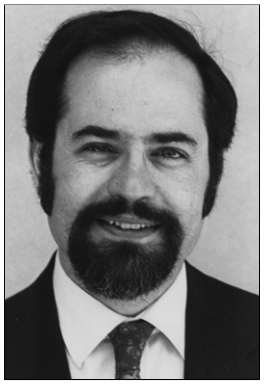
By Eugene F. Mallove, Sc.D.

Profiles of the Future . . .



We are pleased to be able to dedicate both the cover of this issue of *Infinite Energy* and several articles to Sir Arthur C. Clarke. He has been such an incredible inspiration to so many of us in our scientific and technological careers, it is difficult to know where to begin to thank him. And, Sir Arthur has put his reputation on the front line by declaring his support for cold fusion research and development in so many ways—most recently in *Science* magazine (June 5, 1998). He is a dear friend to us all, and a prophet of so much that is good in the world, as humanity extends its reach.

This issue of *IE*, dedicated to his tireless efforts, is but one small step to honor him. Sadly, many of his long-time friends have not paid attention to his calls for bare minimum standards in re-examining the cold fusion evidence. Instead, some of these colleagues, ignorant of what is really going on, have chosen to mock the field (see page 64). Others are just silent and indifferent— inexcusable silence, or is it *fear*? We hope that these friends of Sir Arthur will soon reconsider their positions—and the horrible consequences of indifference or mockery at this fateful hour.

Cold fusion is now at a crucial turning point, as the very welcome November 1998 issue of the influential, high-technology *Wired* magazine suggests in its landmark article by Charles Platt, Dirty Science: The Strange Rebirth of Cold Fusion. See our Briefs section commentary on Platt's article, in this issue of *IE*, page 29.

Platt's incisive 18-page treatment ends with this warning: Even if major funding is obtained for cold fusion, conceivably the phenomenon could suffer from problems as intractable as those of hot fusion. It may never work reliably, or generate enough energy to be commercially viable. One thing, though, is certain: If it remains the poor stepchild of science, starved into obscurity, we'll never have a chance to learn what we may be missing.

Indeed, the reliability of cold fusion processes—both light water, heavy water, and high-temperature gas phase—is a serious issue that has been holding the field back and preventing the rapid introduction of commercial prototype units. The energy density (already several kilowatts per cubic centimeter of active material) is not an issue, we believe, but consistency of operation *is*. Dr. Edmund Storms (Los Alamos National Laboratory, retired) is among the very best authorities on the difficulties of the original Pons-Fleischmann, heavy water-palladium cold fusion approach. He summarized the state of this system in his presentation at the Cold Fusion/New Energy Symposium in New Hampshire (October 11, 1998):

What can I conclude from this experience? First, the phenomenon claimed by Fleischmann and Pons is real, but is only a small part of a much larger picture. The reality of this phenomenon has an even greater importance to science and technology than was originally proposed. Second, the method used by Pons and Fleischmann is useless for the eventual production of commercial power. Active palladium is too difficult to find and the conditions are too sensitive to impurities. Nevertheless, it is a very useful and inexpensive method to explore certain aspects of the phenomena. It is unfortunate that these brave and creative thinkers had to take so much pain and be denied the rewards of their discovery by close-minded colleagues and an incompetent Patent Office. And third, major sources of funding of financial support have dried up, many self-funded individuals are moving on, and conventional rejection has solidified. Those of us who would like to see this field grow are encouraged by a few successes, such as Case, Arata, and Stringham, but even these approaches are woefully underfunded and are being studied by a very small number of individuals.

New approaches are, indeed, required, if the field is to progress. We are very optimistic that several of them could succeed in creating reliable and high power-ratio devices, but these technologies may never come into being (unless we are very lucky), if the field is starved into obscurity, in Platt's words. There is no *if* about it. The field already *is* being starved into obscurity!

Despite starvation (and *ridicule* while we are starving), we carry on—hoping that we will be able to break the horrible Catch-22: Little funding because the irrefutable, commercially available excess energy-producing demonstration unit is not at hand, and not being able to develop that unit because funding is inadequate.

Charles Platt quotes *Infinite Energy* contributing editor Jed Rothwell's assessment of cold fusion's present status: Very little happens. People putter along doing pretty much the same thing year after year. They are old and work slowly, and they have no funding and no equipment—so jobs that ought to take weeks, take years instead. Jed is a hard-nosed realist if ever their was one. He is absolutely right.

Will the immediate future hold more of the same deprivation and inability to move forward boldly? Possibly, but possibly not. The eternal optimist within me does battle daily with the co-existing depressed pessimist, whose alarms are endlessly ratified by external happenings. When I am optimistic, I see the rabbit of success suddenly being yanked out of the hat in some laboratory—either here or elsewhere. When I am pessimistic, I see more of the same roller coaster ride extending into the indefinite future.

At the moment, I see the best hope in the work of Dr. Les Case here in New Hampshire. He has scaled up his attempt at a self-sustaining, heat-producing device that can hold up to a kilogram of palladium-carbon catalyst. For the past two months he has had a small deuterium gas-containing unit continuously operating at 215 ° C, 35° C above the ordinary hydrogen gas baseline temperature produced by an electrical heater consuming identical power. An analysis in this experiment by thermal heat transfer expert Don Slack (page 50) suggests that this kind of temperature anomaly cannot be explained by any vagary of the difference in heat transfer between hydrogen gas and deuterium.

The other good news about this system is that it has attracted the attention of the expert group at SRI International, Dr. Michael McKubre's group. They are working on it right now, and have apparently attracted some funding from a branch of the U.S. military research community. At ICCF-7 in Vancouver last April, McKubre was already bullish

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about Case's device. Then came the work of Russ George (now at Saturna Technologies, Inc.), who used the SRI mass spectrometer on-line to determine that helium-4 was building up with time in an apparently excess energy-producing Case catalytic fusion replication that he constructed. The helium built up to over 10 ppm, twice atmospheric level, essentially ruling out contamination as an issue. No helium built up in an ordinary hydrogen gas blank cell that ran in parallel. As we went to press, Russ George was about to go to Pacific Northwest National Laboratory in Richland, Washington to have his replication of Case's work duplicated and verified by an independent team.

Despite setbacks in the evaluation of the Ohmori-Mizuno approach to cold fusion which first appeared in *IE* #20 (see David Marett's article in the present issue, p. 20), we also have Dr. Mizuno's detailed report that the Marett approach is not a valid replication of their work. Also, we have the encouraging report from Dr. Phyllip Kanarev in Russia (page 31) that his molybdenum cathode, titanium anode plasma-electrolysis device with flowing electrolyte has been validated by independent testers. This plasma-electrolysis is certainly a very appropriate term for the whole class of experiments, such as Ohmori-Mizuno and AquaFuel™ or Carbo-Hydrogen™ gas, that employ either underwater arcs or plasma sheaths around metal electrodes. How these systems should be evaluated in their energy balance is presently an evolving science. These are very violent reactions with more complex energy bookkeeping than may be apparent at first glance.

So, which profile of the future to imagine? The one in which cold fusion is starved into obscurity and dumped down one of history's many black holes, or will it be the one in which the rag-tag cold fusion underground gets its hands on the ultimate guerrilla weapon: the irrefutable demonstration device that begins circulating and overcomes all opposition?

Time is not necessarily on cold fusion's side. The tenth anniversary of the cold fusion announcement is fast approaching, March 23, 1999. Will it be a grand victory celebration, or an occasion for more mockery by ignorant journalists and recriminations within the field? We hope for the former, but we have been conditioned to expect the latter. Perhaps like the Eveready Battery Bunny in the famous TV ad we can go on and on and on banging our drums, but it would be so much better if these drums and cymbals were powered by working cold fusion reactors in hundreds or thousands of

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To the Editor:

I've procrastinated long enough. I really enjoy your magazine; it's a breath of fresh air, makes you think and shows all the hard work and professionalism that you put into it.

One can only take so many sound bites and media hype. It's kind of funny that "the truth is out there" came from the tube.

So sign me up for two more years - check enclosed. I think Dr. Randell Mills is on one of the right tracks. He's on to something that will "rock our world" and the theory, simplicity and all came from the same sun that the Egyptians revered as the key element of their religion.

I know you will keep up the good work. As your subscriptions grow, consider lifetime subscriptions like *Mother Earth News* did in the 1970's to help them with their costs.

Richard Yobak
Pine, CO

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The following are comments from our online guest book and www information site.
http://www.infinite-energy.com

"I would like to commend those who made impressive improvements to the presentation of your website. This site looks professional and is structured well for a layperson. . . Thank you for your continuing pursuit of the presentation, development and application of earth-impacting technologies." Christopher Holloman

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"I have seen some sites that say cold fusion isn't possible, but people generally say that about anything scientifically significant to the welfare of our planet. If scientists were not around, we would still be in the stone age." Michael Smith

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"Make some of the papers available online. Add a research forum for interested parties to interact on various topics. Give online tutorials for those who don't know these areas or want to know more." Robert Neil

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"I think that the realistic approach you present is likable...Steven Greer and Brian O'Leary are important and I like very much Richard Hoagland's valiant attempts to make dramatic breaks. I don't know why Valerie Hunt doesn't have a website, but maybe I just don't know how to find her. Gene Mallove and those people are the most important people alive right now, I believe. This is an hour that places us on the verge of civil war against the controllers of technology. I believe that it would be best to put the ideas on the net so everyone can build energy devices as soon as possible. I think everyone should give up on the idea of making money on free energy devices. This is not a money maker, except at the manufacturer's level."

John C. Durham

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"Since March 1989, I have read with great interest that different groups have developed various devices (*e.g.* CETI, Cincinnati Group, etc.) which either produce excess energy or create anomalous nuclear effects at low temperature. Some of these devices have developed further than others, most notably Blacklight Power Co. and CETI. Could *IE* do more by way of follow-up on the working devices? For example, I recall CETI made 'kits' available to anyone who wanted to purchase them. Who has purchased them? Have any kits been given to independent universities or private labs (other than Dr. George Miley or Dr. Bowles) to confirm the spectacular results? Perhaps this has occurred and the positive results are kept quiet for commercial reasons. It is incredible that such developments avoid disclosure and that establishment 'science' can continue to ignore the results when a device like CETI's is readily available... I continue to be excited about the prospect of a completely unanticipated development in physics/chemistry. Like most of your readers, I am confident we are in the middle of just such an upheaval in science/technology. I am extremely grateful to you for your hard work in creating and continuing *Infinite Energy* magazine."

Albert Joseph

CORRECTION FROM ISSUE #21

David Samuel is President of Nuclear Solutions, not Dr. Paul Brown as indicated on the cover. Brown is Vice-President.

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labs. Sir Arthur hopes that all the hand waving will soon come to an end and that we will all be able to celebrate the optimistic *Profile of the Future* for which we hunger. Let's win this one for the man who really did predict cold fusion and the age of modern alchemy (see page 9). Sir Arthur deserves at least this much as he navigates his ninth amazing decade, onward to 2001 and beyond.

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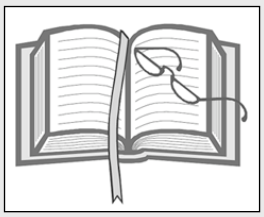
"Those that flatly refuse to seek the truth, but yet regard themselves as innovative free-thinkers. . ."
—Francis Bacon

Advancement of Learning, 1605



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