



# WebSights

**Dan MacIsaac, Column Editor**

Physics Department, SUNY-Buffalo State College,  
Buffalo, NY 14222; macisadl@buffalostate.edu

*WebSights* features reviews of select sites presenting physics teaching strategies, as well as shorter announcements of sites of interest to physics teachers. All sites are copyrighted by their authors. This column is available as a web page at <http://PhysicsEd.BuffaloState.Edu/pubs/WebSights>. If you have successfully used a site to teach physics that you feel is outstanding and appropriate for *WebSights*, please email me the URL and describe how you use it to teach. The person submitting the best site monthly will receive a T-shirt.

I've been assembling links for a course in Electronics, hence these links dedicated to teaching and learning about introductory circuits and electronics:

- <http://socrates.berkeley.edu/~phylabs/>

The University of California at Berkeley Physics department has their *Physics 111 Basic Semiconductor Circuits Laboratory* manual online, containing a number of student activities mainly in linear electronics, with limited digital and LabVIEW work. That course is currently taught by Jim Siegrist, and Tom Colton brought this site to my attention.

- <http://micro.magnet.fsu.edu/electromag/>

The National High Magnetic Field Laboratory at Florida State University has a collection of electronics resources in their Molecular Expressions Electricity and Magnetism Tutorial pages including tutorials with JAVA applets suitable for learning about capacitors, CRTs, Drude model (atomic level) resistance, electric generators, Lentz's Law, reading resistor color codes, Ohm's Law, Radio, RC circuits, and transformers and electromagnetism. This site includes a particularly nice animated illustration of the lithographic, deposition, ion implantation, doping, sputtering and etching processes involved in manufacturing a Field Effect Transistor (FET) at <http://micro.magnet.fsu.edu/electromag/java/transistor/>. Also at this site is an interesting collection from a subculture of artwork called the Silicon Zoo—a collection of atomic level artwork created by chip designers, some found in the borders and crannies of production chips. Other microscopy artwork of arcane crystals are quite amusing as well.

- <http://www.tek.com/Measurement/fundamentals/scopes/>

The XYZ's of Oscilloscopes by Textronix contains a 64-page primer on using modern (both analog and digital) oscilloscopes, probe compensation and so forth.

- [http://www.hobby-elec.org/e\\_menu.htm](http://www.hobby-elec.org/e_menu.htm)

Seichi Inoue's Hobby of Electronic Circuit Engineering pages show a particularly nice collection of photographs and explanation of electronic components, amongst many

other introductory electronics resources. Although the English is a little fractured in places, the images are first rate.

- <http://www.pbs.org/transistor/>

The PBS Special Transistorized has an associated site that presents the science and impact of the transistor, co-developed with the American Physical Society (APS).

- **The Physics Education Technology project** at the University of Colorado Physics Department <http://phet.colorado.edu/> has many nice simulations, including several on Electricity, Magnets, and Circuits. Particularly note a nice pair of circuit construction JAVA applets with some teacher written lesson activities for series and parallel circuits.

DOI: 10.1119/1.2691834

## Inexpensive science gadgets from Harbor

**Freight Tools:** <http://search.harborfreight.com/cpisearch/web/search.do?keyword=thermometer>

Bob Sciamanda of Edinboro University of PA Physics reports that the Harbor Freight Tools chain is selling \$10, \$27, and \$40 models of a very nifty noncontact IR thermometer. I'm still playing with my \$27 model, which uses a laser pointer to indicate the measurement point. Harbor Freight tools is also famous for other low-cost gadgets for teaching physics, including digital multimeters under \$10 and a \$13 digital scale both manufactured by Cen-Tech. They also sell a high-voltage "Electronic Fly Swatter" for under \$5, though we have yet to learn of a legitimate, peaceful use for this alarming device.

DOI: 10.1119/1.2691835

## An Online Database of Physics Teacher Opportunities:

A new online database collection of physics teacher opportunities such as Research Experiences for Teachers (RETs), online courses, summer courses and workshops, events relevant to physics teaching, teacher scholarships and fellowships and so forth is being assembled at <http://ptec.org/>. This compADRE website is sponsored by the APS and the AAPT through the Physics Teacher Education Coalition (PTEC), amongst many other partners. Your contributions are solicited and welcome.

DOI: 10.1119/1.2691836