

Consulting Services & Laboratory Devices

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Fusion Technology Consulting Services

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If your organization is interested in keeping up to date or entering into R&D investigations in this new energy arena we can provide consulting services to dramatically shorten the time frame it will take you to get up to speed in the field. Our consulting services range from scientific technical areas through engineering and business planning. Dr. Russ George who is the principal scientist and founder is internationally acclaimed as an expert in this field. He has worked on collaborative projects in leading laboratories in the field including those at Stanford Research International, the Electric Power Research Institute, Los Alamos National Lab, Lawrence Berkeley National Lab, the Naval Research Lab, University of Osaka, and Portland State University. He has directed quantitative analytical studies at Charles Evans and Associates, Rockwell/Rocketdyne Labs, Pacific Northwest / Battelle labs and numerous other leading nuclear research labs around the world. He has frequently been asked to deliver briefings and seminars on the field and his work.

Areas of expertise derive from active work in the energy industry and nine years of work in this specific field. Direct hands on experience in this field include, nano-materials preparation, ultrasound physics, sonochemistry, electrochemistry, calorimetry (especially isoperibolic calorimetry), isotope studies including use of QMS (quadrupole mass spectroscopy), Dynamic and TOF SIMS (secondary ion mass spectroscopy), PGNA (prompt gamma neutron activation), NAA (neutron activation analysis), neutron, gamma, and charged particle detection.

Contact Russ George regarding his availability and consulting rates rgeorge@d2fusion.com

Clients who for whom we have consulted and/or presented briefing seminars in this field include:

- U. S. Secretary of the Navy ([see description](#))
- EPRI (Electric Power Research Institute)
- MITI (Ministry of International Trade and Industry, Japan)
- The Canadian Institute of Energy
- NASA Space Power Division
- Los Alamos National Laboratory
- Lawrence Livermore National Laboratory
- Lawrence Berkeley National Laboratory
- The Naval Research Laboratory
- Lockheed Martin Corporation
- Motorola Corporation
- SRI (Stanford Research International)
- Texas A&M University
- Stanford University
- Portland State University
- University of Osaka
- MIT Research Laboratory for Electronics
- General Atomics

[the APS on cold fusion](#)

Scientific papers have been presented at:

The American Physical Society (1998)
The US and Japanese Society of Electron Microscopy (1997)
The American Chemical Society (1996)
International Conferences on Cold Fusion (93, 95, 96)

Papers are in preparation for presentation at:

The American Nuclear Society
IEEE Society
The American Acoustical Society
NASA Space Power Conference

Russ George has worked as a visiting scientist in this field directing research at:

Los Alamos National Laboratory
Lawrence Berkeley National Laboratory
University of Osaka (JWRI)
Portland State University
Stanford Research International
Charles Evans and Associates

Further collaborations on this work have engaged scientists and resources at:

The Naval Research Laboratory
Osaka University
Lockheed Martin Corporation
Los Alamos National Laboratory
Rockwell International / Rocketdyne Division
US Bureau of Mines Helium Laboratory
Stanford University
University of Marseille
French Atomic Energy Commission (Grenoble)
University of Missouri (Nuclear Reactor Lab)
Portland State University

Laboratory Research Devices are available for installation in qualified laboratories

One of the most important facets of discovering and developing new technologies is sharing this technology with other scientists who can build upon the original discoveries. When dramatic or paradigm shifting technological discoveries are made no single organization can independently provide the multi-disciplinary effort required to bring the discovery to fruition as consumer products. Our main business at this time is consulting science including the manufacture of lab products which reliably reproduce these new cold nuclear reactions for study and development.

Our lab devices are ideally suited to serve as practical screening tools enabling researcher and engineers to search for improvements that will enhance these reactions. Such enhancements will provide unparalleled opportunity for

discoveries leading directly to scientific breakthrough research and new intellectual property in the energy arena.

Each device is designed and manufactured to order so that it will best fit the resources and facilities of the customer. Prices vary accordingly but in general start at about \$30,000 US including consulting, installation, training and support.

Catalytic Fusion Technology

One of the leading areas of study for "cold fusion" has been directed toward the long established nature of palladium and platinum group metals as hydrogenation catalysts. A number of leading researchers have worked on the study of cold fusion reactions as "catalytic fusion." Dr. George has worked in collaboration in the laboratories of two of the leading scientists in this catalytic fusion field, Dr. Y. Arata of Japan and Dr. Les Case of the United States. Currently Dr. George is actively participating in consulting and directing experimental investigations on replications of the the work of Arata and of Case.

The most interesting and promising work is directed toward the study of the nature of the materials which produce these catalytic fusion effects and enhancement of the effects. This technology is very effective and promising and has a broad potential. The observable reactions produce abundant anomalous heat up to several hundred watts and helium isotopes.

Interested researchers may contact Dr. George for further details on establishing collaboration and/or consulting agreements.

Ultrasound Sonofusion Devices

The phenomenon of ultrasound induced sonofusion and the device technologies pioneered here provide a remarkable test bed to explore this new and almost unexplored region of nuclear physics, energy science, and engineering. Laboratory bench-top devices reliably producing tens to hundreds of watts of heat energy from reaction rates of $e12$ - $e14$ reactions per second. These devices utilizing a variety of materials will soon be available. The devices are variably equipped with modern computer based data acquisition and control and can be readily operated by one individual. The devices are designed for ready adaptation to other laboratory analytical and measurement hardware. In our reactors the effect turns on almost instantly and can be fully controlled in both rate and intensity. Many reaction pathways are already well known and provide directions for both theoretical and operational understanding of the reaction processes.



Professor Zhang in Arata's Laboratory in Osaka



adding D2O to the M5 reactor



Professor
Zhang and
David Kubiak
examining
QMS data on

M5 Experiment

These devices which are manufactured to order will be provided to qualified research organizations through research licensing agreements with us. It is anticipated that organizations receiving the equipment may find it useful to become part of the [Virtual Laboratory Network](#). The initial device designs are stable well characterized devices that we have designed and used in our own research efforts. We are also willing to adapt the designs to accommodate specific research needs such as on-line mass spectroscopy, tritium monitoring, in situ probes suited for monitoring a variety of reaction effects and products, and special calorimetric considerations.

The devices are available via licensing agreements which will cover an agreed upon time frame for projected work. Costs for equipment, training, and on-going consultation will be commensurate with the projected goals of the project.

At this time no product literature is available but serious parties are invited to contact us for details on how they can become informed and acquainted with the technology. Please include information describing your past and current research activities and affiliations.

Double Structure Cathode Electrochemical Devices

Dr. George is one of the very few scientists who has had the honor of working with Japan's famous physicist Dr. Yoshiaki Arata at his laboratory in Osaka, Japan. Arata's now famous DS palladium cathode which produces the cold fusion phenomenon with perfect reproducibility as indicated by observation of both anomalous heat and production of both isotopes of helium is now available. This technology has been successfully transferred from Arata's lab in Osaka to the SRI International Labs in Menlo Park, CA with the assistance of Russ George and has shown dramatic production of the anomalous cold fusion heat.

We are able to consult with those who wish to replicate and expand upon this ground breaking work. Arata style DS Cathodes as used at SRI are available from us on a manufacture to order basis.

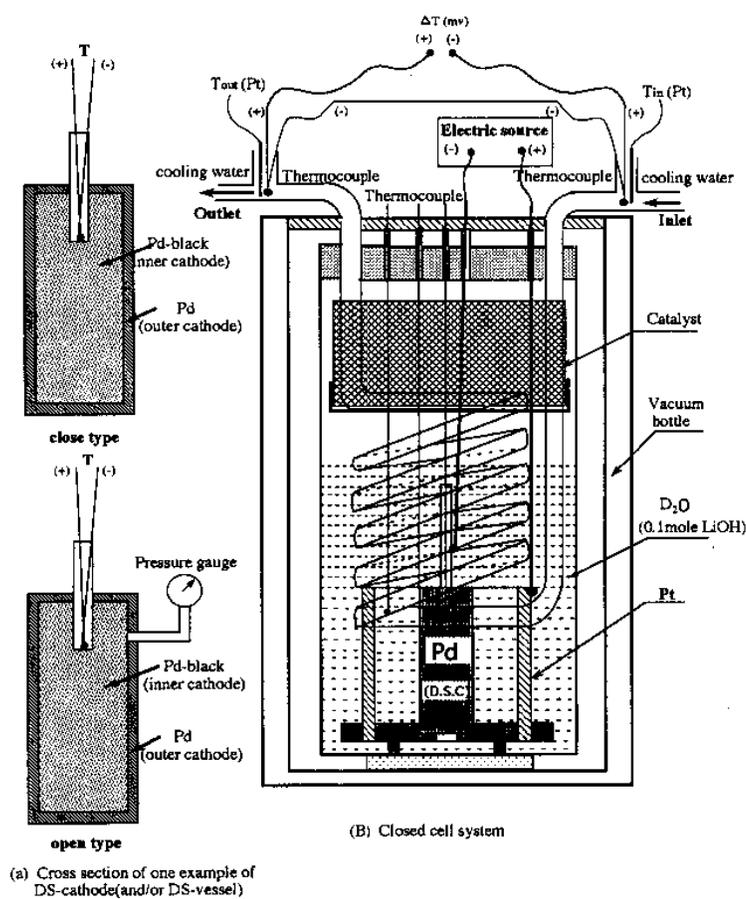
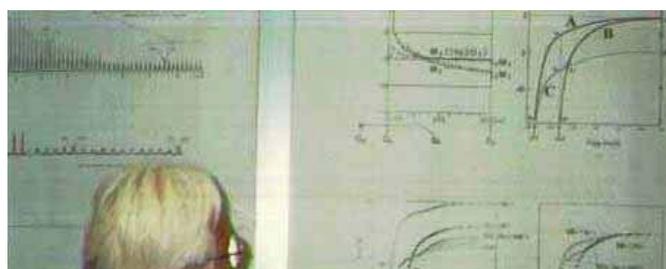


Fig. 5 Closed cell system with DS-cathode

Arata Style DS Cathode Electrochemical

Cell



Prof. Arata showing helium signature data from his QMS



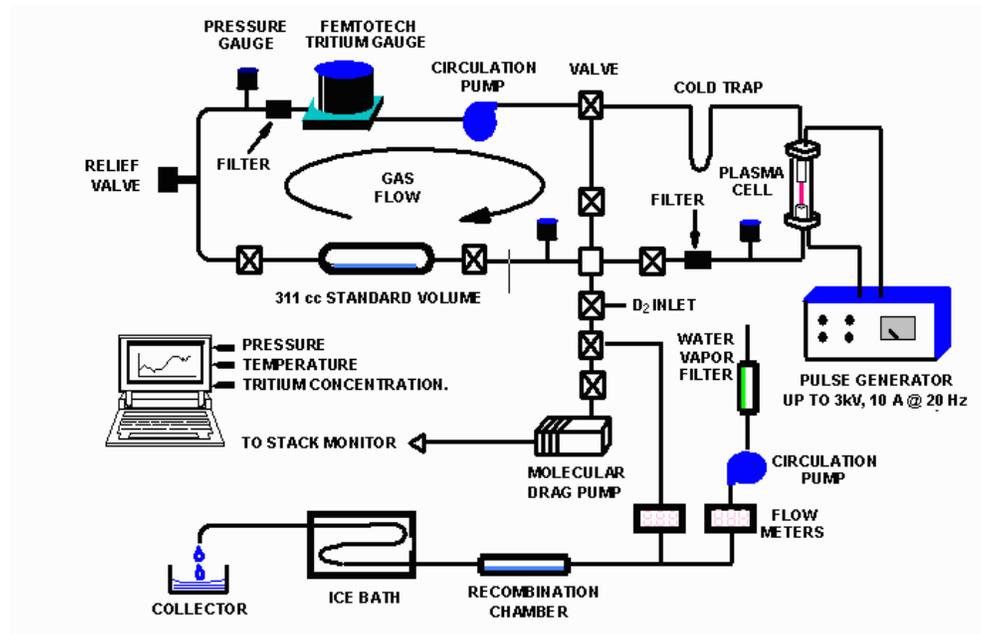
Due to demanding manufacturing processes required for the production of DS cathodes a several month lead time is required for delivery.

Glow Discharge Tritium Devices

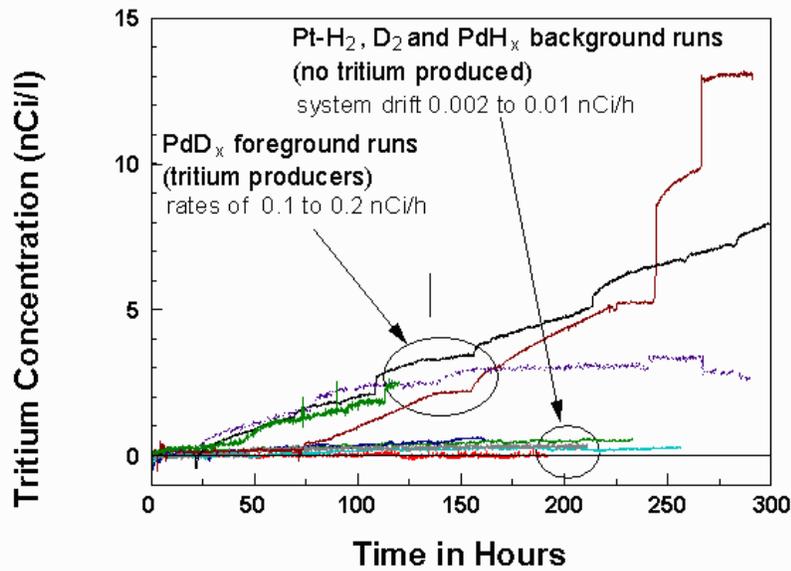
One of the more striking examples of the cold nuclear processes that occurs in this field is seen in the work of Dr.'s Tom Claytor and Dale Tuggle (et al) of Los Alamos National Laboratory. Dr. George has worked as a visiting scientist in the Claytor/Tuggle laboratory at Los Alamos on two separate occasions and is very familiar with construction and operation of this experimental protocol. In the Los Alamos Tritium experiment a relatively simple glow discharge experiment produces dramatic evolution of tritium from a D₂ Pd experiment.

We can provide consulting services and manufacture to order service for research groups wishing to replicate this dramatic research. A research paper revealing some of the details on this technology can be seen on the accompanying web pages at

<http://wwwnde.esa.lanl.gov/cf/tritweb.htm>



Los Alamos Style Glow Discharge Tritium Device



Sample Data From the Los Alamos GD Tritium Device

Materials and Supplies for Research

In addition to providing fully assembled and ready to use bench scale equipment we can provide the best materials and equipment to help researchers and engineers with apparatus of their own design or assembly. Our years of experience in the field, many contacts, and collaborators allows us to often provide special materials such as metals and metal alloys, specially manufactured materials such as thin films, high surface area materials, and hydrogenation catalysts.

On our own design and prototyping bench

Several additional research protocols are under active development here to expand our product line and will be available in the near future. These include proton conductor aluminum lanthanate oxide materials, nickel metal hydride/deuteride gas systems, and catalytic systems. Partners with expertise in these general fields are being sought to co-develop these research products.

Investment and Partnering Opportunities

We are actively seeking private investment to expand it's research device business and R&D efforts. We are also willing explore partnering opportunities to expand it's business both in the research equipment business and in development of practical consumer power technologies. As we established ourselves as the premier source of technology for the research laboratory it will in parallel be developing consumer and industrial heat producing applications based on these technologies. The success of investment funding efforts will

dictate the rate at which these commercial heating technologies will be ready for market. We believe the first consumer level heat products could be ready for market testing within a two year time frame provided ordinary engineering and development resources were in hand.

If you represent a company with resources and experience in the research apparatus industry or the energy industry we welcome your contact. Private venture investment inquiries are welcome.

Please send an initial letter (e-mail preferred) describing your interest and brief backgrounder and we will contact you with further details.

For further information contact

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