

Transparent nickel selenide alloy counter electrodes for bifacial dye-sensitized solar cells exceeding 10% efficiency

Yanyan Duan^{a,b}, Qunwei Tang^{a,b*}, Benlin He^b, Ru Li^a, Liangmin Yu^{a*}

^a Key Laboratory of Marine Chemistry Theory and Technology, Ministry of Education, Ocean University of China, Qingdao 266100, P.R. China;

^b Institute of Materials Science and Engineering, Ocean University of China, Qingdao 266100, P.R. China;

*Corresponding author: E-mail address: tangqunwei@ouc.edu.cn; yuyan@ouc.edu.cn;

Tel/Fax: +86 532 66781690;

Supporting figures

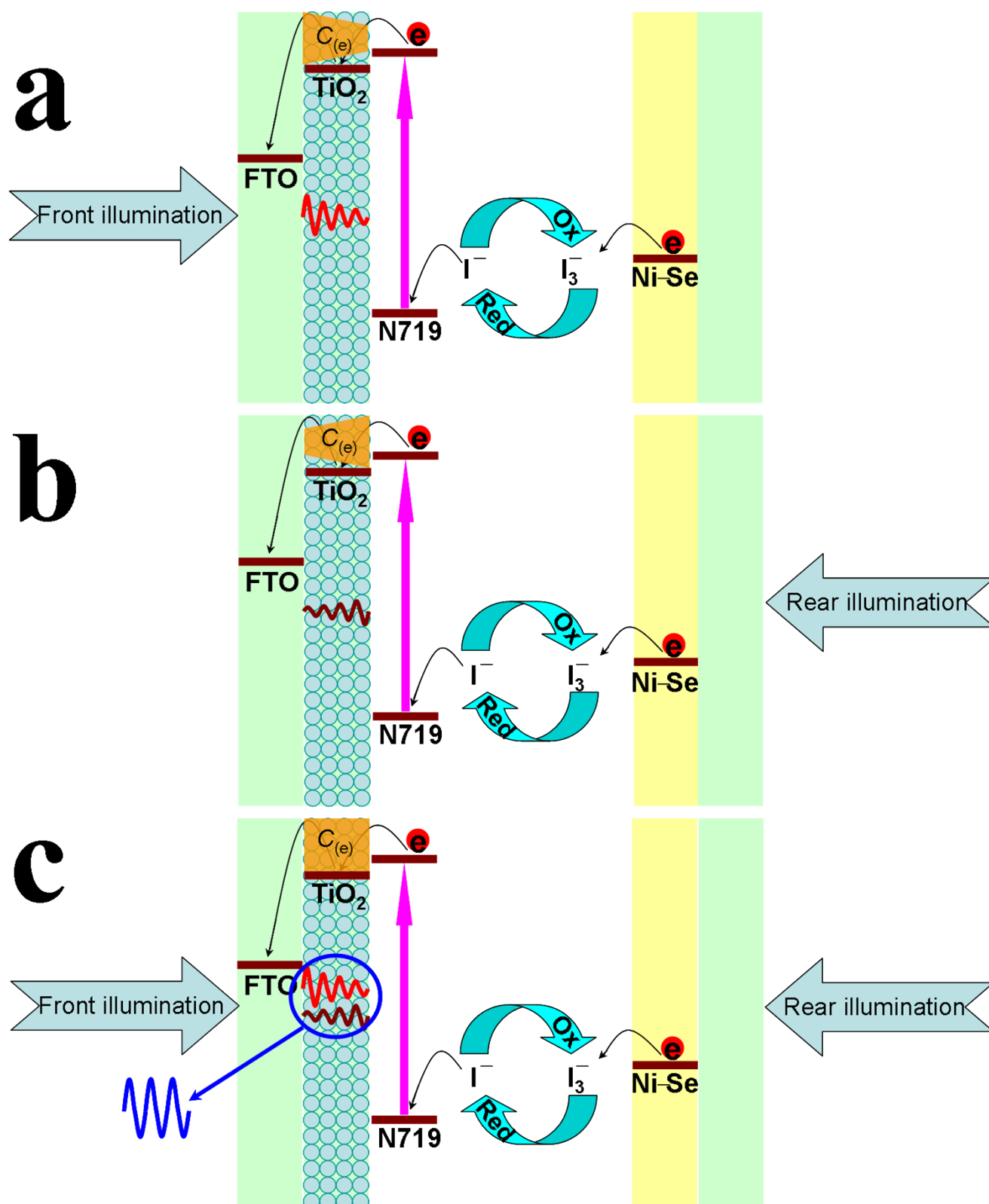


Figure S1. Schemes representing incident light descent and electron density on TiO₂ with irradiation from (a) front, (b) rear, and (c) both. The incident light intensity is controlled at 100 mW cm⁻² (calibrated by a standard silicon solar cell) in either side.

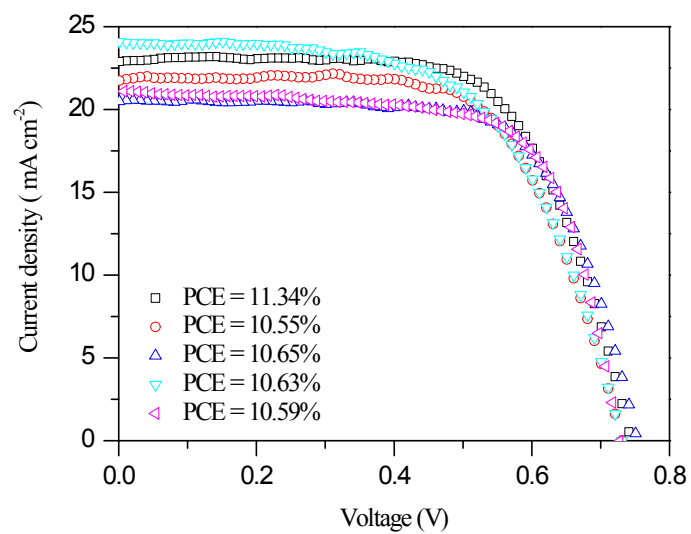


Figure S2. Repeated characteristic J – V curves of the bifacial DSSCs employing $\text{Ni}_{0.85}\text{Se}$ alloy CE for both irradiation. The light intensity in each side was controlled at 100 mW cm^{-2} .

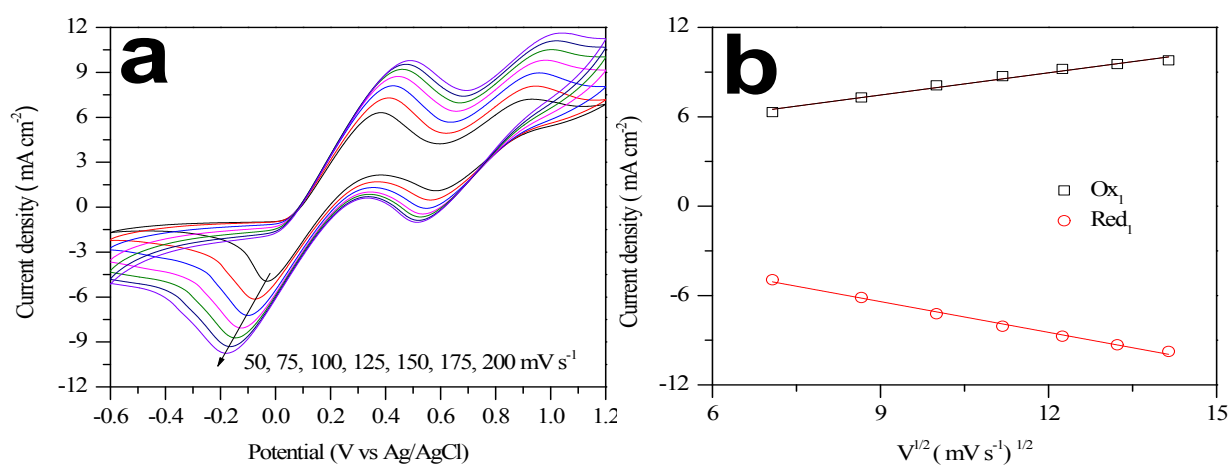


Figure S3. (a) CV curves of $\text{Ni}_{0.85}\text{Se}$ CE for I^-/I_3^- redox species at varied scan rates (from inner to outer: 50, 75, 100, 125, 150, 175, and 200 mV s^{-1}), and (b) relationship between peak current density and square root of scan rates.