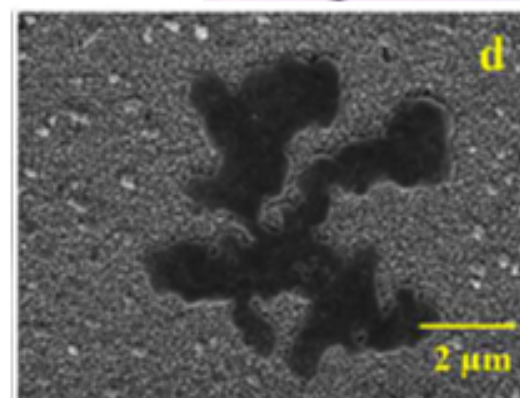


Novel Catalyst Materials for the Oxygen Evolution Reaction

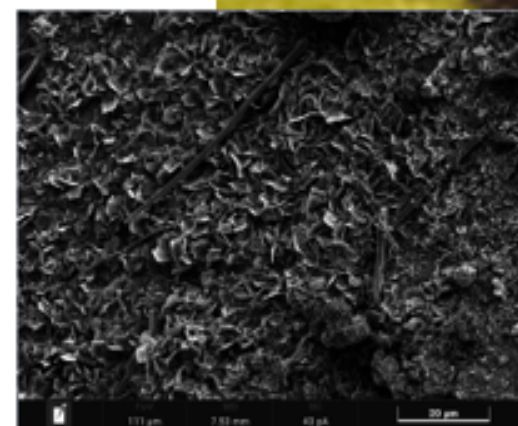
Developed a family of catalysts showing excellent performance in OER. The data below refers to one of our best examples so far. Further system and catalyst optimisation is in progress.

Benefits:

- Cheap non-precious metals (iron - based) and organics (further optimisation possible)
- Low overpotential 187mV (@current densities of 10 mA/cm² in 0.05 M KOH, FTO)
- Tafel plot: 38.8mV/decade (FTO)
- Small amounts needed (similar to other catalysts 10 µg / cm² , FTO)
- Highly stable:
 - Very stable in alkali at least 30% 5M KOH
 - Stable after at least 6000 CV cycles, still very active
- Deposition process:
 - ✓ Ink/cast
 - ✓ In situ preparation
 - ✓ No binding agent required
 - ✓ No conductivity enhancing particles required
- Preparation method - Cheap starting materials (metal salts, organics etc, in common solvent) at 80C for four hours



New 'Activated' catalyst on FTO substrate



New 'grown' catalyst on Ni Mesh substrate