



**"Physics in Canada"
Book Review**

**"La Physique au Canada"
Critique de livre**

An Analog Electronics Companion: Basic Circuit Design for Engineers and Scientists,
Scott Hamilton, Cambridge University Press, 2003, pp: 668, ISBN 0521798388 (hc);
Price: US\$120

The author's stated intention was to not write a textbook on circuit design, but to provide a book that will serve to refresh non-experts on electronic circuit basics. Parts 1 and 2 of the book review mathematical tools and basic physics concepts relevant to circuit analysis. Part 3 examines circuit analysis techniques. Part 4 addresses common circuit components, including external effects that can cause deviation from expected values (eg, temperature or voltage effects). Part 5 focuses on the use of the provided circuit simulation software (see below) to analyze a range of circuits. Numerous references are provided at the end of each chapter.

A CD-ROM containing an evaluation copy of the circuit simulation software PSpice (a form of the more generic software, SPICE) is included with the book. This software models the behaviour of circuits containing analog and digital devices. The CD also includes circuit examples discussed in the book. Text figures are referenced to circuit files provided on the CD.

Circuit simulation software wasn't commonly available when I was in school, but I can see that its use would be much less frustrating than my efforts at calculating currents around circuits. Or would it be? Chapter 5.27 lists pages and pages of "helpful hints" for avoiding annoying and difficult to diagnose problems when setting up and simulating circuits using the software. Overall, though, the availability of circuit simulation from the comfort of one's computer, without actually touching a circuit board, would certainly lead to a faster and broader appreciation for the behaviour of various circuits under different conditions and stimuli. However, as the author points out, a simulation is only an approximation, and to be successful you will have to actually build your circuit and try it out.

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