

Corrections and Additions for the 3rd Impression

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	Page number	Line number	Incorrect content	Correction/instructions on how to correct
1	476	Col. 2, line 1	“lifetime”	“decay rate”
2	504	Col. 1 paragraph 1 to Col. 2 paragraph 1.	Delete text starting with “Increasing the operating temperature...” to “thus yields the stretched exponential behavior of the luminance”	<p>Insert: “Increasing the operating temperature can also accelerate aging. We assume that the probability for destroying an emitting molecule is thermally activated, i.e. the probability is: $P = \exp(-\Delta E_A/k_B T)$, where ΔE_A is the activation energy for the formation of non-radiative molecular species. Now the rate of defect formation can be obtained by solving:</p> $\frac{dQ}{dt} = -(Q - N_0)/\tau \quad (6.123)$ <p>Where Q is the defect density, N_0 is the total number of emitting molecules at $t = 0$, and τ is the time for defect formation, as defined in Eq. 6.121. Solving Eq. 6.123 yields an exponential decrease in increase in defect density with time: $Q(t) = N_0(1 - \exp(-t/\tau))$, which is consistent with $Q(0) = 0$ and $Q(\infty) = N_0$, i.e. all the emitting centers are eventually eliminated as defects. Now, as above, we assume that the defect formation rate is thermally activated such that:</p> $\frac{1}{\tau} = k_0 \exp(-\Delta E_A/k_B T) \quad (6.124)$ <p>Equations 6.121 and 124 suggest that increasing T will accelerate the degradation in luminance, $L(t)$. Then, combining 6.122 and 6.124 we arrive at a luminance lifetime at standard operating</p>

				<p>initial luminance and operating temperature, T_0, that can be related to accelerated by elevated test temperature, T_{tst}, and initial luminance, L_{0tst}:</p> $LTx(L_0, T_0) = LTx(L_{tst}, T_{tst}) \left[\frac{L_{0tst}}{L_0} \right]^n \exp \left(-\frac{\Delta E_A}{k_B} \left(\frac{1}{T_{tst}} - \frac{1}{T_0} \right) \right).$ <p>(6.125)</p> <p>This methodology is valid only if the test conditions allow for independent determination of lifetime due to temperature and luminance. Also, the temperature and initial luminance used in the accelerated aging tests must be kept sufficiently low so as not to introduce degradation processes that differ from those experienced under normal operating conditions. Note that a similar analysis also applies to organic detectors (see Sec. 7.8)."</p>
3	559	Col. 2, Ref. 10 from top	"Kanno, H., Sun, Y. & Forrest, S. R. 2006b"	"Kanno, H., Giebink, N. C., Sun, Y. & Forrest, S. R. 2006b"
4	573	Col. 2 line just prior to Eq. 7.24	"Eq. 7.3"	"Eq. 7.14"
5	573	Co. 2 line 5 following Eq. 7.24	"that reach the active"	"that generate charge in the active"
6	577	Col. 2, Eq. 7.48	" $\eta_{ext} = \eta_A \eta_{int} =$ "	" $\eta_{int} =$ "
7	580	Col. 1, para. 1, line 9	"is similar to"	"differs from"
8	586	Col. 2, line 1	", or less than"	Delete text
9	587	Col. 2, Eq. 7.65		Replace Eq. 7.65 with " $\Delta f = \frac{1}{2\pi} \left(\frac{1}{\tau_{ED} + t_{tr} + \tau_{RC}} \right)$ "
10	608	Col. 1, line 1-2	Delete: "All device responses are limited by the hole transit time across the donor layers"	Insert: "While the frequency response of these devices is attributed to the limited hole mobilities in the donors, it may also be due, in part, to slow exciton diffusion to the HJ from their point of generation in the donor and acceptor layers."

11	635	Col. 1, line 3	" η_{EL} "	" η_{CT} "
12	635	Col. 1, Eq. 7.153a	$\Delta V_{OC}^{nr} = V_{OC}^{rad} - V_{OC} = m \left(\frac{k_B T}{q} \right) \log(\eta_{CT})$	$\Delta V_{OC}^{nr} = V_{OC}^{rad} - V_{OC} = -m \left(\frac{k_B T}{q} \right) \log(\eta_{CT})$
13	635	Col. 1, Eq. 7.153a	$\Delta V_{OC}^{nr} = m \left(\frac{k_B T}{q} \right) \log \left(\frac{\eta_{EL}}{\gamma \chi_{em}} \right)$	$\Delta V_{OC}^{nr} = -m \left(\frac{k_B T}{q} \right) \log \left(\frac{\eta_{EL}}{\gamma \chi_{em}} \right)$
14	699	Col. 1, Caption Fig. 7.158		At the end of the caption, insert: "Donors have a similar structure but with d and a moieties switched."
15	730	Col. 1, para. 1, lines 2-13	"When an electron from an adjacent acceptor layer is at distance r from a neutral Ag NP metal sphere, it is attracted by its mirror image with a force of $q^2 / (4\pi\epsilon_r\epsilon_0 r^2)$. Once the electron binds to the sphere, the NP is negatively charged, and subsequently attracts a hole from the adjacent donor layer with the same force. The electron and hole recombine, and the process begins once more starting with the neutral NP. The binding energy of an electron to the NP is $E_B = q^2 / (8\pi\epsilon_r\epsilon_0 r)$. At room temperature, and at a distance, $r = 4$ nm, $E_B = 2.4k_B T$."	When an electron from an adjacent acceptor layer is at distance $r \gg R$ from a neutral Ag NP metal sphere of radius R , it is attracted by its mirror image with a force of $-\frac{q^2}{4\pi\epsilon_0\epsilon_r} \frac{R}{r^3}$. Once the electron binds to the sphere, the NP is negatively charged, and subsequently attracts a hole from the adjacent donor layer with the same force. The electron and hole recombine, and the process begins once more starting with the neutral NP. The attractive energy of an electron to the NP is $E_B = -\frac{q^2}{8\pi\epsilon_0\epsilon_r} \frac{R}{(r^2 - R^2)}$. At room temperature, a charge at a distance, $r = 4$ nm, for a sphere of radius 2 nm, $E_B \approx -1.5k_B T$.
16	777	Col. 2, Eq. 7.220 + following 2 lines	" $\Delta P_{loss} = I^2 R_{ser}$ (7.220) Thus, series-connected cells in modules are preferred over parallel-connected cells to minimize losses"	" $\Delta P_{loss} = I^2 R_{ser} = V^2 / R_{ser}$ (7.220) Thus, series-connected cells in modules are preferred over parallel-connected cells to minimize current losses"
17	811	Eq. 8.1	" qV_{bi} "	" V_{bi} "
18	816	Col. 1, para. 2, line 3	"intercept at $V_{GS} = 0$ "	"intercept at $g_D = 0$ "
19	818	Col. 1, line 3	"there is no current saturation regime. The"	"the"
20	845	Col. 1, line 2 after Eq. 8.65	"charge concentration $\Delta Q = \Delta n_s$."	"charge concentration $\Delta Q = q\Delta n_s$."

21	846	Col. 1, para. 2, line 3 after Eq. 8.73	“ k_D is the lifetime”	“ $1/k_D$ is the lifetime”
22	859	Fig. 8.77, compound 12	Incorrect molecular formula	Replace with: 