Trip Report: ICCF11

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Introduction

On March 23, 1989, at the University of Utah, Martin Fleischmann and Stanley Pons announced that they had caused fusion reactions between deuterium nuclei to occur at room temperature, creating a potentially endless and benign source of energy for the world. Of course, this flew in the face of conventional physics, and scientists all over the world hurried to try to reproduce the effect. The major institutes in the US were unable to do so, and a US Department of Energy (DOE) Energy Research Advisory Panel (ERAB) declared that the effect was not real and that government funding for further research would essentially constitute waste, fraud, and abuse. Thus died the hope of cheap, endless energy through "cold fusion," at least as far as the regular scientific community was concerned.

On October 30 through November 5, 2004, I attended the 11th International Conference on Cold Fusion in Marseilles, France. (I had previously attended ICCF10 in Cambridge, Massachusetts.) As shown in Table 1, 163 people from all over the world came to Marseilles, including those who actually did achieve success after the 1989 announcement, those who heard about and joined the ongoing research, and those who are just excited about the prospects and want to stay in close touch with the field. Appendix A lists both people who attended and people who contributed to material presented at the conference.

Table 1. Attendance at ICCF11.

Country	Number of Attendees	Country	Number of Attendees
Australia	1	Morocco	1
Belarus	1	Nigeria	3
Canada	2	Romania	2
China (P.R.)	3	Russia	16
France	28	Spain	1
Finland	1	Switzerland	4
Germany	8	Netherlands	1
India	1	UK	6
Israel	6	Ukraine	1
Italy	25	USA	39
Japan	13		163
		Total	

One of the premier cold fusion scientists was unable to attend. Yoshiaki Arata from Osaka University was receiving a medal from the Emperor of Japan at the same time as the conference was taking place. Arata is considered possibly Japan's greatest living physicist, and has received at least one other medal from the Emperor.

The ICCF series is not the only conference on cold fusion held in the world. In Japan, the Japan CF (Coherent Fusion) Research Society (English web page) http://wwwcf.elc.iwate-u.ac.jp/jcf/indexe.html/ meets periodically. In Italy, Asti Workshop on Anomalies in Hydrogen/Deuterium loaded Metals meets every year or so. The 5th Workshop was held in March 2004 in Asti, Italy. In Russia, the Russian Conference on Cold Nuclear Transmutation of Chemical Elements meets every year. The 12th Conference was held September 19-26 in the city of Sochi. Occasional local meetings are held in Italy and Russia. Also, cold fusion sessions have been held at the March meetings of the American Physical Society (APS) since 1999. In addition, three symposia (1998, 2000, and 2003) have been held at American Nuclear Society (ANS) meetings.

The science of cold fusion has evolved from the original concept of fusion of deuterium nuclei in a palladium lattice at temperatures up to maybe a thousand Kelvins to include deuterium fusion in other metals, reactions of protons (protium) with nickel, and the transmutation of elements caused by these reactions. "Cold fusion" has given way to a new term: low-energy nuclear reactions (LENR). Beginning in 2002, at ICCF9, and continuing to the present day, a consensus has been evolving about the need for scientists in the LENR field to become better organized. During the last year, more formal action has been taken, based on the idea that the time has arrived for an international professional society of scientists involved in LENR research to be formed. During the 5th Asti Workshop and prior to ICCF11, plans for creating such a society were formalized, and the International Society for Condensed Matter Nuclear Science (www.iscmns.org/) held its first formal meeting in Marseilles during ICCF11.

As a sign of how things have progressed since 1989, the DOE agreed last summer to do a new review of cold fusion. The final report was supposed to be out by the time of the conference, but had not been completed by then. This new review was one of the chief items of interest and discussion at the conference, and everyone was hopeful that the review would finally validate LENR's. (Since the conference, the review has been released and, at first glance, seems mostly negative; see it at the following URL: http://www.er.doe.gov/Sub/Newsroom/News_Releases/DOE-SC/2004/low_energy/index.htm). A good description of the review can be found at http://www.newenergytimes.com/DOE/DOE.htm. However, an analysis of the material presented for review, the charge to the reviewers, and the actual comments of the reviewers (to be found at the New Energy Times Web site) reveals that the review was actually positive and that the claims of the LENR community are surprisingly acceptable to scientists not in the field.

In the sections below, I will describe the material presented at the conference and the conference itself. The abstracts are available in electronic form at www.iccf11.org/, and I have copies of many of the presentations. Preprints of the ICCF11 papers as they are

received will be made available at www.lenr-canr.org/. Formal publication of the ICCF11 papers will be as a hard-copy Proceedings, and the papers will subsequently be available at the ISCMNS Web site. Additional Web resources of information on LENR are the following.

- http://www.lenr-canr.org/
- http://www.iscmns.org/
- http://www.newenergytimes.com/
- http://world.std.com/~mica/cft.html
- http://infinite-energy.org/

Material Presented

Transmutation

History

Transmutation caused by deuterium nuclei has been known since at least 1934. Referring to deuterium as "diplogen" and deuterons as "diplons," Oliphant, Harteck, and Rutherford reported in Nature (March 17, 1934, **133,** p. 413) that diplons could react with light elements to create new elements. (This research was also reported in the Proceedings of the Royal Society at the same time.) Even prior to the Fleischmann/Pons announcement in 1989, the Russians were finding transmutation of palladium into other higher-Z elements after glow-discharge of deuterium into the palladium. Prominent among scientists doing this research were Irina Savvatimova and Alexander Karabut of the Federal State Unitary Enterprise "LUCH." Finally, George Miley of the University of Illinois Urbana-Champaign pioneered the LENR of protium with nickel. He showed that at the interface between a nickel film and a palladium film, where the reaction takes place, a wide variety of isotopes appears (see Miley's papers in the Library at http://www.lenr-canr.org).

Why Emphasize Transmutation?

In early research on cold fusion, the level of heat produced was often very low, and the calorimetry needed to show that this heat was excess enthalpy was extremely difficult, and the results were often open to question. Showing transmutation is less ambiguous. Given the capabilities of today's instruments, such as the X-ray photoelectron spectrometer (an example of which is offered for sale by conference attendee and presenter Veniamin Filimonov at http://www.spectroscan.megapolis.by/en), it is relatively easy to show that new elements have appeared after LENR's have been induced. For this reason, LENR researchers have recently put emphasis on showing that transmutation has occurred to demonstrate more conclusively to skeptics that reactions not allowed by conventional nuclear physics are taking place.

In addition, the transmutation reactions may well become very valuable in themselves. There are several groups exploring the potential transmutation of high-level radioactive waste into less dangerous isotopes. In other areas, there are potentially useful phenomena which are not possible without specific isotopes which are naturally rare. It may be

possible to produce specific isotopes through processes such as that developed by Iwamura (see below).

Transmutation Presentations

Yasuhiro Iwamura from Mitsubishi Heavy Industries discussed the continuation of research based on his famous 2002 transmutation paper (Jpn. J. Appl. Phys. Vol. 41 [2002] pp. 4642-4650). He is using x-radiation from the synchrotron at Spring-8 to further certify the existence of new isotopes on a test surface after subjecting it to gaseous deuterium. In the 2002 paper, he showed, in a very elegant experiment, that cesium on a palladium surface subjected to gaseous deuterium was transmuted to praseodymium and (in a separate experimental run) strontium was transmuted to molybdenum, the increase in atomic weight in each case being four protons and four neutrons (four deuterons). This experiment has been replicated at several other institutions in Japan and is also being investigated in the US at the Naval Research Laboratory. In the work reported at ICCF11, Iwamura showed that, with different experimental parameters, barium on a palladium surface is transmuted into samarium. This is an increase of six protons and six neutrons (six deuterons).

Vladimir Vysotskii, Kiev Shevchenko University, and Alla Kornilova, Moscow State University, presented research on transmutation reactions in biological systems. This subject is gaining increasing acceptance and is discussed in an excellent book: Nuclear Fusion and Transmutation of Isotopes in Biological Systems, V.I. Vysotskii and A.A. Kornilova, ISBN 5-03-003647-4. Material was presented on the possible transmutation of nuclear waste using special "microbial catalyst-transmutators" (MCT). Vysotskii and Kornilova also presented material on the structure of water (more complex than commonly supposed) and the effect this structure may have on transmutations which occur in water. This structure is also involved in water's so-called "memory," which is the basis for homeopathic medicines (which I've always thought was total nonsense, although I'm willing to keep an open mind). I've read about some excellent research in this area going on in Switzerland.

In addition to the above material, transmutation research at the following institutions was described.

- LUCH Federal State Unitary Enterprise in Podolsk, Russia
- Joint Institute for Nuclear Research in Dubna, Russia
- University of Lecce in Lecce, Italy
- Howard University in Washington, D.C., US
- Hokkaido University in Sapporo, Japan
- Purdue University in Lafayette, Indiana, US
- Proton-21 in Kiev, Ukraine
- Kiev Shevchenko University in Kiev, Ukraine
- Ente per le Nuove Tecnologie, l'Energia e l'Ambiente (ENEA) in Rome, Italy
- La Sapienza University in Rome, Italy
- SRI International in Menlo Park, California, US
- Naval Research Laboratory in Washington, D.C., US

- University of Siena in Siena, Italy
- University of Bologna in Bologna, Italy
- National Academy of Sciences in Belarus
- Instituto Nazionale de Fisica Nucleare, Laboratori Nazionali di Frascati (INFN-LNF) in Rome, Italy
- EURESYS in Rome, Italy
- ORIM Srl in Macerata, Italy
- Pirelli Labs in Milan, Italy
- Centro Sviluppo Materiali SpA in Rome, Italy
- Monti America Corporation in Kameloops, British Columbia, Canada
- STMicroelectronics in Milan, Italy
- University Lucian Blaga in Sibiu, Romania
- Tsinghua University in Beijing, China
- Institute of Plasma Physics in Hefei, China
- ChangChun University of Science and Technology in ChangChun, China
- Oak Ridge National Laboratory in Oak Ridge, Tennessee, US
- P.N. Lebedev Physics Institute in Moscow, Russia
- University of New South Wales in Sydney, Australia

Heat Production

History

On March 23, 1989, Martin Fleischmann and Stanley Pons announced, at a press conference at the University of Utah, that they had observed heat production from a palladium foil electrode loaded with deuterium by electrolysis from heavy water. They claimed heat produced from the system (sometimes referred to as excess enthalpy) was more than could be produced by the electrical input to the system and/or any chemical reactions and must be due to nuclear reactions, specifically the fusion of deuterium nuclei at room temperature. Even though this flew in the face of conventional nuclear physics, the prospect of cheap, non-polluting, virtually limitless energy galvanized the world. Scientists at every major and most minor institutions set out to reproduce the effect. When some of the most prestigious institutions (such as MIT and Cal Tech) failed, cold fusion was declared a hoax and a US Department of Energy (DOE) Energy Research Advisory Board (ERAB) put the official stamp on that view by failing to endorse further funding, except in unusual circumstances. Most of the failures to reproduce the effect, however, were (in my opinion) due to looking for reaction products from the wrong D-D fusion reactions and to the extreme sensitivity of the experiments to material characteristics.

Meanwhile, other institutions—such as Texas A&M, Georgia Tech, and Stanford in the US—reportedly confirmed the effect. (Although Georgia Tech later recanted, for what may not have been entirely scientific reasons.) Cold fusion research programs begun in 1989 continue to this day. Although apparently invisible to conventional science, a broadly-based, international research program currently exists which involves some of the largest companies in the world, government agencies, universities, small companies,

foundations, scientific societies, research institutes, and private individuals. Problems associated with reproducibility are being solved, even though there is no broadly-accepted theory of how the effect is produced. Some researchers claim to reproduce the effect nine out of ten times. Indeed, it was announced at the Conference that a patent (US 6,764,561) was awarded to two Navy scientists (Dr. Melvin Miles and Dr. Ashraf Imam) for developing a palladium-boron alloy that produced excess heat nine out of ten times (the one time the electrode failed, the alloy had cracked and release most of the deuterium loaded into it). Another US scientist made copies of his experiment and sent it out to other researchers to run; one hundred percent of these reported measurable excess enthalpy. Reproducibility has now reached the point where experiment recipes are sent to high school science classes and they can reproduce the effect.

Calorimetry

Calorimetry is the science of measuring the heat produced in a system. The basic procedures for measuring heat are more than a century old, but a degree of controversy has resulted from disagreements about the many potential sources of error associated with the use of electrolysis. Disagreement about the associated measurements was especially strong initially because the first experiments involved "open cells," in which gases that resulted from the electrolytic processes were allowed to freely escape into the atmosphere. Since the initial stages of the work, however, considerable progress has been made in understanding calorimetric measurements. Furthermore, new experiments in which excess heat has been observed have been carried out in "closed cells," in which all gases and liquids have been enclosed in thermally insulated environments, and the excess heat has been identified as being considerably above the maximal errors which can be associated with the calorimetric procedures used.

Thus, given the more recent technology, questions about the existence of the heat based on calorimetric measurements should not be questioned. The fact that information about these newer findings (and the field in general) has not been widely disseminated has led a persistent misconception about failed and unprovable calorimetry. This confusion, in turn, has led to a serious misperception that the excess heat measurements are flawed. For this reason, it is typically very difficult to achieve results that are not called into question in mainstream science, and considerable effort in developing "fool-proof" calorimetry has taken place over the years. Recent improvements in instrumentation and materials, such as thermoelectric systems with improved efficiency, are enabling real advancements in calorimetry.

A potentially retrogressive approach, involving older ideas associated with calorimetry, was presented at ICCF11 by Jacques Dufour et al from CNAM in France. In particular, as opposed to using modern sensors based on cutting-edge technology, Dufour et al have suggested that a simpler, older procedure, involving the identification of changes in variations in the behavior of the (triple-point) boundary between gas, liquid, and solid in water could be a useful way to perform precision measurements of heat. On the one hand, this approach is potentially useful for demonstrating that heat (and temperature) changes are occurring. However, in other respects, the approach potentially can introduce unnecessary sources of error that have been dealt with already in the flow

calorimetry methods that are already being used. How (or if) this alternative approach will be of value is an open question. Dufour gave an invited presentation on an "ice" calorimeter associated with work in this area. Vittorio Violante from ENEA in Italy and Tom Passell of TOP Consulting in the US (retired from the Electric Power Research Institute) also presented papers on calorimetry.

Excess Enthalpy

As mentioned above, there was less emphasis on heat production at this conference than at earlier conferences; more emphasis was on transmutation. Roger Stringham of First Gate Energies in Kilauea, Hawaii, US talked about power generation from his sonofusion reactor setup. Students from the Leonardo da Vinci Scientific High School in Milan, Italy discussed the heat produced in following a recipe for a cold fusion experiment in class. Jian Tian et al from ChangChun University of Science and Technology in ChangChun China discussed excess heat produced from a $Pt/K_2CO_3/Ni$ light water experimental setup and also the stimulation of excess heat production by shining a laser on palladium hydride. John Dash of Portland State University in Portland, Oregon, US discussed recent work in production of heat using a palladium cathode in electrolysis of heavy water.

Vittorio Violante et al discussed recent work at ENEA (Italian National Agency for New Technologies, Energy and the Environment) Frascati in Rome, Italy. The work included increasing the reproducibility of heat production, calorimetry, detection of "nuclear ash" (^4He), and triggering of heat production using a laser. Arik El-Boher of Energetics Technologies in Omer, Israel reported experiments in which they achieved an average power gain of 1500 percent in one series and 2500 percent in another. Domenico Cirillo and V. Iorio, unaffiliated, from Italy, discussed the possibility of heat production from transmutation of higher-Z isotopes. Mitchell Swartz of JET Thermal Products in Wellesley, Massachusetts, US submitted abstracts for two presentations (although he was unable to attend) on his experiences with "heat after death"; i.e., continued heat production from a piece of palladium after it has been taken out of the electrolyte or otherwise no longer is being loaded with deuterium. Jean-Paul Biberian from CRMCN-CNRS, Campus de Luminy, France (and Georges Lonchampt) discussed excess heat production in an electrolytic cell using a polymer as a solid state electrolyte.

Other Subjects of Interest

General

Aside from the following particular subjects, I should mention that there were several presentations on proposed theoretical underpinnings for LENR's. These covered quite a range, as can be seen on the ICCF11 Web site. In addition, there were several presentations on detecting energetic particles (other than "strange" radiation) emitted from LENR systems. Most of these involved use of CR-39 polymer material, primarily for detecting alpha particles. Energetic particles weaken chemical bonds when they pass through the CT-39 material, leaving residual tracks in the weakened material. The depth of these tracks can then be used to determine the energy and size of the particles.

Strange Radiation

The Russians, especially at RECOM, a Russian Research Center "Kurchatov Institute" spinoff company, have been doing a lot of work investigating a new phenomenon they have postulated exists: "strange" radiation. The principal researcher appears to be Leonid Urutskoiev. "Strange" radiation is produced by exploding a wire or foil in water or in an aqueous liquid. (Exploding wires and foils are found in electrical detonators used at Sandia National Laboratories.) Either I wasn't paying attention or they never did discuss theories of how this radiation is produced; however, I can understand that much of the electrical charge needed to explode the wire or foil goes into the water and possibly turns the water to a plasma, for example, which might lead to new forms of radiation.

In any case, the Russians seem to feel that this "strange" radiation consists of magnetic monopoles. Magnetic monopoles are particles that have been postulated to exist but have never been observed. If they do exist, they would be similar to electrons and protons in the sense that they would carry a single unit of charge. However, the charge would be magnetic instead of electrical. Magnetic monopoles have been hypothesized by Dirac and others, but outside of possible detection in the Russian work, have never been seen. There were eight presentations on "strange" radiation and/or magnetic monopoles at the Conference. They even went so far as to look at the effects of "strange" radiation on animals. (Which seems to be the same as for conventional radiation: a little is good; a lot is bad.)

In France, Georges Lochak and Henri Lehn at the Louis de Broglie Foundation in Paris are involved in this research; also Michel Rambaut, retired from the French Atomic Energy Commission is doing some work. In addition, Tetsuo Sawada from the Nihon University Institute of Quantum Science in Japan presented on this topic. I don't know what all this has to do with cold fusion, but it certainly was interesting.

Reifenschweiler Effect

One paper was about the Reifenschweiler Effect, described in 1994 by Otto Reifenschweiler, who worked at the Phillips Lab in The Netherlands for many years. As Reifenschweiler claimed to detect, the half-life of tritium absorbed in titanium is increased. This is interesting to me because I have a file of material by and about Reifenschweiler, and I was involved in an initiative (that never worked out) to investigate this effect to see if it could save the US Government some expense in producing new tritium. It was additionally interesting because Sandia National Laboratories has been involved for many years in tritiding titanium films. On Monday morning of the Conference, David Fabrice of the Laboratoire de Recherches Associatives in Franconville, France speculated whether this effect is linked to a variation of the lambda factor of the tritium. As titanium is one of the materials used to produce the cold fusion effect, I could readily see the possible connection here.

Martin Fleischmann

Martin Fleischmann gave two talks at the Conference, the last one an extension of the first. In these, he gave further explanation of his belief that the LENR phenomenon could

be better explained using quantum electrodynamics (QED) than traditional quantum mechanics (QM). He illustrated this using five topics.

- The kinetics of fast reactions in solution at time scales below 1 μs,
- The kinetics of voltage-gated transmembrane ion conduction processes,
- Surface x-ray diffraction,
- The kinetics of phase growth of single cehters on microelectrodes, and
- Mass transfer to surfaces due to wall-phase turbulence.

Fleischmann also related the potential of QED to the observation of "cold explosions" by Bridgeman in the 1930's. This interested me, because it probably involves a phenomenon known as structural bond energy release (SBER), which I am studying in a different life.

Energetics Technologies

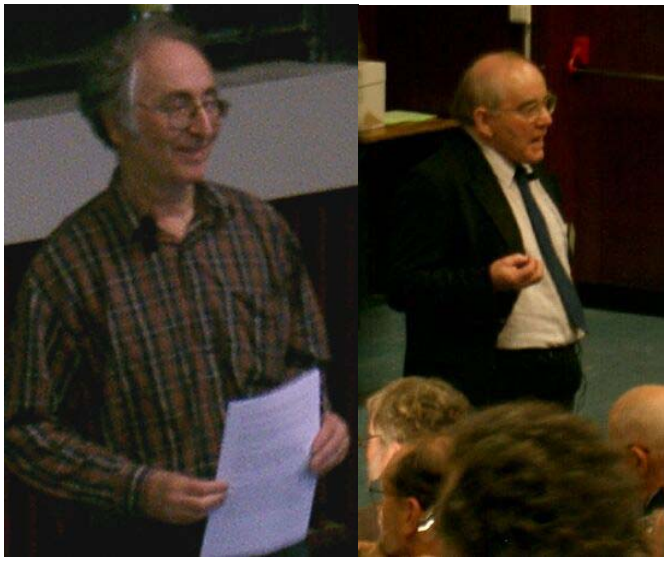
Energetics Technologies Ltd. in Omer, Israel is an interesting company, both from a scientific and a business standpoint. A relative newcomer to LENR's, it has become a world leader. Energetics Technologies is apparently well-funded, and an international staff consists of Americans, Israelis, scientists from Russia, and others. They also hire consultants from around the world. For loading deuterium into palladium, Energetics uses a technique based on the "superwave" concept proposed by Irving Dardik. As explained by Dardik in his presentation, a superwave consists of waves within waves within waves fractally nested in a specific non-linear manner designed to stimulate intrinsic oscillatory processes across a wide range of scales, and have application in many other areas than LENR's. In the last year or so, Energetics Technologies has reported some of the best energy gains reported anywhere. Programs in other countries should look behind them more often to see who's gaining on them.

Description of the Meeting

ICCF11 was held in the Mercure Marseilles Euro-Centre Hotel. The picture below was the view from my hotel room window.

The first day of the conference on Sunday, October 31 was the "cold fusion class." This is a feature at every ICCF which is intended to educate students, media, and others in the geographic location of the conference about cold fusion. I have gotten new perspectives each time I have attended the class. One interesting point raised was that the human race seems intent on taking each new discovery and using it for destruction, so that if we are successful in bringing cold fusion to real applications, we should beware the uses to which it is put.

Tuesday's sessions were held in a lecture room at the University of Marseille-Luminy and was attended by numerous students from the University. Both Brian Josephson (1973 Nobel Prize for Physics) and Martin Fleischmann lectured that day (see photos below). On Wednesday afternoon, there was a tour of the south of France countryside,



including a visit to the Château d'Estoublon. This gave me a chance to meet and socialize with otherconference attendees. On Thursday evening, we were invited to a reception in the office of the Mayor of Marseilles recognizing ICCF11 and kicking off the International Year of Physics (2005). The speakers in the picture below are, left to right, Dr. Guy Le Lay (President of the Provence area of the French Physical Society), Martin Fleischmann, Brian Josephson, the Deputy Mayor of Marseilles (partially hidden) Daniel Hermann, and Jean-Paul Biberian (the host for ICCF11).

Later that evening, everyone attended the conference dinner, which was held in the floating club-house restaurant of la Natique (Société Nautique de Marseille) moored at Quai Rive-Neuve in the Vieux-Port of Marseilles since 1889. The meeting facility, location, and meeting room were excellent. A Proceedings of the Conference will be published early in 2005.

Conclusions

I am not a scientist and, thus, am not able to judge the claims for LENR's in a scientific manner. Nevertheless, I have been following the field for several years because of its potential as an energy source. I know the researchers to be sincere and honest men and women, and the quality, the quantity, and the consistency of the descriptions of experimental results that I have seen have convinced me that this phenomenon is real. I have seen the criticisms of the field, including some of the criticisms that were included in the recent DOE review, and it seems to me that many scientists avoid issues with their feelings of self-worth by not admitting that there could be any phenomena which cannot be explained by their own (complete, unshakeable, omniscient) knowledge of the physical world. And yet we now recognize quantum entanglement as real, but not well understood. We recognize the quantum vacuum as real and possibly exploitable, without a thorough understanding of it. We can stop a photon of light in the laboratory, and then let it go again. Revolutions in science do happen, and I believe we are in the middle of one. Is cold fusion real? I believe it is. Does it utilize conventional physics principles to work? I do not believe so (although this is certainly not a universal opinion). Some people want to believe there is nothing new under the sun. Not me. I like to think about new things, mysterious things. Come to the next International Conference on Cold Fusion in November 2005 in Kyoto, Japan. If you like new things, you'll have a ball. Watch for news at http://www.iscmns.org/.

NOTE: One of the only two recommendations for funding from the new DOE review was on the material science aspects of deuterated metals using modern characterization techniques. Sandia National Laboratories is the world leader in material characterization.

Appendix A
ICCF11 Participation

The following, by country and affiliation, lists those who participated in ICCF11 either by attending or by authoring papers.

Australia

University of New South Wales, Heinrich Hora, J.C. Kelly
University of Western Sydney, F. Osman

Belarus

National Academy of Sciences, Veniamin Filimonov

Canada

Monti America Corporation, E.J. Anderson, Ernst Bauer, John Coleman, Roberto Monti, Gerardina Monti

China

ChangChun University of Science, Jian Tian, L.H. Jin. Z.K. Weng, B. Song, X.L. Zhao, Z.J. Xiao, G. Chen, B.Q. Du, Q. He
Institute of Applied Physics and Computational Mathematics, Zhachung Zhang
Institute of Chemistry, CAS, Zhongliang Zhang, Wushu Zhang
Institute of Plasma Physics, CAS, Ziao Wang
Tsinghua University, Xing Zhong Li, Si Chen, Bin Liu, Qing Wei, Nao Cai, Yu Mo, Shu Zheng, Dong Cao,

France

Assomption, Thomas Perrot
Atomic Energy Commission, CEA, Hervé Bottollier-Curtet, Stephen Goldstein, Jean Hanus, Oliver Köberl, Michel Rambaut
Classe préparatoire aux Grandes Ecoles, CPGE, Rémi Kogon
Conservatoir National des Arts et Metiers, CNAM, Jacques Dufour, Xavier Dufour, Denis Murat, Jaques Foos
CR Consultants, André Clerc-Renaud
CRMCN-CNRS, Campus de Luminy, Jean-Paul Biberian
Électricité de France, EDF, Olivier Horner, Jean-Louis Naudin, Noel Didier
Foundation Louis de Broglie, Henri Lehn, Georges Lochak
Impasse D'Argeme Route de Violesi, Jeremy Mosse
Institute for Isotope and Molecular Technology, Jean Delagarde
Laboratoire de Recherches Associatives, David Fabrice
Omicron, Roger Carrere, Claude Viguiier
Unaffiliated, Jean François, Giano Sereno, Georges Lonchampt
Université de Rennes 1, Lubomir Spanhel
University Pierre and Marie Curie, Marius Chemla

Finland

Vaasa Polytechnic, Tuomo Toimela

Germany

German National Radio, Haiko Lietz
Göde Wissenschaftsstiftung, Thomas Senkel
Technical University Berlin, Konrad Czerski, Tatiana Dorsch, Armin Huke, P. Heide
Unaffiliated, Julian Brown, Ranier Kühne, Marcus Rapp

India

Bhabha Atomic Research Centre, Mahadeva Srinivasan

Israel

Energetics Technologies Ltd., Arik El-Boher, Boris Khachaturov, Vitaly Krakov, Shaul Lesin, Mark Tsirlin, Tanya Zilov, H. Branover, Ehud Greenspan,

Italy

Altro, Giancarlo Gazzoni
Centro Sviluppo Materiali SpA, E. Celia, F. Falcioni, M. Marchesini, E. Novaro
Ente per le Nuove Tecnologie, l'Energia e l'Ambiente (ENEA), Emanuele Castagna, Francesco Sarto, Vittorio Violante, L. D'aulerio, R. Fiore, L. Capobianco, M. Apicella, L. D'Aulerio, G. Mazzitelli, A. Rosada, E. Santoro,
EURESYS, Paolo Marini, Vittorio di Stefano, Misa Nakamura
Genoa State University, Larisa Belobrzeckaja, L.N. Belobrzeckaha Costa, M. Del Borghi, M. Fumagalli, G. Delucchi
Instituto Nazionale de Fisica Nucleare, Laboratori Nazionali di Frascati (INFN-LNF), Francesco Celani, Francesco Scaramuzzi, Antonio Spallone, E. Righi, G. Trenta, C. Catena, G. D'Agostaro, P. Quercia, V. Andreassi
International Society for Condensed Matter Nuclear Science (ISCMNS), William Collis
Italian National Research Council-Instituto di Astrofisica Spaziale e Fisica Cosmica (CNR-IASF), Roberto Monti
La Sapienza University, R. Del Prete, E. Castagna, C. Sibilia
Nexus, Giorgio Iacuzzo
ORIM SrL, A. Mancini
Pirelli Labs, Luca Gamberale, F. Fontana, L. Gamberale, D. Garbelli
Scientific High School "Leonardo da Vinci," Angelo Salvatori, Alessandro Zucca, Francesco Bonazzi, Anna Gandolfi
STMicroelectronics, Ubaldo Mastromatteo
Sued Chemie M.T., Guido Petrini
Unaffiliated, Domenico Cirillo, Vincenzo Iorio, P.G. Sona
University of Bologna, E. Campari, S. Focardi
University of Catania, Fulvio Frisone
University of Lecce, Giuseppe Caretto, Vincenzo Nassisi, Luciano Velardi, A. Buccolieri, G. Buccolieri, D. Manno, L. Fama
University of Siena, Vera Montal Bano, Francesco Piantelli, G. Fasano, S. Lorusso, C. Stanghini, S. Veronesi

Japan

Cold Fusion Research Laboratory, Hideo Kozima
Hokkaido University, Tadashi Akimoto, Tadahiko Mizuno, Y. Aoki
Japan Synchrotron Radiation Research Institute, Yasuko Terada
Kagoshima University, Hasuhito Takeuchi
Kobe University, Akira Kitamura, T. Minari, R. Nishio, A. Taniike, Y. Furuyama
Mitsubishi Heavy Industries, Yasuhiro Iwamura, Takehiko Itoh, Mitsuru Sakano, Noriko Yamazaki, Shizuma Kuribayashi
Nihon University, Institute of Quantum Science, Tetsuo Sawada
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