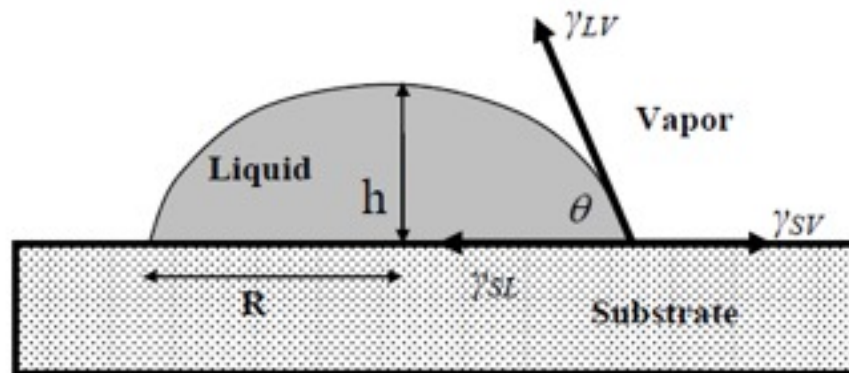
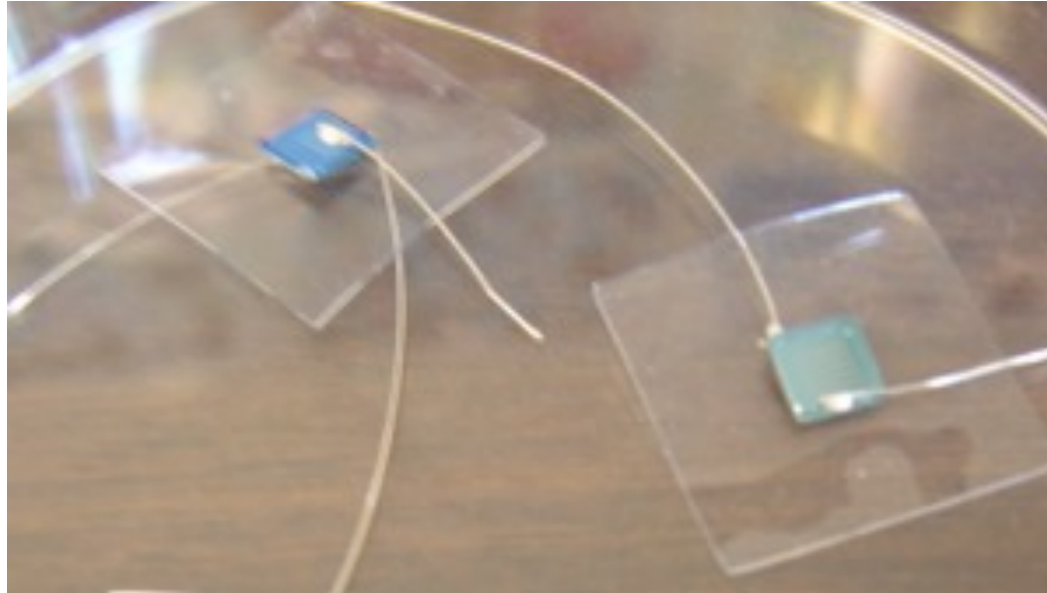
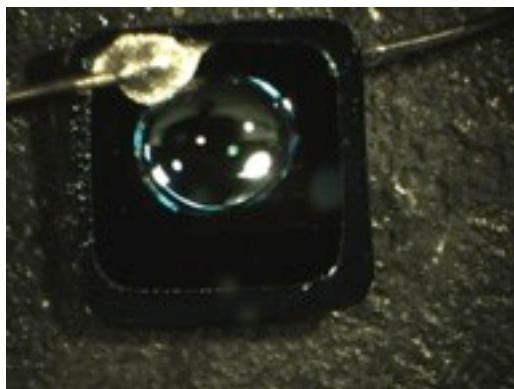


Low-voltage EO with pnc-Si

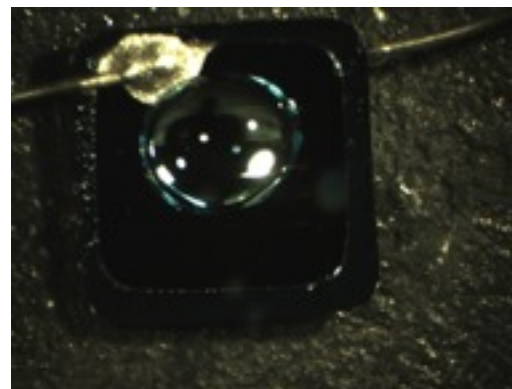
Setup and Flow Rate



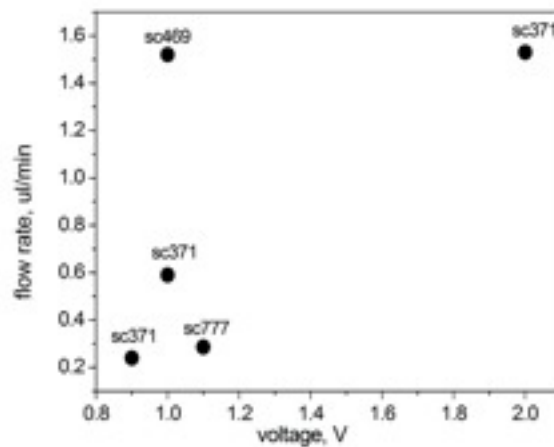
1. Ag/AgCl electrodes



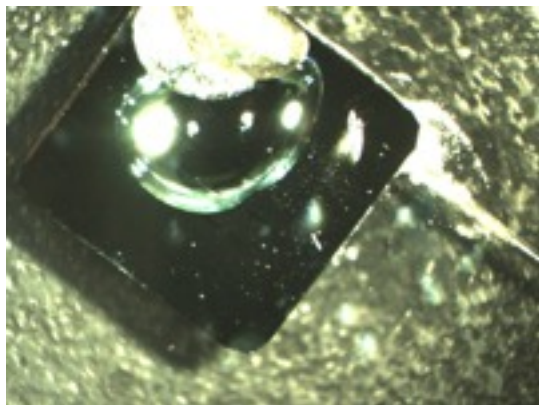
0s



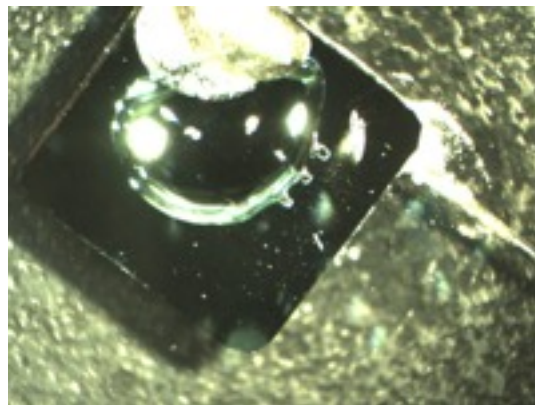
12s



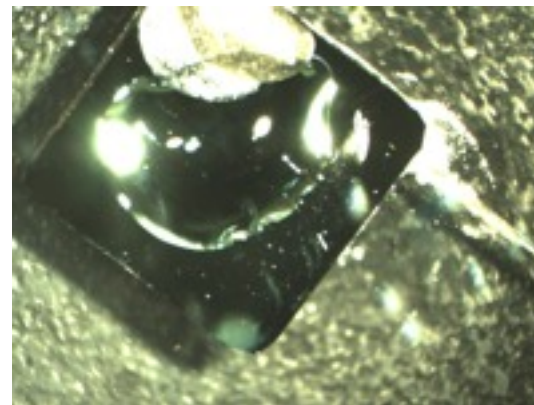
2. Gold electrodes + Ag/AgCl



0s

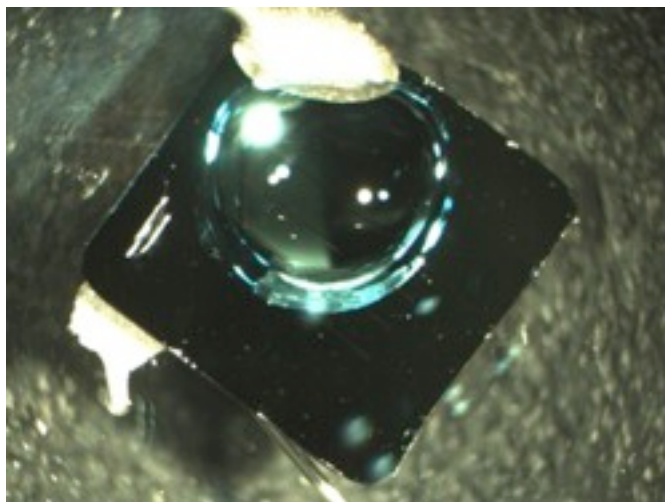


3s

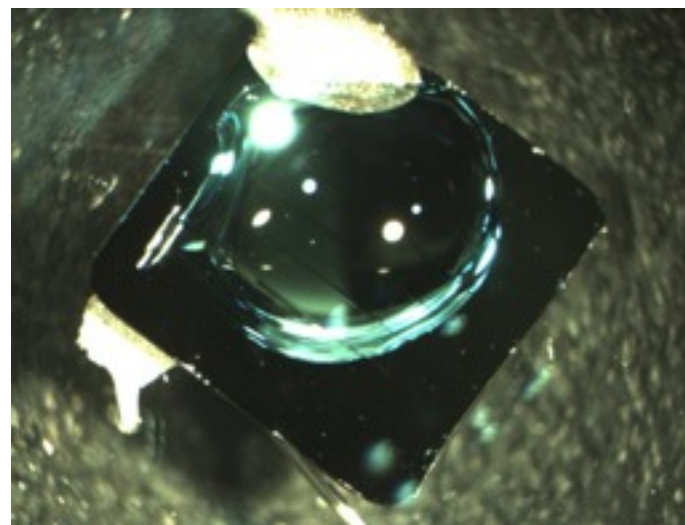


6s

2. Gold electrodes + Ag/AgCl



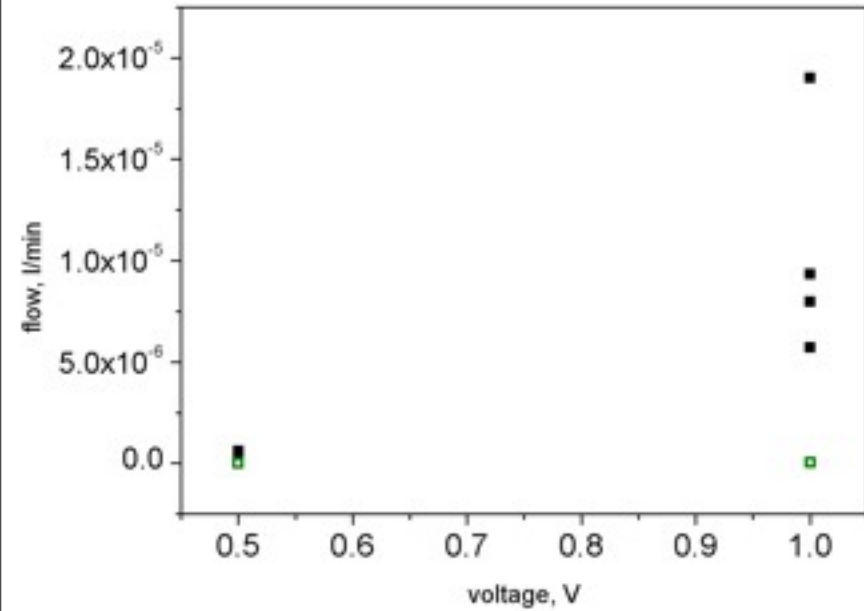
0s



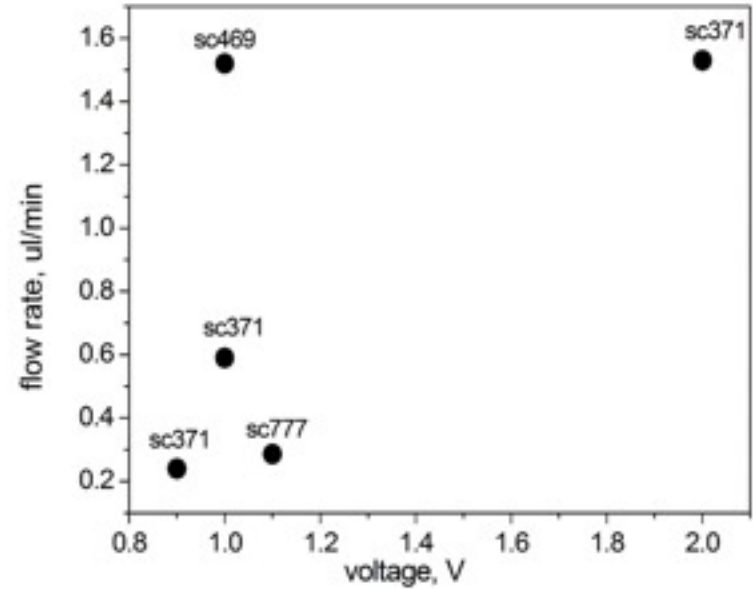
3.5s

3. Flow vs applied voltage

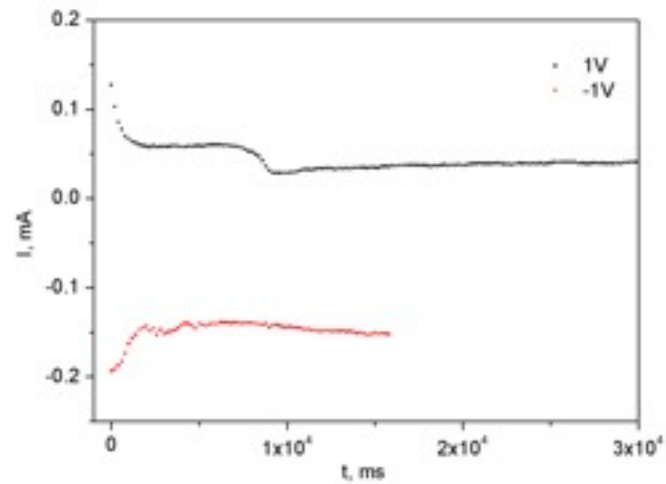
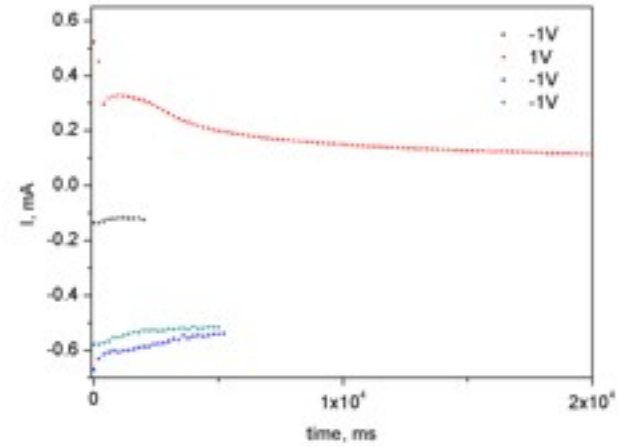
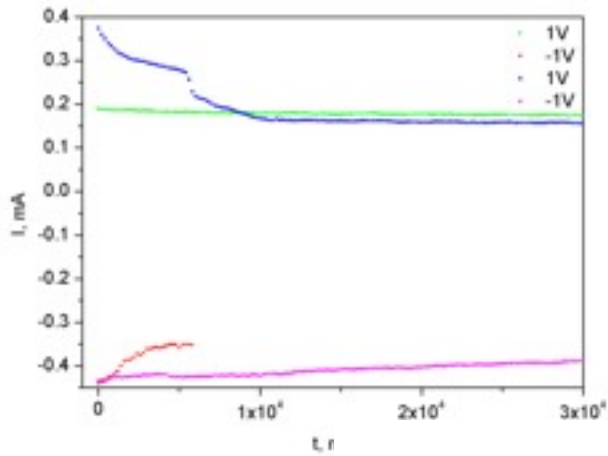
Ag/AgCl gold



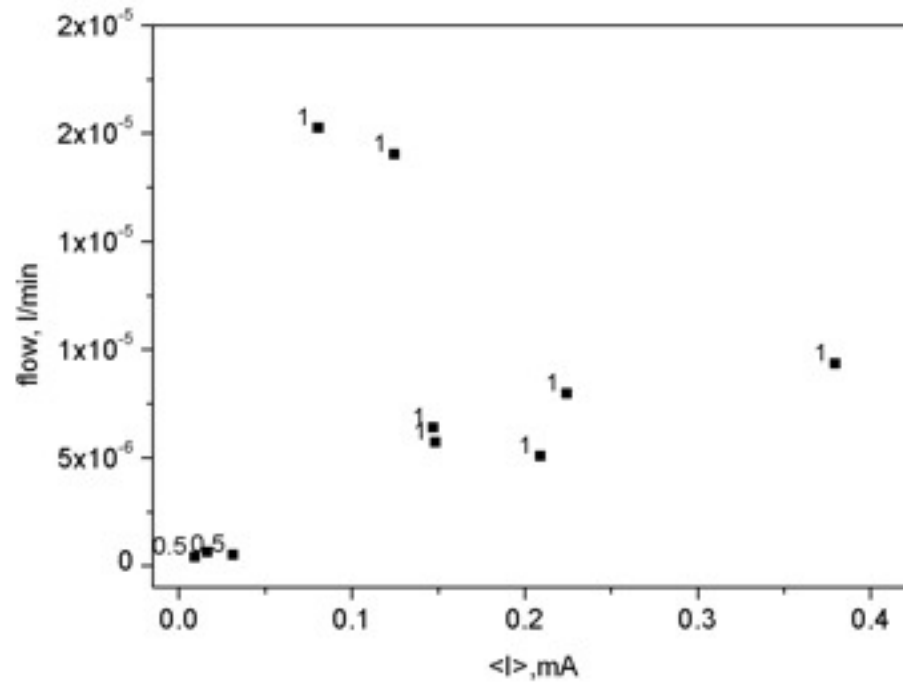
Ag/AgCl



3. Current



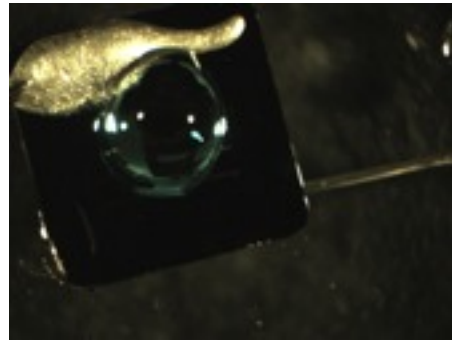
3. Flow vs current



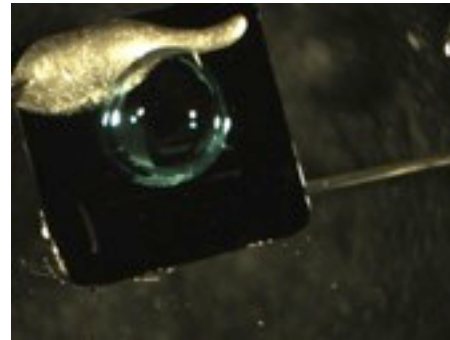
4. Pumping both directions

down

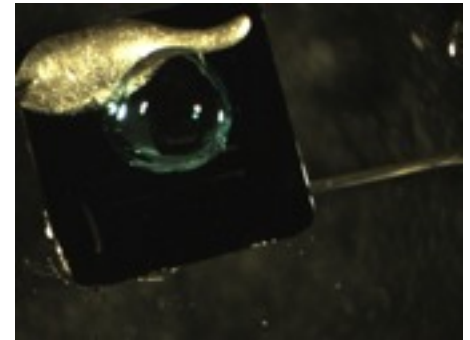
5.06E-06



0 s



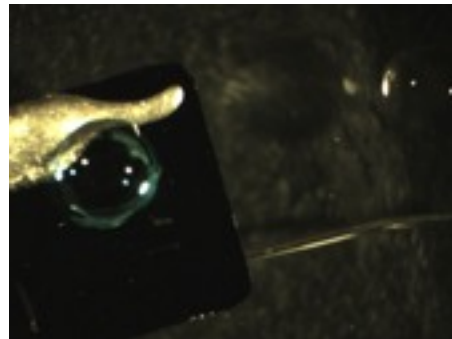
4 s



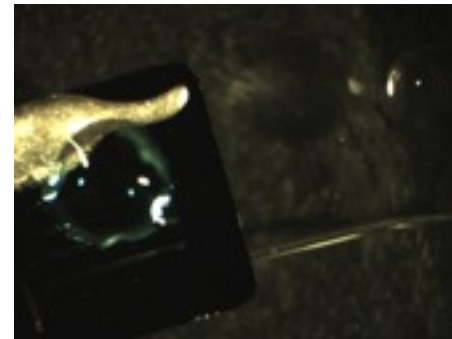
19.5 s

6.40E-06

up



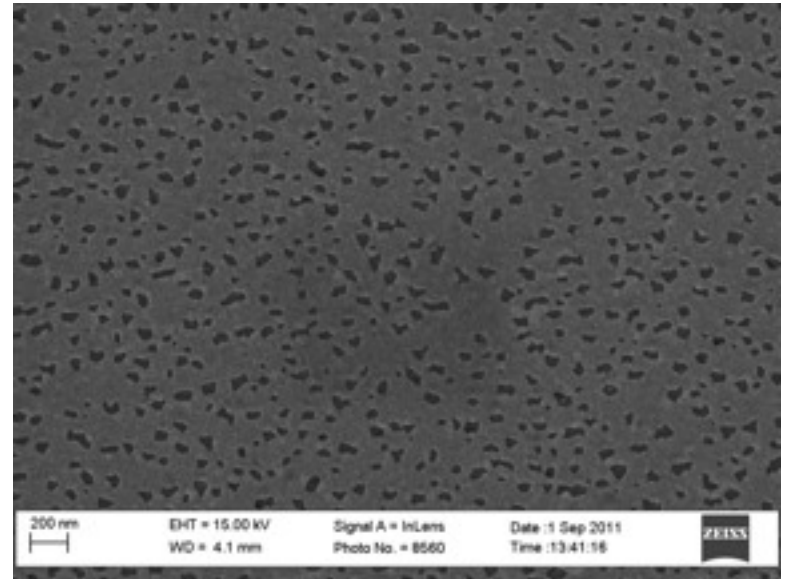
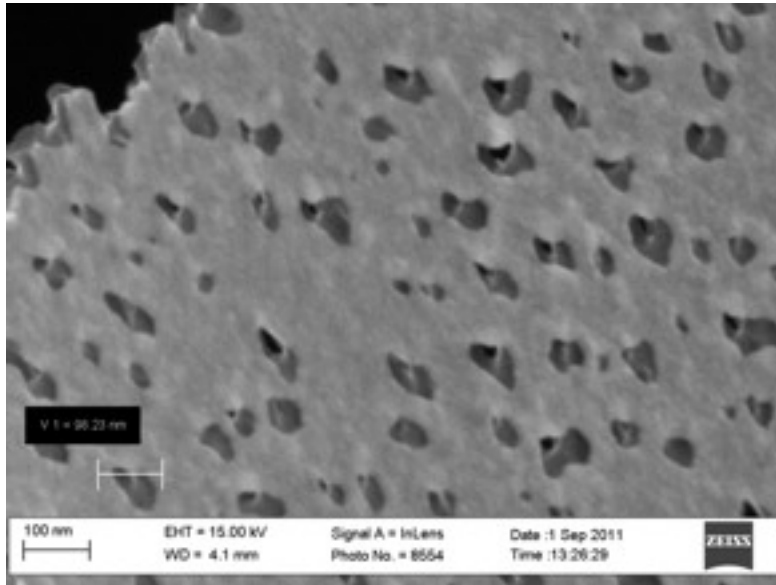
0 s



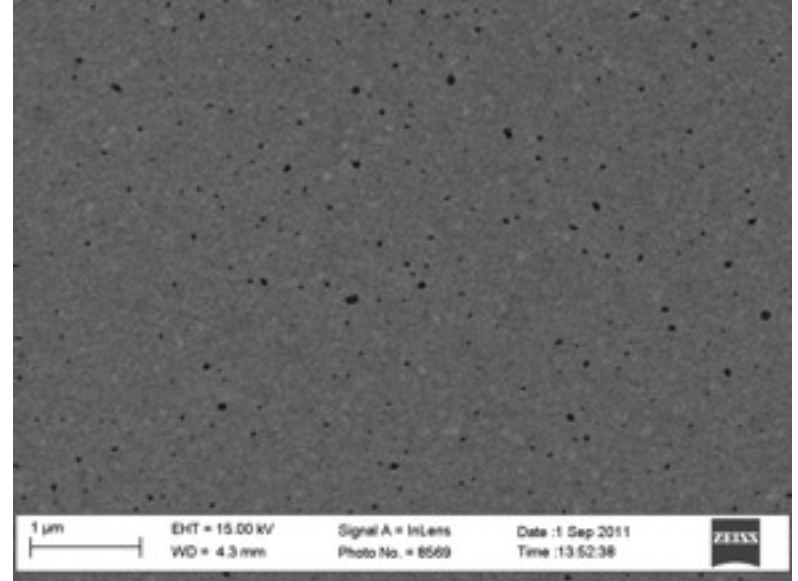
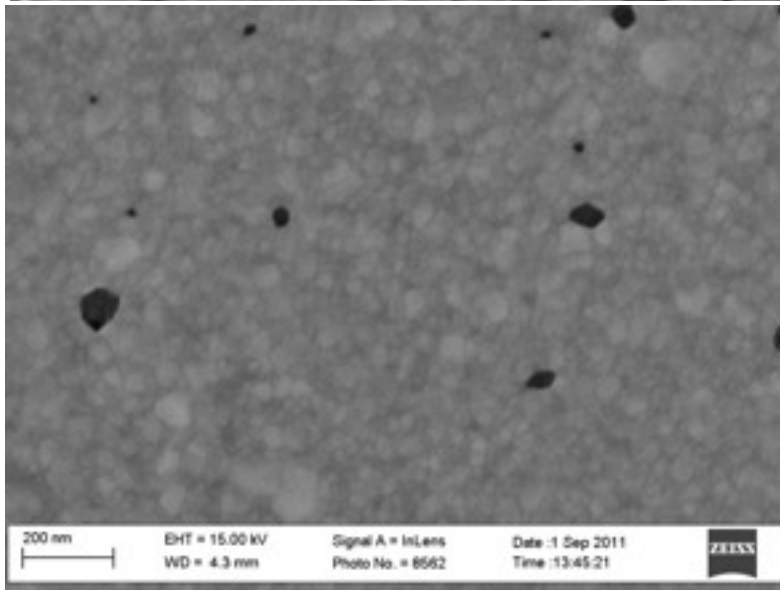
1.5 s

5. SEM of Gold Electrodes

Top surface

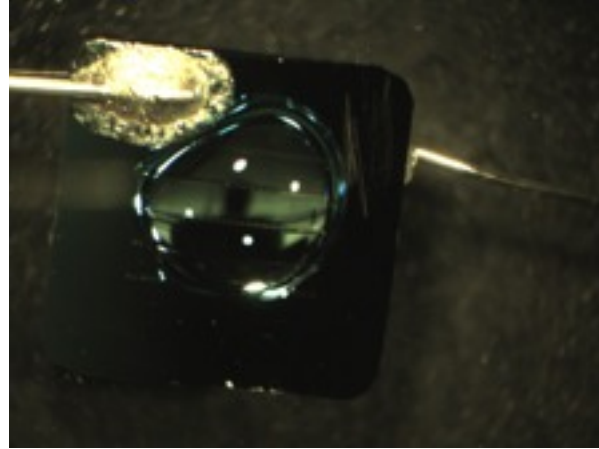
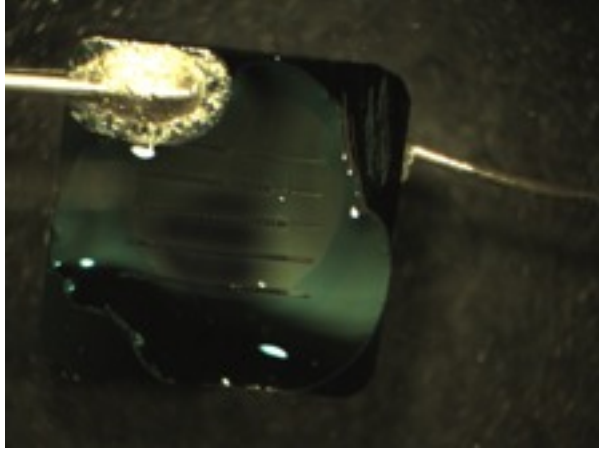


Bottom surface

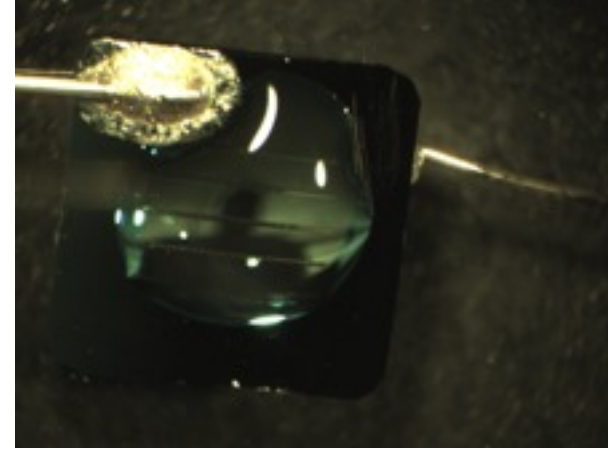


6. Deposition of Ag or AgCl?

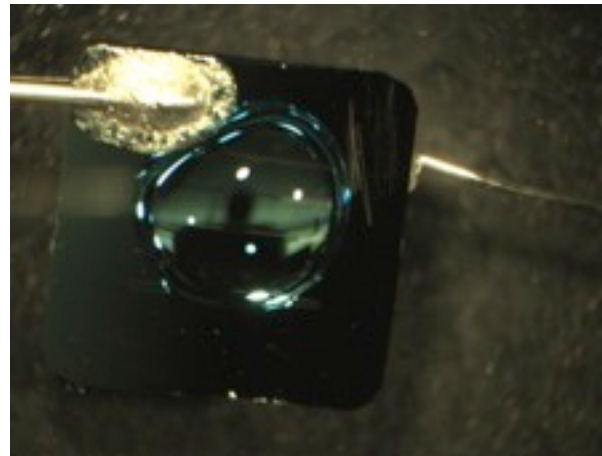
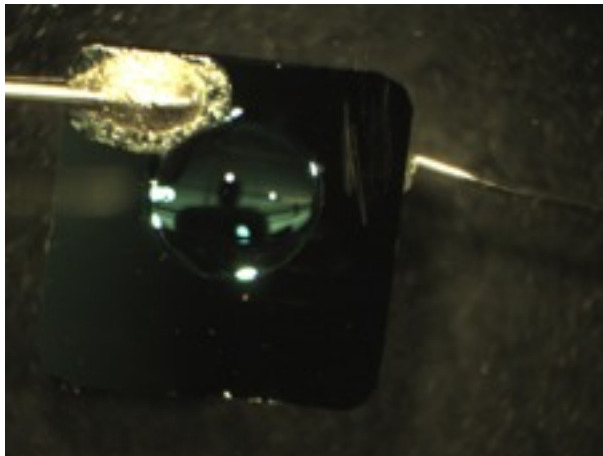
Top electrode - positive



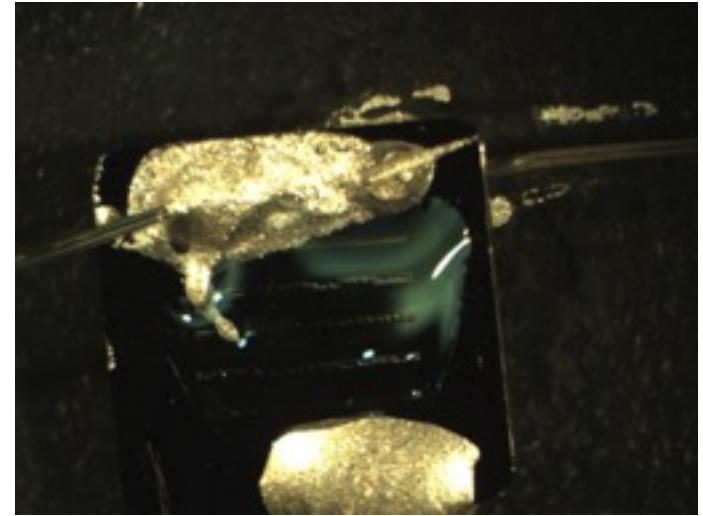
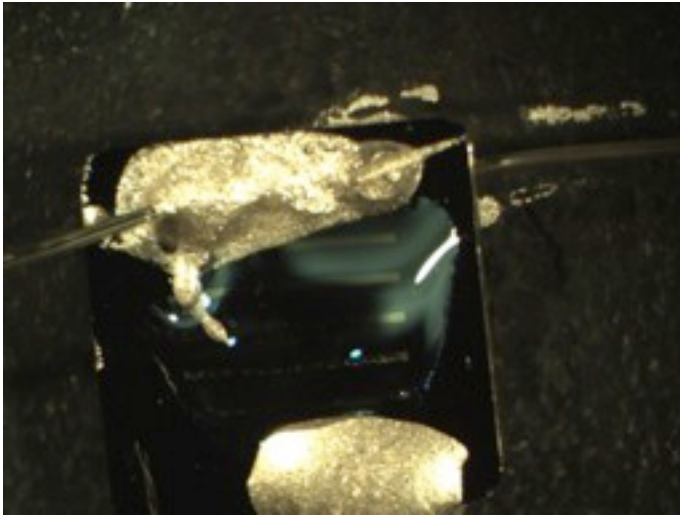
Top electrode - negative



Tests before (for comparison)

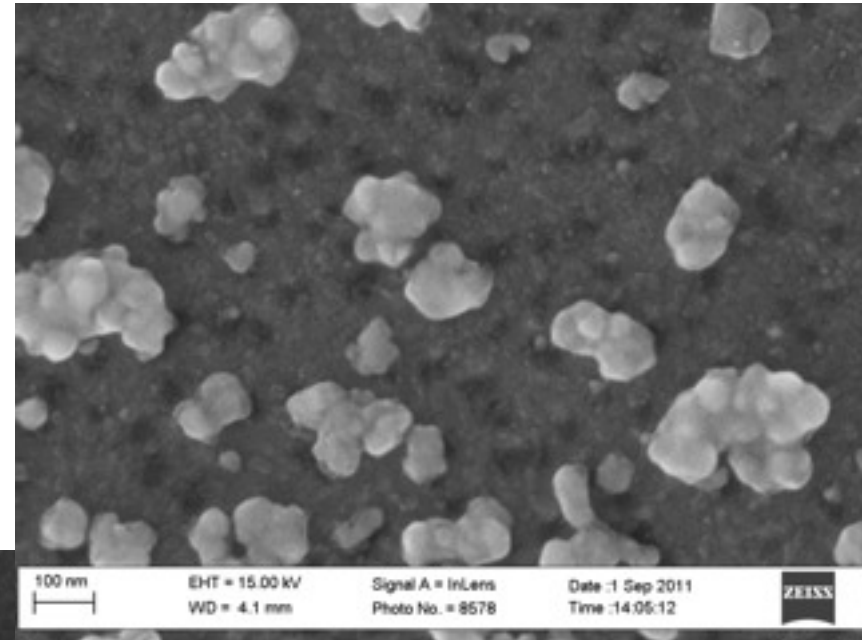
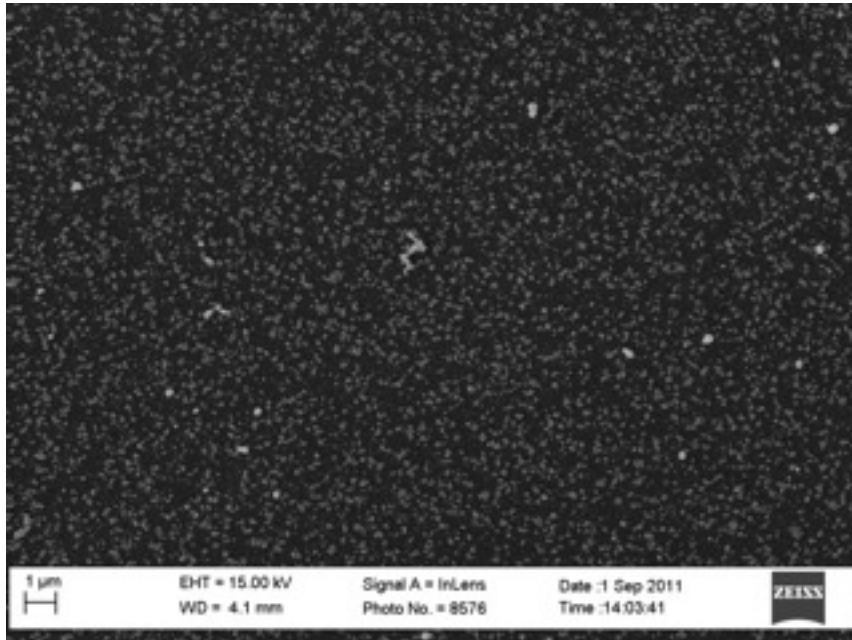


6. Deposition of Ag or AgCl?

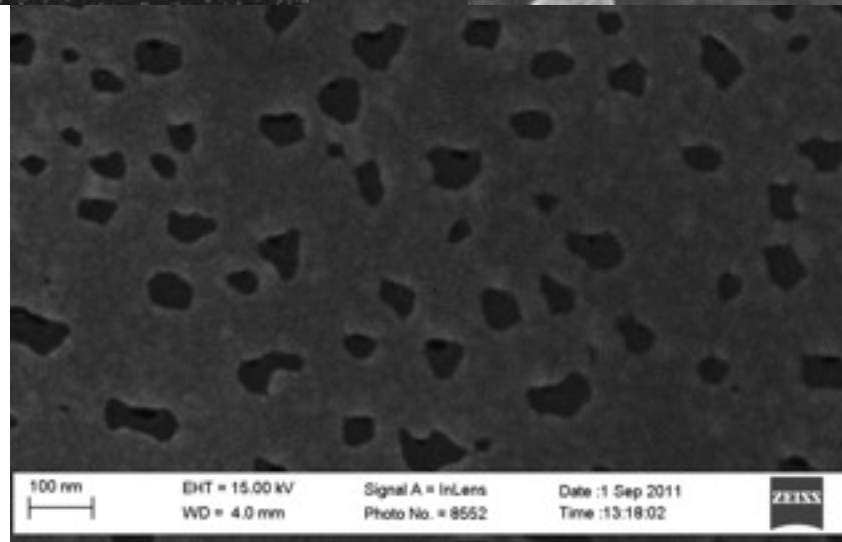


Membrane bulging indicated material deposition

6. SEM of Deposition ?



Surface
before



7. Degradation

1. Ag/AgCl (+video)

