

Figure S1. Scheme of dead-end electrochemical cell [44].

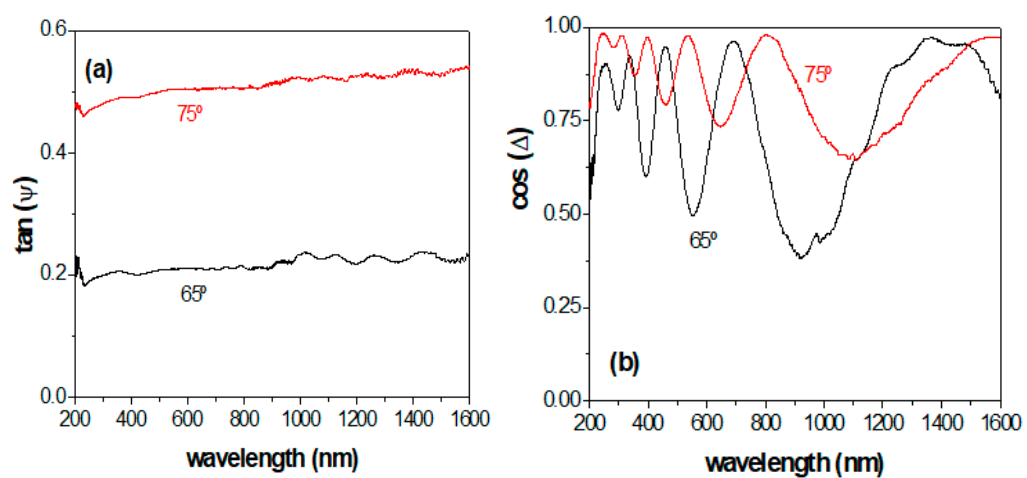


Figure S2. Wavelength dependence of spectroscopy ellipsometry experimental angles: (a) $\tan(\Psi)$; (b) $\cos(\Delta)$, for the two measured angles (65° and 75°).

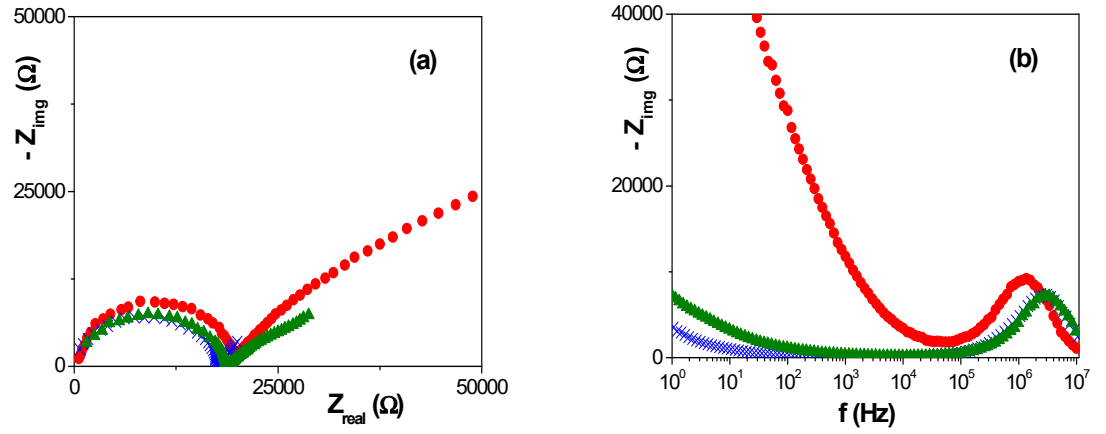


Figure S3. Comparison of impedance plots for Al-ZnO (●) and Al-SiO₂ (▲) samples in contact with 2x10⁻³ M NaCl solution, and the 2x10⁻³ M NaCl solution (x). (a) Nyquist plots; (b) Bode plots. Data values for Al-ZnO sample starts at 30 Hz for scaling reason.

Table S1: Atomic concentration percentages of the elements found on the surface of the Al/ZnO thin nanofilm*.

Sample	C (%)	Al (%)	O (%)	Zn (%)
NPAS+ZnO	43.3	8.7	37.6	10.2

* elements with A.C. % ≤ 0.5 are not indicated.