

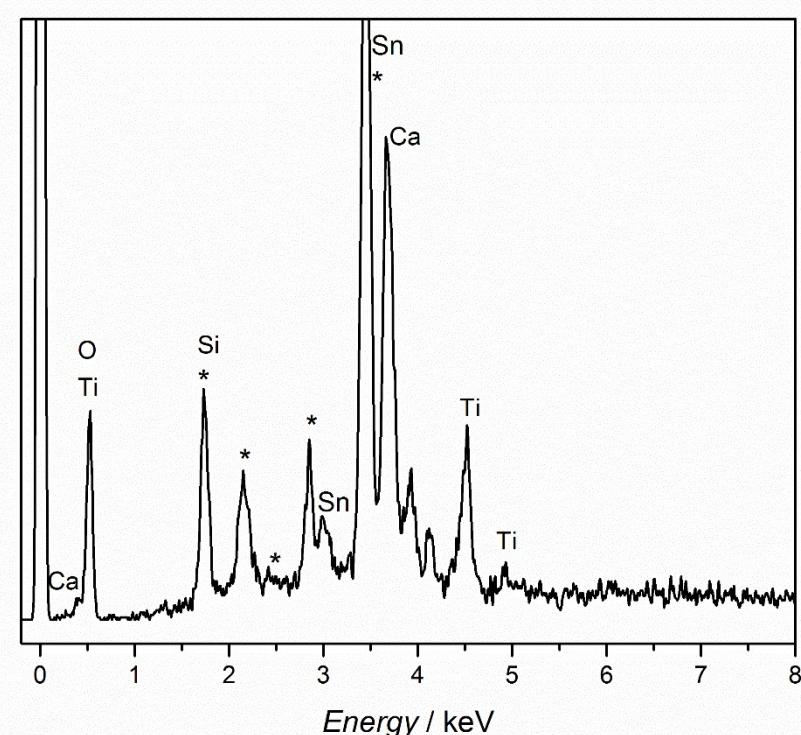
## Supporting Information

# The role of Layer-by-Layer, compact TiO<sub>2</sub> films in Dye-Sensitized Photoelectrosynthesis Cells

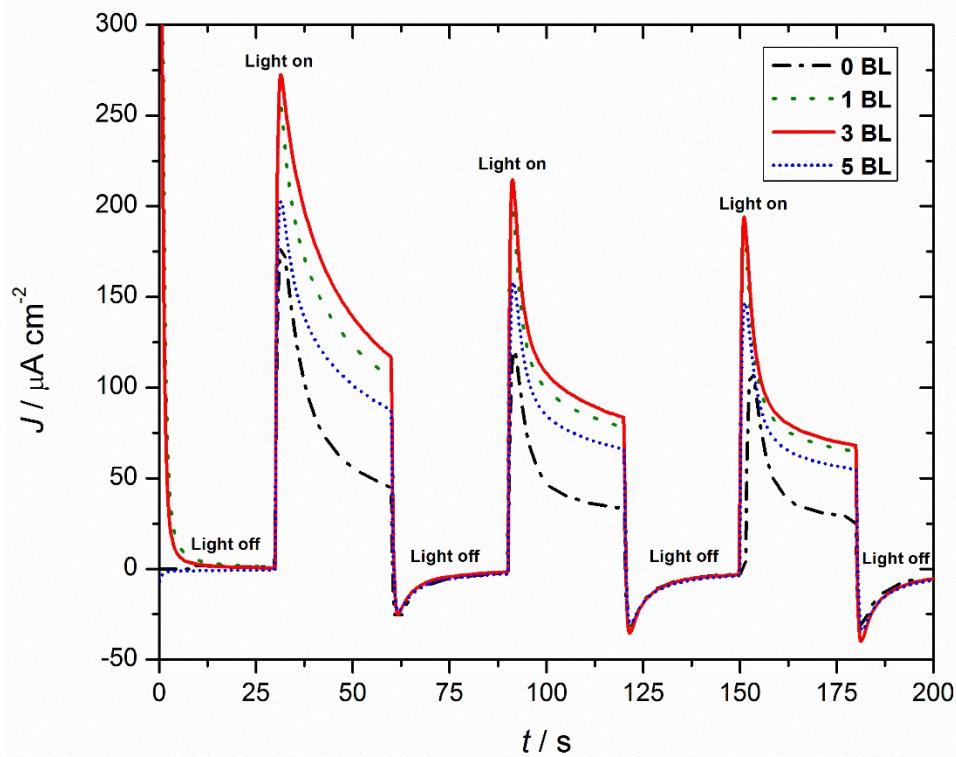
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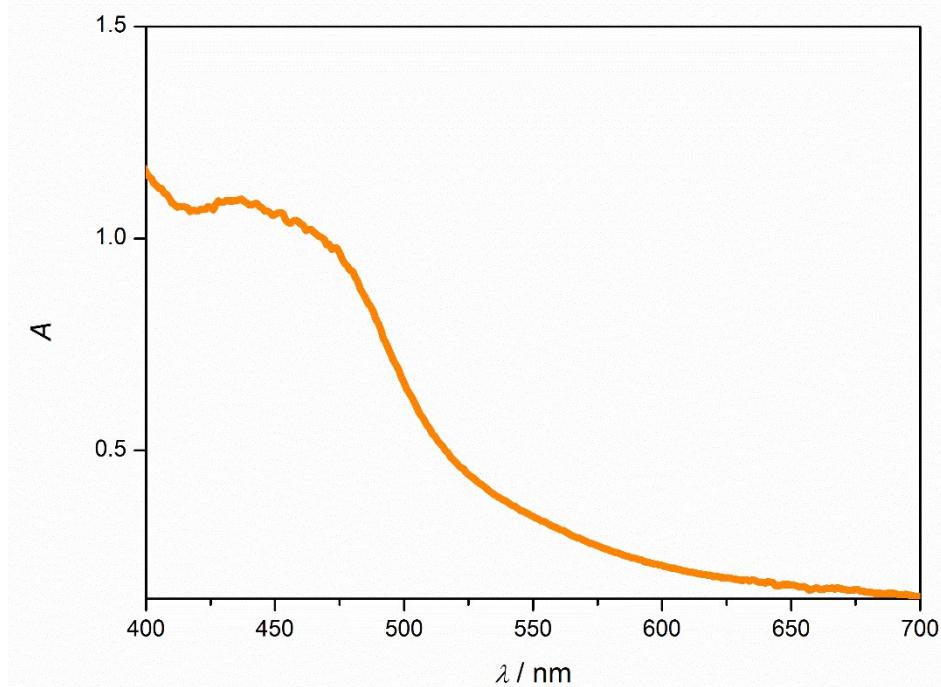
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**Figure S1.** EDS spectrum for compact TiO<sub>2</sub> layer/FTO (the asterisks represent Pd, Au or the components of the coating used prior the analysis).



**Figure S2.** J-t curves with three cycles of turn on/turn off irradiation ( $20 \text{ mmol L}^{-1}$  acetate buffer, pH 4.6,  $0.50 \text{ mol L}^{-1}$   $\text{LiClO}_4$ ,  $\lambda = 445 \text{ nm}$ , biased at  $200 \text{ mV}$  vs  $\text{Ag}/\text{AgCl}$ ).



**Figure S3.** UV-Vis spectrum of the photoanode with 3 BL (blank = FTO).