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Supporting Information

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## **New Architectures for Dye-Sensitized Solar Cells**

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<b>Process</b>	<b>Half-life (s)</b>	<b>Reference</b>
<b>Injection</b>	150 ps	S. A. Haque, E. Palomares, B. M. Cho, A. N. M. Green, N. Hirata, D. R. Klug and J. R. Durrant, <i>Journal of the American Chemical Society</i> <b>2005</b> , <i>127</i> , 3456-3462.
<b>Relaxation</b>	12 ns	J. E. Kroeze, N. Hirata, S. Koops, M. K. Nazeeruddin, L. Schmidt-Mende, M. Gratzel and J. R. Durrant, <i>Journal of the American Chemical Society</i> <b>2006</b> , <i>128</i> , 16376-16383.
<b>Regeneration</b>	1 us	J. N. Clifford, E. Palomares, M. K. Nazeeruddin, M. Gratzel and J. R. Durrant, <i>Journal of Physical Chemistry C</i> <b>2007</b> , <i>111</i> , 6561-6567.
<b>Recombination</b>	3 us	E. Palomares, J. N. Clifford, S. A. Haque, T. Lutz and J. R. Durrant, <i>Journal of the American Chemical Society</i> <b>2003</b> , <i>125</i> , 475-482.
<b>Charge Transport</b>	100 us	B. C. O'Regan, K. Bakker, J. Kroeze, H. Smit, P. Sommeling and J. R. Durrant, <i>Journal of Physical Chemistry B</i> <b>2006</b> , <i>110</i> , 17155-17160.
<b>Charge Interception</b>	1 ms	B. C. O'Regan, K. Bakker, J. Kroeze, H. Smit, P. Sommeling and J. R. Durrant, <i>Journal of Physical Chemistry B</i> <b>2006</b> , <i>110</i> , 17155-17160.

**Table 1:** Kinetic processes in DSSCs near the power point.

	<b>Potential vs. SCE</b>	<b>Reference</b>
<b>TiO<sub>2</sub> E<sub>CB</sub>/q</b>	-0.9 V	G. Redmond and D. Fitzmaurice, <i>Journal of Physical Chemistry</i> <b>1993</b> , <i>97</i> , 1426-1430. G. Rothenberger, D. Fitzmaurice and M. Gratzel, <i>Journal of Physical Chemistry</i> <b>1992</b> , <i>96</i> , 5983-5986
<b>TiO<sub>2</sub> E<sub>VB</sub>/q</b>	2.2 V	$E_{VB} = E_{CB} + E_{bandgap} = -0.9 \text{ eV} + 3.1 \text{ eV}$
<b>N719<sup>*+</sup></b>	- 1.04 V	$E^{o*} = E^o - E^{00}/q = 0.71 - 1.75 \text{ gap}$
<b>N719<sup>0+</sup></b>	0.71 V (N3 <sup>0+</sup> = 0.87 V)	M. K. Nazeeruddin, S. M. Zakeeruddin, R. Humphry-Baker, M. Jirousek, P. Liska, N. Vlachopoulos, V. Shklover, C. H. Fischer and M. Gratzel, <i>Inorganic Chemistry</i> <b>1999</b> , <i>38</i> , 6298-6305.
<b>I/I<sub>3</sub><sup>-</sup></b>	0.23 V	Nernst corrected CRC value

**Table 2:** Potentials relevant to DSSC operation.