

Errata

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10 April 2013

- p. xi line 16, change “i-Phone” to “iPhone”
- p. xiv 5 lines from bottom – delete extra “if” in front of “heaven forbid...”
- p. 4 Line 11 "...over a satellite link to *the* other side of the world..." Add a “the”
- p. 7 box – 3 instances of changing “were” to “are” (line 2, line 3, and line 4). Also change “had” to “has” in line 5
- p. 7 line 1, change “i-Pod” to “iPod”
- p. 12 in equation (1.1) change 10100100 to 10101000
- p. 12 in equation (1.1) the last segment of the IP address has 9 digits instead of 8: “000000001” should be “00000001”
- p. 13 lines 4-5, eliminate the left zero on all bytes (ASCII is 7 bit) - 4 instances (e.g., 01000001 becomes 1000001)
- p. 16 line 7, change “1,073,742,146” to “1,073,741,824”
- p. 18 line 13, change “believes” to “point to”
- p. 19 line 10, add an “a” after “to” to read “is to a large measure”
- p. 27 line 9, “make such a thing” (add the ‘a’)
- p. 28 line 2, “would grind to a halt” (add a ‘to’)
- p. 30 Four lines from the bottom, change “100” to “1/100”
- p. 30 12 lines from the bottom, change “158 times” to “154 times”
- p. 31 line 1, change “power” to “powerful”
- p. 31 line 7. Change “waves” to “radiation”
- p. 33 Four lines above heading 2.3 – “micro/anoelectronics” is misspelled. Change to “micro/nanoelectronics”
- p. 33 Three lines from bottom, change “15 billion” to “100 billion”

- p. 33 Three lines from bottom, change “12 orders” to “11 orders”
- p. 33 Last line, change “ 1×10^{15} ” to “ 1×10^{16} ”
- p. 34 First line, change “12 orders” to “14 orders”
- p. 42 Line 1 - change “[or 0.4-0.7 terahertz (1×10^{15})]” to ” with “[or 429-750 THz (1 THz = 1×10^{12} Hz)]”
- p. 43 8 lines from the top, change “cells” to “cell” (strike the “s”)
- p. 43 Three/four lines up from bottom replace “e.g., red light, 0.7 THz” with “e.g., red light = 430 THz”
Replace “e.g., green light, 0.5 THz” with “e.g., blue light, 700 THz” ; and replace “infrared, 0.01 THz”
with “infrared, 10 THz”
- p. 44 Second paragraph eight lines down middle – change “ 42.78×10^{-7} kW hours” to “ 2.78×10^{-7} kW hours”
- p. 46 line 15, change “properties” (add an ‘r’)
- p. 48 line 10 “infinitesimally” (add an ‘i’)
- p. 50 line 5 inside Geek Trivia: change “DynaTA” to “DynaTAC”
- p. 53 line 9, “($< 1 \times 10^{10}$ Hz–10 GHz in frequency)” should be “(< 1 MHz – 10 GHz in frequency)”
- p. 55 7 lines from the bottom – add “up” after “pick” to read “to pick up some milk on the way home”
- p. 67 last sentence should read “proper handling” (add the “l”)
- p. 68 2 lines above Section 4.2. Change “choked” to “chock”
- p. 75 caption of Figure 4.7. change “Gugliemo” to Guglielmo”
- p. 87 line 9 “Bell Labs” (strike the ‘s’)
- p. 88 Third line down from heading 4.5, insert an “a” in front of two-pronged assault
- p. 88 Seventh line down from heading 4.5, insert an “of” before the observed
- p. 91 line 1 of footnote, “It is sad to note that” (strike the ‘a’)
- p. 91 line 2, change “thryistor” to “thyristor”
- p. 94 line 1 of inset, “Bell Labs” (strike the ‘s’)
- p. 94 line 5 “created a near” (not ‘an’)
- p. 110 Paragraph four, fourth line– change “of” to “to”
- p. 111 5th line down in box. Change ‘its’ to ‘it’ (it executes)

- p. 111 13 lines down in box. Change “by a 1 – V potential drop -“ to “ by a 1 V potential drop –
- p. 111 14 lines down. Change “electrons states” to “electron states”
- p. 112 6 lines down. Drop the “)” after 0 K.
- p. 115 line 13, remove comma from “Why not?,” to read “Why not?”
- p. 119 in eqn. (5.11), to the right of the second equal sign from the left, $N_C N_V e^{(E_C - E_V)/kT}$ should be reversed to read $N_C N_V e^{(E_V - E_C)/kT}$
- p. 119 caption of Figure 5.17. Change “of an intrinsic semiconductor” to “of an n-type semiconductor”
- p. 120 line 4 – change “is it” to “it is”
- p. 122 second line after equation (5.14); for clarity, insert a “q(” before “1000” and a “)” after “- 0”
- p. 122 second line after equation (5.14), “p=1,000,” is missing the unit (cm³)
- p. 127 15 lines down, change “build” to “built”
- p. 131 footnote: use double quote after “Mother Nature!” not single
- p. 131 first line after bulleted list. Change “Afterall” to After all”
- p. 147 5 lines down. Change “1.602x10¹⁹ electrons/C” to “6.242x10¹⁸ electrons/C”. Also, on line 9, make the same change 1.602x10¹⁹ to 6.242x10¹⁸”
- p. 161 3 lines from the top. Change “Fig. 7.5” to “Fig. 7.7”
- p. 161 8 lines from the top. Change “Fig. 7.6 shows” to “Fig. 7.5 and Fig. 7.6 show”
- p. 167 1st paragraph, 5th line down, “an edge” not “a edge”
- p. 169 line 3 strike first “also” to read “Clearly one must also...”
- p. 170 in the caption of Figure 7.18, change “In_{0.53} Ga_{0.47} As” to “In_{0.53} Ga_{0.47} P”
- p. 172 8 lines from bottom, change “to” to “too”
- p. 175 line 11 in Caffeine Alert, change “Combing” to “Combining”
- p. 177 line 3 change “transistor” to “transistors”
- p. 179 2nd paragraph, 1st line, change “disposable” to “disposal”
- p. 180 last sentence of 2nd paragraph – “especially” is misspelled
- p. 181 1 line above equation (7.10). change “LPVCD” to “LPCVD”

- p. 182 5 lines from the bottom, change “There two basic” to “There are two basic”
- p. 183 line 16, change “of a etch mask” to “of an etch mask”
- p. 188 Fig 7.38. Drop the “Gate Oxide” in the top view (a). And add “the” in caption, “the photolithography”
- p. 189 bullet 8. The text should read, "dissolve all of the resist exposed to the UV light" (strike the 'not')
- p. 189 2nd paragraph, 1st line, add a comma after “First”
- p. 189 5 lines into the first paragraph, change “peak” to “peek”
- p. 195 6 lines from the bottom, change “its” to “it’s”
- p.196 last sentence of box – it has to do “with” traps
- p. 200 bullet number 2 should end in a period
- p. 202 line 3, change “protects” to “protect”
- p. 203 line 2, add a comma after “home”
- p. 205 second paragraph, line 2, add “a” after “into” to read “into a useful”
- p. 207, 6 lines from the bottom, add a comma after “ME”
- p. 209, 6 lines from bottom, “ensure an average” (add “an”)
- p. 216 last sentence of the first paragraph of Section 8.2.1, it says "...it can no longer *by* interpreted as a logical “1”. Should say "be" instead of "by." Also, move period after “1”.
- p. 216 14 lines below Section 8.2.1, change “produce a output voltage” to “produce *an* output voltage”
- p. 223 In Figure 8.6 Φ_p should extend from $E_{F,p}$ upward (not $E_{i,p}$).
- p. 229, in the third sentence of the last paragraph, it says "...actually measure *it* you took a real pn junction." Should be “if”.
- p. 231 line 6 within “Smoking a Device” – change “coop” to “co-op”
- p. 233 Caffeine Alert #1 – end of line 2 – change “If n_{in} is number” to “If n_{in} is (the) number”
- p. 233 in eqn. (8.8), eliminate final “+” inside the parenthesis
- p. 235, Section 8.4, fourth line of the paragraph "...logic (one can in fact trivially *built* such a binary logic)." Should be "build," not "built."
- p. 244 8 lines down: change “transconductance” to “transimpedance”

- p. 244 9 lines down: change “transimpedance” to “transconductance”
- p. 245 14 lines down, the text reads "The 40,000A running through 10 cm² corresponds to a current density of about 127 A/cm² for our lightning bolt." Change to "The 40,000 A running through *a 10 cm diameter column* corresponds to a current density of about 509 A/cm² for our lightning bolt."
- p. 246 lines 3 and 4: “the way they (are) designed” (add “are”) and “attributes that ~~the~~ BJTs” (remove “the”)
- p. 252 On the first line the "VDS,sat" is all a subscript instead of being in normal sized font
- p. 250 last line change “can design a needed value” to “can design the needed value” (change “a” to “the”)
- p. 258, line above equation (8.22). Should say “take the derivative of Eq. (8.20)]” i.e., (not (8.22.))
- p. 258, 2nd line from the bottom of the page, the text reads "imput resistance," rather than "input resistance."
- p. 270-302, in Chapter 9 – use of “MEMSs” and “NEMSs” is non-standard and awkward. Please change all instances of MEMSs and NEMSs to MEMS and NEMS – note, as defined they are already plural: MEMS = micro-electro-mechanical systems (note the ending “s”)
- cases: p. 271 2nd paragraph, line 2; line 3 (2x); line 12; p. 275 after 9.2 title, line 1; p. 276, line 16; after 9.3 title line 1; p. 286, line 3 from bottom; PLEASE check for others instances
- p. 271 About halfway down the second paragraph, it says "exploit a combination of electrical mechanical and/or properties" instead of "exploit a combination of electrical and/or mechanical properties"
- color plate section, caption 12, change “application processor to “applications processor”
- color plate section, caption 45, change “SEH” to “SEM”
- color plate section, caption 15, change “silicon water” to “silicon wafer” (‘t’ to ‘f’)
- p. 278 line 10, add “go” after “could” to read “could go on”
- p. 286 Starting at the end of the 5th line it says,"(one the angled crystal planes)" instead of "(one of the angled crystal planes)"
- p. 291 4 lines from the bottom of the Geek Trivia: change “turbo” to Turbo” – capital “T”
- p. 292 last line: change “electronics is then” to “electronics are then” (“is” to “are”)
- p. 297 line 10, change “420,000” to “442,000”
- p. 304, in the last line of that first paragraph, it should read "Nope, it was *not* so until..."
- p. 304 3rd paragraph, 7th line, put a period after “W” to read “W.”

- p. 310 line 5, strike the comma after “satellites”
- p. 310 line 19, move the period inside the parenthesis to read “up in space.)”
- p. 311 line 14, change “Timation” to “Timation-1”
- p. 316 paragraph 3, line 8, change “alamanac” to “almanac”
- p. 344 line 2, change “18 TW” to “about 1 kW/m²”
- p. 387 poem, first line of the Confucius poem has no indent. Please align.
- p. 387 2nd line, change “breath” to “breathe”
- p. 395 seven lines from the bottom, change “solution” to “solutions”
- p. 406 four lines from the top, change “CNT” to “CNTs”
- p. 407 eleven lines from top, after “200,000” add “cm²/Vs” to read “200,000 cm²/Vs”
- p. 420 Figure 13.3 caption, change “Gorup” to “Group”
- p. 422 paragraph 5, line 5, change “stuff” to “stuff” (inconsistent quotation marks)
- p. 433 bullet 16, change “SOCOM:” to “SOCOM 3: U.S. Navy SEALs”
- p. 437 line 2, change comma to period after “gene”
- p. 465 under “lithography” – change “effect” to “affect”
- p. 469 in the index all items in the Glossary (pp. 463-467) are off by 2 pages in the index!