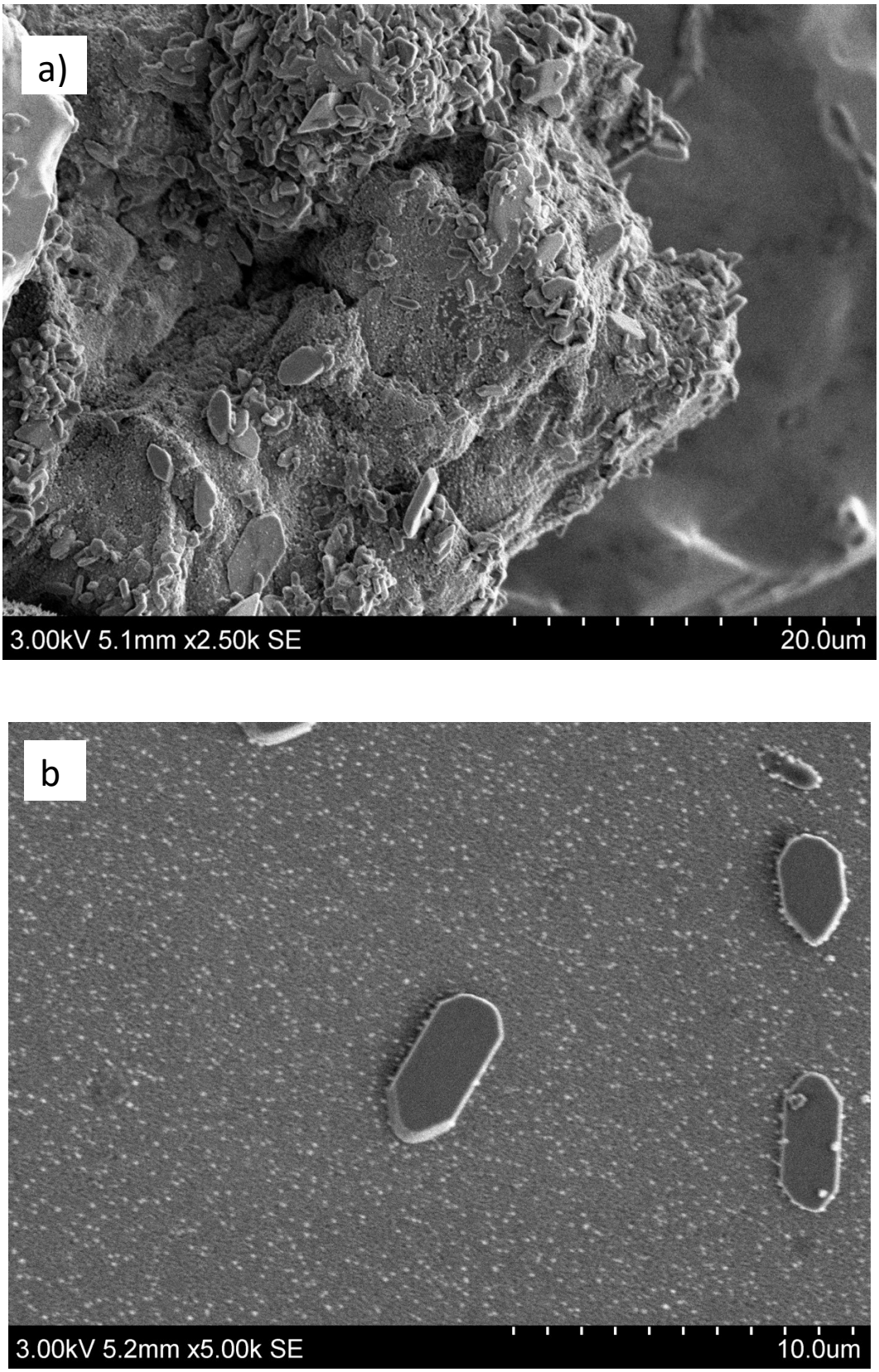


Fig. S6: a,b) Crystallization of CaOx at the outlet of the microchannel after infusion of oxalate solutions on CHA for 24h (SC)