

Errata

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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 “thrysistor” 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!