Following the Link of the Least Resistance

The current world record of the superconducting critical temperature T_C (138 K) is blinking in green. The smell of a tight race is in the air. You feel that something important is going on. You do not even realize the adventure of the superconductors world when you are already a captive of its game. And you want to play it…

This is how your adventure in the superconductors world might have started. Joe Eck's website (Figure 1) aims to

Figure 1. Superconductors on the web ...

be a set of "consolidated superconductor fundamentals under one roof." But it is more than that, an excellent education site for the beginner, and a frequently updated compendium of accurate data for the professional. The information is vividly presented, proving the true passion of the author for the still mysterious macroscopic quantum phenomenon of superconductivity. And I have often caught myself surfing through the most exciting news page, which is so up-to-date (refreshed at least twice a week!) that you may be tempted to stop reading journals, and safely get the information about the novelties from this truly comprehensive website instead.

The site is composed of some 40 pages on various aspects of superconductivity. For example, it shows the history of superconductivity in a pill, accompanied by the portrait gallery of H. K. Onnes, J. Bardeen, L. N. Cooper, and J. R. Schrieffer, then B. D. Josephson (a photo might be included of his early times as a student in Cambridge, when he predicted the tunneling effect), and finally of K. A. Müller and J. G. Bednorz. Those of W. Meissner and R. Ochsenfeld should definitely be added, to pay tribute to their discovery of the unique perfect diamagnetism (1933). Discovery of the infinite-layer oxocuprates and of the oxohalide superconductors ("apical oxygens" story) is also worth mentioning on the history page.

Another page gives the reader information on the use of superconductors in modern technology. One can learn about recent advances in fault current controllers, high-power cables and motors, petaflop computers, ultrahigh-frequency radiation filters, magnetic-levitation trains, and more. The rapidly growing superconductors business (currently valued at some 3 billion dollars a year), is convincingly presented. After visiting this page, a philosopher would certainly think of the absolute zero and the perpetuum mobile. A nonscientist would be astonished by the miraculous world of modern innovative technology, brought to the daylight "simply" through perfectly free flow of electric current in a superconducting material. And a highly specialized creature of an "oxocuprate-ist" would learn about the variety of atypical superconductors with often surprisingly high critical temperatures.

This website endeavors to give readers the rhythm of a palpitating and rapidly progressing science, and it grasps many diverse topics. The online chemical community would greatly benefit from other sites of similar quality.

Of course, there is always room for improvement. Some might say what lacks in this website is a page devoted to theoretical aspects of superconductivity. Maybe. For sure, the aesthetic side could be somewhat improved: Some breathtaking pictures of magnetic levitation are missing (Figure 2). I would present more systematically the naming scheme of the oxocuprates (11, 123, …)

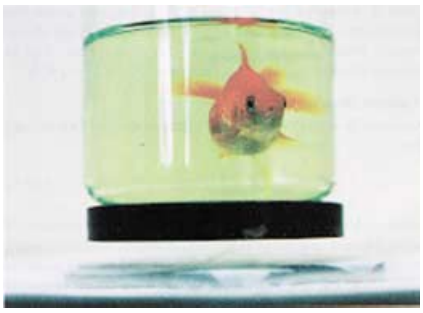

Figure 2. Does it know about the Meissner effect?

in the terminology page along with some illustrative crystal structures.

Suggest a web site or submit a review:
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If you want to learn more, do not stop here. But you do not need to seek far, either! Eck's website gathers a multitude of links to other great academic or industrial superconductor websites. No wonder there are so many visits at this site (over 800000 in the past year). It is strategically located at the intersection of instructive teaching and popular science.

If the number of visitors continues to grow at the current rate, the author will hopefully celebrate a million visitors in 2011, which marks the first centennial of superconductivity. And I bet that if mankind discovers the long sought room temperature superconductivity, we will learn of it from Joe's website in a blink of an eye.

Superconductors.org is *the* website for the trip to the endlessly fascinating phenomenon of superconductivity. And it seems that I am not the only one who thinks so. These pages load without resistance.

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For more information visit
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