

The Battalion



WEATHER

FORECAST for WEDNESDAY:
Partly cloudy skies and mild to cool temperatures.

HIGH:74

LOW:52

Chemists release results of fusion experiment

By Alan Sembera

SENIOR STAFF WRITER

Texas A&M researchers announced Monday morning they successfully reproduced part of a controversial University of Utah experiment that reportedly created excess energy from a relatively simple nuclear fusion process.

The A&M scientists are the first to duplicate the Utah experiment, which could be a major breakthrough in the effort to create a relatively clean, cheap and inexhaustible energy source through nuclear fusion.

A&M chemists Dr. Charles Martin, Dr. Kenneth Marsh and Bruce Gammon reported energy gains of 60 to 80 percent when they electroplated a jar of "heavy water" with a palladium electrode.

Marsh, who is director of A&M's Thermodynamics Research Center, said they could not confirm that the energy gain came from nuclear fusion.

He said there is a small chance that the energy was created by a chemical reaction, and that the experiment was too small for them to count extra neutrons, which are a byproduct of fusion.

But researchers at Georgia Tech announced later Monday afternoon they also reproduced the Utah experiment and found a large number of neutrons that were created during the experiment.

The results from A&M and Georgia Tech are important to the scientific community, which had looked at the Utah experiment with suspicion because it claimed to have achieved fusion without the intense pressure and heat required in previous fusion reactions.

Also, attempts by several major laboratories to reproduce the Utah experiment had failed.

Martin, who is a chemistry profes-

sor, said the reason A&M succeeded where others failed is because of the school's expertise in calorimetry — the measurement of heat.

Marsh and Gammon have extensive backgrounds in calorimetry.

"We have run the experiment using four different amounts of electric current and have found that excess energy varies between 60 percent and 80 percent,"

— Dr. Charles Martin, A&M electrochemist

Martin said, and were able to obtain precise measurements of the heat created during the experiment.

He said they finished the experiment early Sunday morning in a small room in the basement of Zachry Engineering Center using simple equipment available in any college laboratory.

They had been working on the experiment since March 29, less than a week after the Utah researchers announced their discovery.

The scientists measured the heat created by running a small current of electricity through a 100 milliliter solution of deuterium oxide, or heavy water, Martin said.

The electrical current entered the solution through a palladium rod 1 mm in diameter and 50 millimeter long, which was surrounded by another electrode consisting of a platinum mesh, he said.

"We have run the experiment using four different amounts of electric current and have found that excess energy varies between 60 percent and 80 percent," Martin said.

In the University of Utah experiment, B. Stanley Pons, chairman of the chemistry department, and his

British colleague Martin Fleischmann recorded about 300 percent excess energy.

The scientists in Utah say they think the energy was created when the deuterium atoms of heavy water molecules fused together, releasing protons and neutrons along with a large amount of energy.

Heavy water is just like normal water, except that deuterium substitutes for hydrogen.

Hydrogen consists of a proton and an electron, but deuterium has a proton, electron and a neutron, making deuterium oxide heavier than normal water.

Strong forces are required to fuse deuterium atoms together.

Fusion occurs naturally inside the sun because of intense heat and pressure.

But scientists have been unable to create enough pressure to make fusion efficient enough for mass energy production.

Energy created by nuclear power plants comes from fission reactions, which splits atoms.

Fission reactions create dangerous radioactive wastes, which can take centuries to deteriorate.

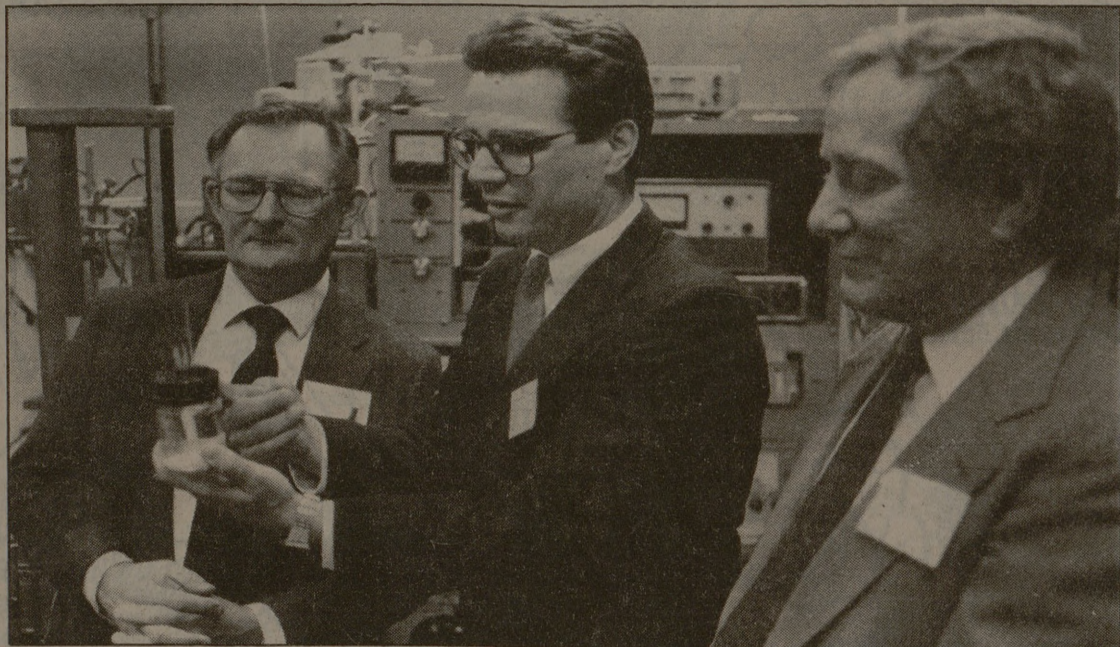
But fusion reaction creates no significant radioactive waste and is inexhaustible.

The Utah researchers speculate that fusion occurred at room temperature in their experiment because of the strong electrical properties of the palladium electrode.

Dr. Kenneth Hall, deputy director of the Texas Engineering Experiment Station, said A&M has other groups of scientists doing fusion research.

He said much more research must be done before fusion can be used to create energy on a large scale.

"Once we understand what's going on, then we do what engineers call a 'scale-up,'" Hall said. "We have one watt. We need to go to hundreds and thousands of watts."



Texas A&M researchers (l to r) Dr. Ken Marsh, Dr. Charles Martin, and Bruce Gammon show a cell used as part of an experiment to test for fusion reactions.

Photo by Dean Saito

Utah researcher says he never doubted

SALT LAKE CITY (AP) — A Utah researcher whose nuclear fusion claims sparked widespread skepticism said Monday he never doubted his findings, but nonetheless feels relieved his work apparently has been confirmed.

"This is just incredible," said an elated B. Stanley Pons, chairman of the University of Utah's chemistry department. "That's one of the nicest things that could happen."

Scientists at both Texas A&M and Georgia Tech announced Monday that they had duplicated Pons' experiments, achieving similar results.

The announcements came nearly three weeks after a March 23 news conference at which Pons and British colleague Martin Fleischmann of the University of

Southampton, said they had sustained a controlled fusion reaction at room temperature using equipment found in any college laboratory.

The two said the experiment produced four times the energy they put into it. Reaction from the international scientific community wasn't just guarded, but on the whole pessimistic.

Pons said that may have changed Monday with Texas A&M and Georgia Tech scientists announcing they had duplicated the Utah experiment.

But while Texas A&M said it had achieved similar results, it was Georgia Tech's findings that thrilled Pons the most.

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Senate core curriculum committee asks students, faculty for input today

By Kelly S. Brown

STAFF WRITER

Students and administrators today will discuss and further define what courses will and will not count in the core curriculum at an open hearing in 301 Rudder Tower at 3 p.m.

Dr. Manuel Davenport, co-chairman of the Core Curriculum Oversight Committee (CCOS) of the Faculty Senate, said he's hoping students and faculty will attend the hearing so the committee can get a better understanding of how everyone perceives the new guidelines.

Resolutions for tentative CCOS guidelines on cultural heritage and social science categories of the core curriculum are the following:

- A given course can be included in no more than one category of the core curriculum.
- The category cultural heritage will be changed to humanities to more accurately represent the nature of the courses in this category.
- No course will be included in the core curriculum in the humanities or social sciences areas that is predominantly concerned with skills or vocational training.

• No student will be permitted to satisfy all core curriculum requirements in the categories of humanities and social sciences by courses having the same prefix.

The following are approved as tentative guidelines for use of CCOS:

• In order for a course to be included in the core curriculum in the category of humanities, a course must address one of the following areas: history, philosophy, literature, the arts, culture or language.

A course also must demonstrate one or more of the following objectives: seek to recover, transmit, analyze and interpret artistic or creative expressions of human culture; develop an appreciation for and an ability to analyze or interpret aesthetic structures.

Additional guidelines for a course to be included in the core curriculum state that it increase self awareness, self analysis or the ability for ethical reasoning; promote an understanding of the historical context of science, the arts or cul-

ture; and promote a philosophical understanding of the principles of science, the arts or culture.

• In order for a course to be included in the core curriculum in the category of social sciences it must address the following subject areas: anthropology, economics, political science, archaeology, geography, psychology or sociology.

A course also must demonstrate one or more of the following objectives — a scientific or analytical study of social institutions and/or the behavior of individuals or groups in relation to these institutions; or give an historical development and analysis of social institutions and their relation to individual or group behavior.

Another hearing will be on April 18 from 2:30-3:30 p.m. in room 701 Rudder to consider and discuss the proposed tentative guidelines.

Davenport said the guidelines will be sent back to the CCOS to consider what transpires at the hearings. From there the guidelines will go to the Academic Affairs Committee in the Faculty Senate, and if passed, will be forwarded to President William Mobley for approval.

Cavalryman injured in fall from horse

A member of the Texas A&M Parsons Mounted Cavalry remained in serious condition Monday night after being injured in a Parents' Weekend ceremony Sunday.

Scott Armstrong, a senior animal science major and member of outfit L-2, was injured when he was thrown from his horse during a final review ceremony for Parents' Weekend, said Drew Gibson, a senior building construction major and commanding officer of the cavalry.

To close the ceremony, all members of the cavalry charge their horses from one end of Simpson Drill Field to the other, Gibson said.

He said it appeared Armstrong lost his balance soon after the charge began and never regained it. Armstrong went down head first, Gibson said.

Gibson estimated Armstrong's horse was going about 30 m.p.h. at the time of the fall.



Scott Armstrong

University paramedics responded to the scene and took Armstrong directly to Humana Hospital, Gibson said. Armstrong was transferred to St. Joseph Hospital Sunday night, he said.

Gibson said Armstrong was semi-conscious Monday night and has feeling in his fingers and toes. Armstrong was speaking Monday but "not making sense," he said.

North says Reagan concealed involvement in arms shipment

Oliver North testified Monday that former President Reagan and his attorney general, Edwin Meese III, concealed U.S. involvement in a November 1985 shipment of Hawk missiles from Israel to Iran.

In a meeting on Nov. 12, 1986, Reagan clearly "had made a decision not to disclose" the shipment, North said.

The president told a news conference on Nov. 19 — a week after that meeting — that the government had not been involved with other nations in shipping weapons to Iran and that the United States had shipped none before he signed a January 1986 authorizing document. Immediately afterward, the White House put out a statement in which Reagan said a third country had been involved.

North testified that he assumed Reagan had known of the diversion of Iran arms sale funds to the Contras, a contention Reagan has denied.

North, seemingly struggling to keep his temper, defended his stewardship of an Iran-Contra cash fund and insisted the money he paid for a used car came instead from a \$15,000 family cache in a metal box bolted to a closet floor.

At the start of cross examination

at his trial, North said he kept track in a spiral-bound notebook of every penny he disbursed from the Iran-Contra fund which totaled between \$240,000 and \$300,000.

"The ledger is still around?" asked prosecutor John Kecker.

"It was destroyed," North said.

"Do you know who destroyed it?"

"Yes," he said. "I did."

North, who destroyed stacks of other documents in November 1986, said he smuggled several papers out of the White House complex so "that I would have something to show if necessary, to show I had authority from my superiors for activities that I was engaged in."

Ueberroth makes pact with Eastern's unions

New York (AP) — Eastern Airlines' striking unions reached five-year agreements with Peter V. Ueberroth on Monday, but the pacts apparently require changes in his deal with Texas Air Corp. that the parent company has not yet accepted, sources said.

Texas Air said it was studying the changes and insisted that the deal to sell Eastern to Ueberroth had not been completed after four days of almost continuous bargaining.

"There's no agreement as far as we're concerned," said Bruce Zirinsky, an Eastern lawyer.

"There was no meeting of the minds," said Harvey Miller, another

Eastern lawyer.

Ueberroth's group and the three striking unions, representing the pilots and flight attendants, struck their own deals at about 6 a.m. Monday in Washington.

The parties then flew to New York and went directly to U.S. Bankruptcy Court for a series of meetings with Judge Burton Lifland that lasted eight hours. Present for some of the meetings was former Defense Secretary Frank Carlucci, although his role was not identified.

At 7 p.m., Ueberroth emerged from the courthouse and announced the union settlement, calling it "a historic labor partnership."

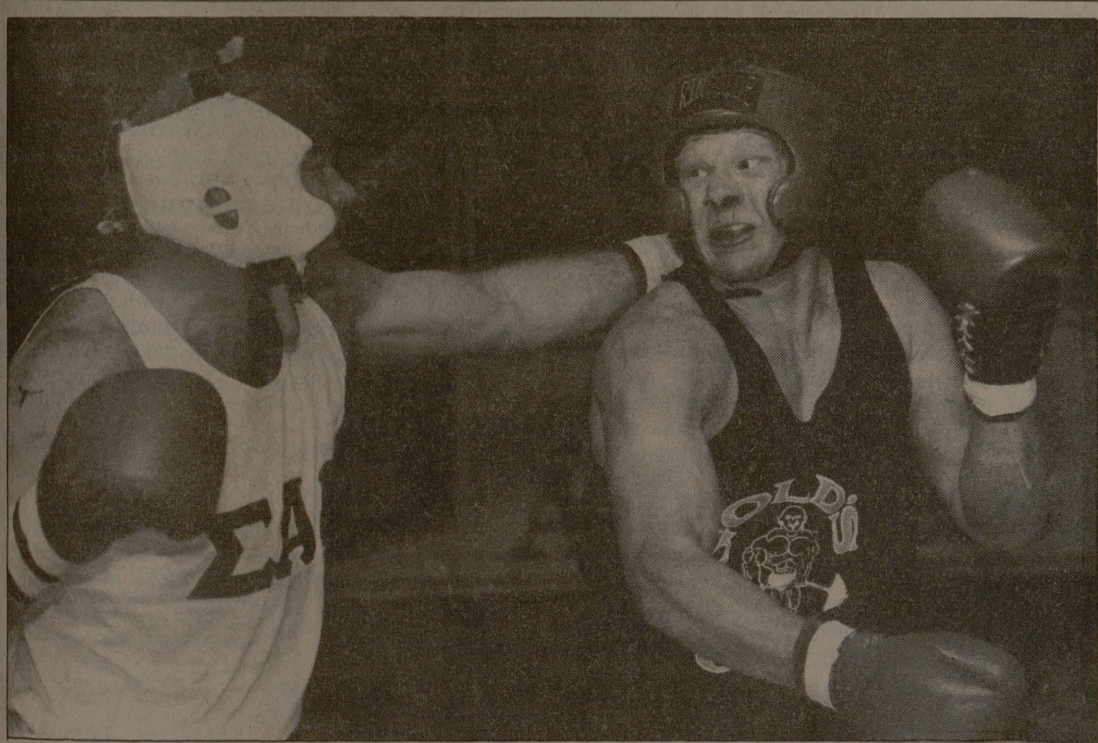


Photo by Jay Janner

Fight Night

Phil Gooch, in the white top, prepares to take a swing at Taylor White during Fight Night at the College Station Hilton Monday night. Gooch, a member of Sigma Phi Epsilon de-

feated White, a member of Sigma Phi Epsilon, to win the Greek heavyweight division. Sixty-five boxers competed in the annual event. Proceeds go to the American Heart Association.