

Citing Equations in IEEE

Equations may be cited either in the introductory material before they appear or in the concluding sentence material after they appear. Do not, however, use one citation at the beginning or end of a section to “cover” the entire section (i.e., “All the equations in this chapter are sourced exclusively from [2]” is incorrect). **A reader may be referencing equations, paragraphs, or subsections individually, which is why the citation should always be clear for individual equations throughout.**

You may weave the source into the narrative; for example:

The author applied the X method [4], to describe ...
The derivation that follows is summarized from [4].

Here is a specific example of citing properly **before** the equation:

Temperature dependence of the E_G is described in [27] as

$$E_G(T) = E_G(0) - \frac{C_a T^2}{(T + C_b)} \quad (44)$$

where C_a and C_b are table constants and material dependent. Open-circuit voltage V_{OC} is related to J_0 by

$$V_{OC} = \frac{kT}{q} \ln \left(\frac{J_{SC}}{J_0} + 1 \right) \quad (45)$$

Source: J. E. O'Connor, “Design and simulation of novel high-efficiency, back-contact solar cells,” Ph.D. dissertation, Dept. Elect. and Comput. Eng., Naval Postgraduate School, Monterey, CA, 2017.

And here is a specific example of how to cite an equation **after** it is presented; the equations must correctly function grammatically as part of the sentence text:

$$p + N_D^+ - n - N_A^- = 0. \quad (11)$$

For n -type material, we assume that $n = N_D$. For p -type material, we assume that $p = N_A$ and that $n \ll p$. The E_F in n -type and p -type semiconductors is calculated as

$$E_F = E_i + kT \ln \left(\frac{N_D}{n_i} \right) \quad (12)$$

and

$$E_F = E_i - kT \ln \left(\frac{N_A}{n_i} \right) \quad (13)$$

respectively [22].

Source: J. E. O'Connor, “Design and simulation of novel high-efficiency, back-contact solar cells,” Ph.D. dissertation, Dept. Elect. and Comput. Eng., Naval Postgraduate School, Monterey, CA, 2017.

This style matches the guidance from *The LaTeX Companion*:

From the famous inequality math relation [1]

$$y \neq x \tag{1}$$

Or you can also say:

$$y \neq x \tag{2}$$

as proved by [1]

References

[1] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The LaTeX Companion*. 1st ed. Reading, Mass.: Addison-Wesley, 1994. 528 pp.

Source: TeX. (2017, Apr. 21). Citing the source of an equation? [Online]. Available: <https://tex.stackexchange.com/questions/82776/citing-the-source-of-an-equation>