

## Appendix

## D

## Data on Dye Sensitized Solar Cells

**Table D.1** *Details on the possible dye sensitized solar cells reported in literature [The data have been assembled from literature].*

<i>System DSSC with the dye</i>	<i>Name of the dye</i>	<i>VOC mV</i>	<i>I<sub>SC</sub> mA/cm<sup>2</sup></i>	<i>%</i>
P1	N-[2,7-Bis-(N,N-diphenylamino)-9,9-spirofluoren-2-yl]-1,7-bis-(4-t-butylphenoxy)-perylene-3,4-dicarboxylic acid anhydride-9,10-imide	839	0.324	0.27
P4	N-(Pentafluorophenyl)-perylene-3,4:9,10-tetracarboxylic acid -3,4-anhydride-9,10-imide	626	0.114	0.04
P7	Perylene dicarboxylic acid -3,4-anhydride (P7)	652	0.153	0.06
P8	N-(Diisopropylphenyl)-3,4:9,10-perylene tetracarboxylic acid -3,4-anhydride-9,10-imide	687	0.306	0.13
P9	1,7-(4-t-butylphenoxy)-3,4:9,10-perylene tetracarboxylic dianhydride	647	0.181	0.07
	Ru(L)(NCS) <sub>3</sub> (L = 4,4,4-tricarboxy-2,2:6,2-terpyridine (Up to 920 nm)			
	2-cyanoacrylic acid-4-(bis-dimethylfluoreneaniline) dithiophene			
	[M(H <sub>3</sub> tterpy)LY] <sup>+</sup> ; M = Os(II) or Ru(II); (H <sub>3</sub> tterpy) is tridentate 4,4,4-tricarboxy-2,2:6,2-terpyridine, and L is a bidentate ligand like (bpy, 2,2-bipyridine) or (pyq, 2-2-pyridylquinoline) Near IR 50			
	Ruthenium complex with 2-(2,4-Difluorophenyl)pyridine			

**D.2** APPENDIX D**Table D.2** *Data of the Dye sensitized solar cells [The data reported in this table have been assembled from literature]*

<i>Dye</i>	<i>IPCE</i> (%)	<i>Short Circuit</i> <i>Current J<sub>SC</sub></i> (mA/cm <sup>2</sup> )	<i>Open Circuit</i> <i>Voltage</i> <i>V<sub>OC</sub></i> (mV)	<i>Fill Factor</i> ( <i>ff</i> )	<i>Efficiency</i> (%)	
Z910	80	17.20	777	0.76	10.20	
Z907	72		13.60	721	0.69	6.80
Z955	80		16.37	707	0.6	8.00
K8	77		18.00	640	0.75	8.64
K19	70		14.61	711	0.67	7.00
K73	80		17.22	748	0.69	9.00
K51	70		15.40	738	0.69	9.50
Anthocyanin	67		0.425		0.83	
Black rice (anthocyanin) 560 nm			1.142	551		
Dye1	67		11.18	661	0.57	4.21
Dye2	51		12.35	644	0.56	4.41
Dye3			9.07	559	0.57	2.88
Monoporphyrin acid 1	73		8.86	654	0.71	4.11
Monoporphyrin acid 2	75		9.70	660	0.75	1.80
Monoporphyrin acid 3	5		1.35	490	0.69	0.45
Monoporphyrin acid 4	30		2.05	580	0.75	0.89
Monoporphyrin acid 5	4		1.1	561	0.67	0.41
E490			9.17	482	0.6	2.7
E491			8.6	499	0.66	2.84
E513			4.91	472	0.72	1.68
SG 74-5			7.82	479	0.68	2.53
SG 72-5			7.06	487	0.71	2.43
Rose Bengal (1XC)			7.84	560	0.51	2.4
Eosin-Y (1XC)			4.56	560	0.59	1.5
Rhodamine-B (1XC)			1.88	510	0.62	0.6
Fast Green (1XC)			1.50	480	0.58	0.4
Acridine Orange (1XC)			0.36	370	0.50	0.06
Blended dye above five (1XC:2XC:3XC:2Xc:1XC)			27.9	590	0.51	7.9

**Table D.3** *Data of the Dye sensitized solar cells [The data reported in this table have been assembled from literature] Continued.*

<i>Dye</i>	<i>IPCE (%)</i>	<i>Short Circuit Current <math>J_{SC}</math> (mA/cm<sup>2</sup>)</i>	<i>Open Circuit Voltage <math>V_{OC}</math> (mV)</i>	<i>Fill Factor (ff)</i>	<i>Efficiency (%)</i>
NKX-2553		10.4	710	0.74	5.5
NKX-2554		9.9	740	0.74	5.4
NKX2569		12.9	710	0.74	6.8
NKX-2600		12.5	680	0.69	5.9
Indoline D1	70	14.8	589	0.54	5.11
Indoline D2	80	10.0	622	0.65	4.03
TC301		4.93	1041	0.71	3.66
TC306		7.36	915	0.75	5.07
N-719	85	17.0	820	0.72	10.1
N-749(black Dye)		21.8	720	0.65	10.4
N3(red Dye)	83	15.8	726	0.71	8.2
N945		16.50	790	0.72	9.60
D29		7.98	660	0.47	2.22
D35		12.02	780	0.54	5.07
PT		7.57	580	0.59	2.3
TT		0.39	260	0.45	0.05
P1		1.26	529	0.68	0.52
P4		0.39	450	0.61	0.12
P7		0.50	477	0.61	0.17
P8		0.51	455	0.62	0.16
P9		0.52	503	0.62	0.18
L0		2.89	735	0.73	2.89
L1		5.42	735	0.69	5.42
L2		6.42	710	0.68	6.42
L3		6.55	635	0.66	6.55
L4		4.56	560	0.64	4.56
ZnO	42	9.0	612		2.3
ZnO:I	61	14.0		4.5	