

Author Affiliation Addition

Eric J. Heller's colleagues in the chemistry department of the University of Washington were pleased to read his feature article with Steven Tomsovic on "Postmodern Quantum Mechanics" (July 1993, page 38). During his years in our department Rick made many excellent contributions to our teaching and research programs. (Rick also, it should be noted, held an appointment in the physics department.) In return, the University of Washington supported his efforts generously, particularly in the area of state-of-the-art computing facilities, even in times of significant budget cuts. Indeed the fine color graphics shown in his article, and the basic theory underlying them, were all made possible by the support of our university.

For this reason we were very surprised to find his affiliation given as Harvard University and the Harvard-Smithsonian Center for Astrophysics. Rick took up his appointment in Cambridge on 1 July and we all wish him well in his new position. Right now, Rick is in transition, and members of his research group remain in this department busily using our facilities to study postmodern quantum mechanics. I guess that in the context of Rick's given affiliation "postmodern" must be interpreted as recognizing future employment!

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Cold Fusion: Still a Hot Research Topic?

David Williams's review of John R. Huizenga's unrepentantly negative book *Cold Fusion: The Scientific Fiasco of the Century* (January 1993, page 73) contains disturbing and false assertions. Williams says, "now investigations on so-called cold fusion are confined to only a few laboratories," a claim that is entirely without foundation.

The recent Third International Conference on Cold Fusion in Nagoya, Japan, supported by seven Japanese physical societies and attended by over 350 participants (representing over 70 Japanese companies, universities and institutions), is a stark warning to uninformed "experts" like Williams. At Nagoya there were also over 50 scientific representatives from US corporations and Federal laboratories. Scien-

tists who are currently engaged in cold fusion work came to Nagoya from 15 countries. Ya. R. Kucherov from Russia described his remarkable excess-heat results and multiple-channel nuclear product detections in reproducible palladium-deuterium glow discharge experiments.¹ Cold fusion experiments and theorizing continue at some 24 laboratories in Russia.

Cold fusion research is in fact growing rapidly, not declining, despite Huizenga's and the US Department of Energy's role in branding the phenomenon "pathological science." If Williams (or anyone else) wishes to see the impressive list of attendees at Nagoya and their affiliations, I will gladly mail him the list; it has already been sent to the appropriate high officials in the Clinton Administration and in Congress who may influence energy research policy. Moreover, Williams cannot be unaware of the Japanese Ministry of International Trade and Industry's cold fusion program, which was formally initiated last year.

Williams says that Huizenga "reserves some of his best polemic" for the cold fusion theorists "who seemed to crawl out of the woodwork." Are we to understand that theorizing about mysterious phenomena is not an integral part of physics?

Williams says that public presentations on the topic of cold fusion "tend to fudge experimental details." What presentations is he writing about? He did not attend either the first (Salt Lake City), second (Como, Italy) or third international conferences on cold fusion. Who is Williams to lecture cold fusion researchers for their "fail[ure] to distinguish . . . what is real from what is imaginary," when he has been nearly completely disengaged from the field since 1989? As Williams knows, his own 1989 Harwell experiments, which supposedly failed to confirm cold fusion, are currently being reviewed by several researchers who are experienced in signal processing of time-series calorimetric data. One study of the Harwell data has already been published in the proceedings of the Third International Conference on Cold Fusion, and it shows that excess heat *was* in fact measured in at least one of the Harwell cells in ten time intervals.²

Miraculously, Williams's apparent lack of involvement in cold fusion research has not prevented him from discovering what the cold fusion phenomenon really is! Williams ends his review: "There may in fact exist in the palladium-hydrogen system, under circumstances that remain ill de-

fined, a release of stored energy as heat. . . . But what profit is there in such an inefficient, unreliable, dangerous and expensive energy storage method?" In this remark he is only one degree better than Huizenga, who has recently written, "At best, the cold fusion fiasco may lead to new information in electrochemistry, *but even this has not been established*" (italics added).³

Now if cold fusion is merely an "energy storage method," how are we to understand the published SRI International results,⁴ which indicate a fantastic "energy storage" in palladium of 45.1 MJ/mole of Pd atoms? This obviously seems to be far beyond what can be explained by any known chemical bonding mechanism. The Pons-Fleischmann repeatable boiling cell experiments, in which tens of milliliters of heavy water are totally evaporated within 10–30 minutes, exhibit "storage" energies on the order of 200 eV per atom in the boil-off phase alone. It is not uncommon these days for cold fusion researchers to demonstrate excess energy releases that would require "storage" on the order of 20 000 eV per cathode atom.

The cold fusion phenomenon, in the view of many active in the field, is a spectacular new form of lattice-induced nuclear energy whose mechanism is still poorly understood—as the mechanism of low-temperature superconductivity was for many decades. That the nuclear products that have been found *so far* are incommensurate (by conventional theory) with the non-chemical-magnitude excess energies simply means that the results have to be explained by new physical mechanisms. It matters not at all to nature that the American Institute of Physics's journalistic publications refuse to comprehend this, but it matters a great deal to our economic well-being.

It will be deliciously amusing to see many US physicists, who are now so negative, run pork-barreling fast to the trough of cold fusion funding—both private and (hopefully) Federal—after the complete triumph of this startling new phenomenon and source of energy.

References

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2. M. E. Melich, W. N. Hansen, in *Frontiers of Cold Fusion*, H. Ikegami, ed., Universal Academic, Tokyo (1993), p. 397.
3. J. R. Huizenga, *Leaders*, January–February–March 1993, p. 23.
4. M. C. H. McKubre, R. Rocha-Filho, S. I. Smedley, F. L. Tanzella, S. Crouch-Baker, T. O. Passell, J. Santucci, in *The Science of Cold Fusion*, Proc. II Annu.