Smooth Post-etch Morphology in Ligand Assisted Molybdenum Wet Atomic Layer Etch

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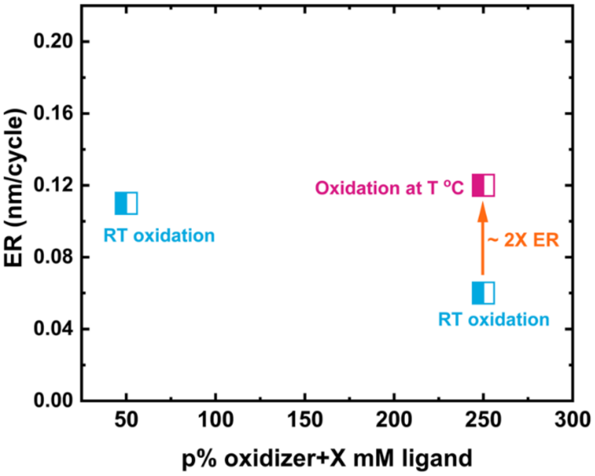

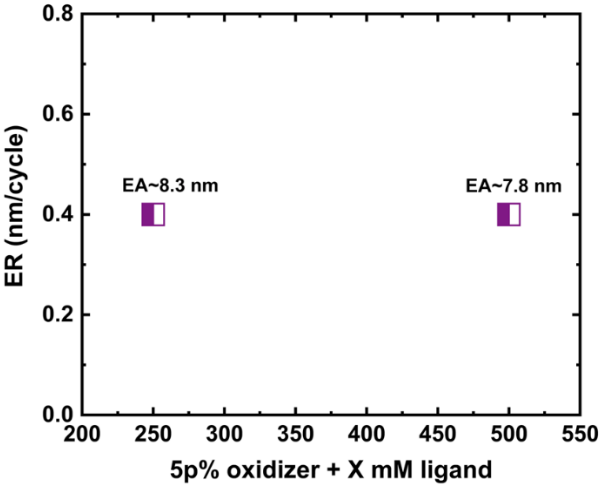

Fig.1: Mo etch rate as a function of ligand concentrations and oxidation temperature in an aqueous solution with low oxidizer concentration. Experiment shows that drop in Mo ER after ligand addition can be enhanced via solution phase kinetics.

Fig.2: Mo etch rate as a function of ligand concentration for higher oxidizer concentration. Result shows that Mo ER is independent of ligand concentration and can be significantly improved with oxidizer concentration.

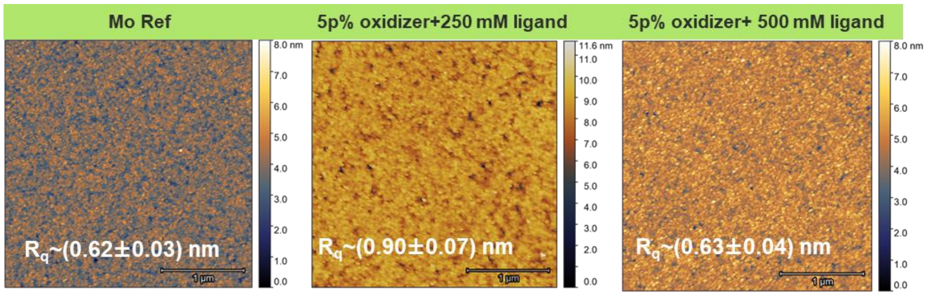

Fig.3: AFM images of as-deposited Mo reference coupon with post-etch Mo coupons for different ligand concentrations. AFM images show preserved surface smoothness on post-etch Mo coupon with higher ligand concentrations.