

Errata

Below are known errata in my PhD thesis (the version submitted on 20 November 2015).

Page 14: the first paragraph, “with a Cu/BTO/La_{0.7}Sr_{0.3}MnO₃ (LSMO) structure” should be changed to “with a Cu/PZT/La_{0.7}Sr_{0.3}MnO₃ (LSMO) structure”.

Page 22: Equation (2.11), the “=” sign means “is proportional to” rather than “is exactly equal to”.

Pages 31: Equation (2.17), the “=” sign should be changed to “//” sign which means “is parallel to” rather than “is exactly equal to”.

Page 34: Table 2.3, on the third row from the bottom, “p-MTJ” should be changed to “i-MTJ”.

Page 38: Equation (3.2) should be changed to “ $P(E_x) \propto \exp\left\{-\frac{2}{\hbar} \int_0^d \sqrt{2m[\varphi(x, V) - E_x]} dx\right\}$ ”.
This is a typo.

Page 75: the second paragraph, “Theoretically, smaller access transistor leads to” should be changed to “Theoretically, larger access transistor leads to”.

Page 79: Table 4.4, the intersection of headers “High read reliability” and “Access transistor size” should be “Smaller”.

Page 94: Figure 4.22, “ $V_{TH} - \frac{V_{DD}}{2}$ ” should be changed to “ $\frac{V_{DD}}{2} - V_{TH}$ ”. This is a typo.

Page 116: Equation (5.10), η should be written as η_{SH} . This is a typo.

Page 122: Equation (5.14), here the expression of ξ was not shown. It is $\xi = \gamma\hbar/(2et_F M_s)$. Note that the meaning of ξ in Equation (5.14) is different from that in Equation (5.13) or (5.21).

Page 125: Figure 5.12, the legend “ ξ_{FL-STT} ” should be changed to “ ξ_{FL-SHT} ”. This is a typo.

Page 129: Figure 5.14(c), the label in the vertical axis of m_z curves, “-1” and “1” should be swapped. This is a typo.

Page 131: Table 5.3, the dimension of heavy metal strip should be “60 nm × 50 nm × 3 nm”.
This is a typo.

Page 132: the last line, “After 0.5 ns, ‘EN_W’ is set” should be changed to “After 0.5 ns, ‘EN_SHE’ is set”. This is a typo.

Page 179: “delta_aver = sqrt(2.0*kB*T/E_thermal)” should be changed to “delta_aver = sqrt(kB*T/(2.0*E_thermal))”. This is a bug. Nevertheless, it has negligible impact on the spin-

Hall-assisted STT switching, since it only changes the initial polar angle which is usually rather small. This is the possible reason why this bug was not detected during the simulation. This bug did not spread because it was found in early 2016. Actually, the electrical model of spin-Hall-assisted STT MTJ has been improved for many versions in the past few years.

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