

Purdue Knew
Purdue's Persecution of Professor Rusi Taleyarkhan

A New Energy Times Bubblegate Special Report

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Partial Listing of Reference Material Online:

[\(http://www.bubblegate.com/\)](http://www.bubblegate.com/)

[Sonofusion Research Scuttled: Putterman and Suslick's Response to Taleyarkhan's Discovery and Other Science Misdeeds](#)

[Bubblegate Timeline and Library Index](#)

[Taleyarkhan Group Scientific Papers](#)

[Bubblegate Investigation Timeline](#)

[Bubblegate: Key Players](#)

[Bubblegate: Affidavits and Key Documents](#)

[Independence of Xu/Butt Replication](#)

Part 1: General Background and Review

Background

This report reviews in detail the two allegations for which Purdue University found professor of nuclear engineering Rusi Taleyarkhan guilty of research misconduct.

Taleyarkhan and his colleagues are one of a few groups that, for several decades, have been investigating and attempting to achieve acoustic inertial confinement fusion.

A decade ago, the Defense Advanced Research Projects Agency invited several groups to participate in an effort to see whether sonoluminescence, and more generally the field of acoustic cavitation, as suggested by inventor Hugh G. Flynn in 1982, might create the required conditions for fusion and therefore lead to a new source of energy. Sonoluminescence is a process by which sound waves create energetic flashes of light in acoustically driven imploding bubbles bearing deuterium (a heavy form of hydrogen). Fusion would be a far cleaner source of energy than conventional nuclear fission, and its fuel source, basically water, would be a virtually unlimited supply of energy.

One group was led by Bob Apfel, who was a Yale professor of mechanical engineering. The second group was headed by Lawrence Crum, with the University of Washington. A third group comprised Seth Putterman, a theoretical physicist with the University of California, Los Angeles, and his collaborator, Ken Suslick, at the University of Illinois. Taleyarkhan, at the time affiliated with Oak Ridge National Laboratory, and his colleagues were the fourth group. Theirs was the first team to claim success. They call their research acoustic inertial confinement fusion, sonofusion or bubble fusion.

One member of the Taleyarkhan group is [Richard T. Lahey](#), who, when he worked for General Electric Corp., was one of the founders of the technology used in the boiling-water nuclear reactor, one of the most common types of nuclear reactors used worldwide.

Other members of the group are JaeSeon Cho (formerly with Oak Ridge National Laboratory), Robert C. Block (Rensselaer Polytechnic Institute), Robert I. Nigmatulin (Russian Academy of Sciences and a member of Presidium of Russian Academy of Sciences) and Colin West (formerly with Oak Ridge National Laboratory).

Introduction

Taleyarkhan has been the target of numerous accusations, including fraud, deceit and misconduct. Some of the accusations have been direct; many have been indirect and disguised as scientific skepticism. All accusations generally have two themes: His group's work is not real, and he is a fraud. Of the various investigations, reviews and examinations, only one, the last major one by his university, has resulted in any charge sticking.

"In the history of publications," Taleyarkhan has written, "I probably will not be able to find one that has gone through this level of scrutiny. If you do, let me know."

The majority of the accusations over the years have come from his competitors, Putterman and Suslick. New Energy Times investigated these accusations in detail in issue #31. Putterman, his student Brian Naranjo, and Suslick have not informed New Energy Times of any error in issue #31.

While Putterman and Suslick were being widely quoted in the media with hostile and dubious criticisms of Taleyarkhan and his group's work, the two began to communicate with Lefteri Tsoukalas, the head of Purdue's School of Nuclear Engineering, where Taleyarkhan works.

Evidence of the conspiracy comes from the signed, sworn [Jenkins affidavit](#), pages 3 and 4, paragraph #17: "I also learned from Josh Walter that Tsoukalas was in direct contact with Seth Putterman and Ken Suslick, two of Taleyarkhan's known competitors."

Putterman and Suslick created fear, uncertainty and doubt in the Purdue administration. An Oct 8, 2005, e-mail from Jay Gore, at the time the associate dean of research, working with Linda Katehi, the dean of the College of Engineering, to the School of Nuclear Engineering staff follows:

"We do not recommend more work on preparation of press releases on this controversial subject without a quick prior review by my office. This subject matter is very controversial and DARPA has funded verification studies at UIUC (Suslick) and UCLA (Putterman). We should wait until these senior researchers opine on the Taleyarkhan discovery. If the results are positive we will have the opportunity to have many glorious news releases on the discovery.

"In the interim, ... [given] the anxiety we have about the discovery ... more news releases will not add to our reputation in my opinion."

Putterman and Suslick found a natural ally: Tsoukalas had his own agenda. According to a [lawsuit filed on March 7, 2008](#), by Taleyarkhan, Tsoukalas, Tatjana Jevremovic and DOES 1-50 are named as defendants in a civil complaint that reads as follows:

"This is a conspiracy involving certain individuals who made public statements to a worldwide magazine, Nature Magazine, through means that have falsely and maliciously defamed Taleyarkhan and have sought to harass, discriminate and intimidate Taleyarkhan on numerous occasions for the purpose of trying to defame him and his ... research."

Tsoukalas was later forced to resign and is now on a one-year sabbatical. Don Johnson, the judge on Taleyarkhan's case, who announced in December 2008

that he is giving up his bench to work for Purdue, asked Taleyarkhan's attorney for evidence to substantiate Taleyarkhan's allegations. On Oct. 9, 2008, Lewis delivered the [requested evidence](#) to the court.

When the Purdue investigation ended in the summer of 2008, Taleyarkhan did not escape unscathed, and his university charged him with research misconduct for two, arguably minor, offenses. The bulk of this report will discuss these two charges in excruciating detail.

Despite that fact that Purdue found Taleyarkhan guilty of two counts of research misconduct, neither that investigation nor any other investigation has found any conclusive evidence that he or his collaborators have committed fraud or falsified scientific data.

In the coverage of this conflict by mainstream media, the central point has been overlooked: A new science discovery has been made.

The Taleyarkhan group has shown that the telltale signals of deuterium-deuterium fusion - the production of neutrons and tritium - occur in tabletop thermonuclear conditions.

The group is convinced that the discovery is thermonuclear fusion rather than a novel, previously unrecognized nuclear process. Whether it will solve the energy problem is unknown. But it is possible.

When Taleyarkhan saw the 2008 draft report from Purdue's C-22 Investigation Committee, he discussed it with Purdue administrators Leah Jamieson and Joseph Bennett. On March 29, 2008, he told them that a "finding of misconduct on any allegation will equal fraud/fabrication in the public mind."

This perception is beginning to show up - for example, in Charles Seife's book *Sun in a Bottle*:

After nearly a year of deliberations, in July 2008, Purdue's last inquiry panel finally released its findings. It concluded that, yes, Taleyarkhan had committed scientific misconduct. According to the panel's report, Taleyarkhan had deceived the scientific community by falsely claiming the Xu and Butt paper was independent confirmation of Taleyarkhan's original bubble fusion paper.

Now, to add insult to injury, Seife's book - as shallow and misleading as it is - is being used as a reference for others in the media.

[Josh Dean](#) in the January 2009 issue of *Popular Science* writes that Taleyarkhan's "results ... would later be discredited, and last year he was stripped of his university chair."

[Ann Finkbeiner](#) in a Dec. 14, 2008, *New York Times* book review, writes that "this effort — recounted vividly by Seife, who originally covered it for *Science* magazine, which published the controversial paper — couldn't be repeated either and likewise ended in disgrace."

Finkbeiner is correct about the disgrace. But she and her source Seife are wrong that it couldn't be repeated. They have been misled. Although they have reported, they have not investigated.

Finkbeiner and Seife are referring to a [one-hour attempt](#) by Dan Shapira to measure neutrons (but not tritium) emanating from one of Taleyarkhan's experiments in Taleyarkhan's lab. Shapira and his colleague Michael Saltmarsh later [published a paper](#) in *Physical Review Letters*, writing in the first sentence, "We have repeated the experiment of Taleyarkhan." A future *New Energy Times* investigation will review this incident in greater detail.

Purdue's Charged Allegations

By August 2007, the Purdue Inquiry Committee had collected 34 specific allegations against Taleyarkhan. On Sept. 5, 2006 ([see timeline](#)), Purdue solicited allegations from faculty members Tsoukalas and Martin de Bertadano. The Inquiry Committee dismissed 22 of the allegations and decided that 12 deserved review by the Investigation Committee.

The Investigation Committee first "aggregated and restated" the 12 allegations "for the sake of clarity" into nine allegations. In the process, the committee created two new allegations and dismissed the original 12. But the members were sneaky about it. [This video](#) shows how they did it. When Taleyarkhan cried foul about the fabrication of the two new allegations in his appeal, the Purdue Appeal Committee argued about [the meaning of the word "new."](#)

This report examines the facts used by the Purdue C-22 Investigation Committee to determine that Taleyarkhan was guilty of research misconduct in the two new allegations. This report also presents Taleyarkhan's responses in his appeal, the subsequent Purdue Appeal Committee responses, as well as our own commentary.

Here are the two allegations which the Purdue Investigation Committee created and with which it then charged Taleyarkhan:

Allegation A.2: "Dr. Taleyarkhan with falsifying intent caused Mr. Adam Butt's name to be added to the author bylines of the papers even though

Mr. Butt was not a significant contributor to the experiments, the data analyses, or the writing of the manuscripts."

Allegation B.2: "Dr. Taleyarkhan with falsifying intent stated in the opening paragraph of his paper in *Physical Review Letters* **96**:034301 (2006) that 'these observations [referring to *Science* **295**:1868 (2002)] have now been independently confirmed.'"

Readers unfamiliar with the incident may wonder about all the fuss over the question of whether the replication by Yiban Xu (former Purdue postdoctoral researcher) and Adam Butt (former Purdue graduate student), referred to in the Taleyarkhan group *Physical Review Letters* paper, was independent.

The reason is that, buried deeply beneath the accusations, is the insinuation by several of the Taleyarkhan group's detractors that the experiment only works when Taleyarkhan is around, that Taleyarkhan is falsifying the data.

Of the more than [half a dozen papers](#) published in peer-reviewed journals on the Taleyarkhan group's sonofusion work, and a 181-page chapter in a textbook, none includes any work by the Taleyarkhan group that has been disproved.

There have been challenges to some of the group's papers, and minor errata have been published, but the work, as published, stands. Even two published alleged failures-to-replicate (Saltmarsh/Shapira and Tsoukalas' group) have shown confirmatory evidence of neutrons and tritium. These matters will be reported in a future *New Energy Times* investigation.

The success of the Taleyarkhan group in the journals has not stopped some competitors from making character attacks against them and denigrating their work in the popular media (including television).

American Physical Society's Review of Allegation B.2

On Dec. 12, 2008, the American Physical Society, the publisher of *Physical Review Letters*, independently considered allegation B.2 in response to some of its readers who brought the Purdue incident to its attention.

Initially, the organization was [prepared to publish a statement](#) that concurred with the Purdue Investigation Committee's findings.

However, after an internal review, the organization did not demand or even request that the Taleyarkhan group retract or modify the single sentence in the paper which Purdue cited in allegation B.2. Instead, the [Editorial Note](#) merely referred to the Purdue report and left it at that.

The organization has allowed the Taleyarkhan group's claim of independence to stand, despite the Purdue incident. Why didn't the organization go further? Are there reasons to question the validity of Purdue's investigation and decision? This report will help answer these questions.

New Energy Times reported (issue #31) on most of the external affairs (Putterman, Suslick, etc.) that precipitated the Purdue incident; however, this report will not go deeply into the internal affairs at Purdue that precipitated this incident. We will provide those details in a separate report in the near future.

Purdue's Procedural Errors

We first review the procedural flaws in the Purdue investigation. From a procedural (rather than factual) point of view, the Purdue allegations are invalid.

As Taleyarkhan wrote to Purdue on July 28, 2008, in his appeal, allegations A.2 and B.2 were fabricated by the Investigation Committee. Purdue in its appeal response on Aug. 21, 2008, explained how and why the charges were made, in an attempt to justify the actions of its Investigation Committee. In this writer's opinion, that attempt failed.

Purdue professor Mark A. Hermodson was chairman of the [C-22 Investigation Committee](#). Other members of the committee were Mary Ellen Bock of Purdue, Charles Kennel of the University of California, San Diego (and formerly with the UCLA physics department, home of one of Taleyarkhan's most aggressive competitors), James Kolata of the University of Notre Dame, Don Miller of Ohio State University, and John Schiffer of Argonne National Laboratory.

The committee received administrative support from Peter E. Dunn, Purdue's research integrity officer, and counsel from William Kealey, of the law firm Stuart and Branigin LLP. Dunn's responsibilities as research integrity officer were removed on Oct. 31, 2008, and given to Alysa Christmas Rollock, Purdue's vice president for human relations, 11 days after we published the video [Bubblegate: How Purdue Fabricated the Allegations](#).

The same day, we published a report about how, on Oct. 1, 2008, [Purdue \(Dunn\) changed the rules for misconduct investigations](#) which now (but not retroactively) permit Purdue investigation committees to make their own accusations against people whom the committee is investigating. Twelve days after our report, [Rollock was quoted](#) by the Lafayette, In., *Journal & Courier* as saying that the university's policies on research conduct were outdated and due for an overhaul.

New Energy Times investigated Taleyarkhan's allegation that Purdue fabricated A.2 and B.2. We list the following findings of fact (FF):

FF1: The [C-22 Policy on Integrity of Research](#) does not state that inquiry and investigative committees *may* fabricate their own allegations, nor does it state that they *must not* fabricate their own allegations. However, C-22 explicitly states the procedures for what these committees should do.

The C-22 instructions run counter to the idea (suggested by the Purdue Appeal Committee) that the Investigation Committee could or should fabrication its own allegations.

With regard to the "letter of the law," [C-22 policy](#) states on pages 2 and 3, item 4, that, "when an allegation related to research misconduct has been directed at an individual, that person must be advised in writing immediately."

On page 3, item 5, C-22 policy states the following:

The individual against whom an allegation has been raised must be afforded the rights of due process, which in this context shall mean being fully informed of all allegations, having the opportunity to communicate with the inquiry or investigation committee during the course of the deliberations and prior to the formulation of conclusions, and not being subjected to adverse changes in employment status due to the allegation during the proceedings.

[Taleyarkhan first learned](#) of allegations A.2 and B.2 on March 17, 2008, after the deliberations were complete and after the draft conclusions were formulated. In a March 19, 2008, letter to his attorney, he wrote the following:

The 3/17/08 [Investigation Committee] draft report reads like a hate-mongering letter targeted at one person, [Taleyarkhan] alone. ... Who is the true author of these hate-filled malicious reports that are unsigned by the various committee members as a team?

Today, I strived to put bullet point responses but upon reading through the material again, I got an overwhelming sense of revulsion at Purdue's actions in this process.

On page 5, paragraph 3, C-22 states, "The following procedure shall be followed in any situation related to research misconduct."

Item 1 on that page states, "The initial allegation of research misconduct must be reported in writing to the school Dean. ... The written allegation must be signed but requests for anonymity will be considered and final decisions with respect to such requests shall be made by the school Dean."

On page 3, item 5, C-22 policy states, "The individual must also be advised of any decisions to disseminate information or to seek information about the research from others."

Not only did Purdue fail to advise Taleyarkhan, but it also went to great lengths to disseminate unfavorable information about him.

Purdue issued a press release on July 18, 2008, stating that Taleyarkhan was found guilty on two charges of research misconduct and that a 30-day appeal process would now begin.

Taleyarkhan was advised of Purdue's decision to reject his appeal on Aug. 27, 2008, at 12:30 p.m. The acting head of the School of Nuclear Engineering, [Vince Bralts, tricked Taleyarkhan](#) in order to deliver the sanctions to him. Bralts apologized for doing so but said he was only following orders from Provost Randy Woodson.

Within minutes, [Purdue disseminated](#) a press release, the sanction letter and the Appeal Committee report to the media.

Purdue, in practice, also violated the "spirit of the law," of C-22 policy. Taleyarkhan writes that he was, in fact, notified in writing of all the allegations that were forwarded by the Inquiry Committee. But he was not notified of allegations A.2 and B.2.

Then there are also these facts:

1. A [letter from Charles Rutledge](#) (Purdue's past vice president for research) stating that "only a written allegation of research misconduct triggers the [C-22] policy procedures."
2. The Inquiry Committee collected 34 specific allegations and forwarded 12 of those allegations to the Investigation Committee.
3. A [letter from Victor Lechtenberg](#) (Purdue's past interim provost) that expressly directs the Investigation Committee to investigate the 12 allegations.

FF1.1: In the executive summary of its final report, the Investigation Committee explained the procedure for the origins of the allegations: "the Inquiry Committee forwarded twelve allegations." It did not explain that it made up new allegations.

FF1.2: In the executive summary of its final report, the Investigation Committee provided a reason that the specific allegations from the Inquiry Committee did not match the specific allegations in the Investigation Committee. The committee stated that, "for the sake of clarity, ... [it] aggregated and restated" the 12 allegations into nine. This explanation, given in the Investigation Committee report, failed to explain the origin of the A.2 and B.2 allegations because A.2 and B.2 were never there in the first place to aggregate and failed a second time when the Purdue Appeal Committee attempted to use the same "aggregated and restated" rationale in an attempt to explain the origin of A.2 and B.2.

FF1.3: In the executive summary of its final report, the Investigation Committee did not provide any other explanation for the origin of other allegations. It did not explain that it was bringing in an allegation that had not been made (in the case of A.2) or an allegation that had been dismissed (in the case of B.2). Such explanation was offered by the Purdue Appeal Committee only after Taleyarkhan wrote in his appeal that A.2 and B.2 were fabricated.

FF2: In the executive summary of its final report, the Investigation Committee, on page 7 under the heading for "A," provides the reference to Inquiry Committee allegations C.2 and D.2. In contradiction to the Investigation Committee report, allegation A.2 does not cross-reference to C.2 or D.2 in the Inquiry Committee Report. A.2 did not exist. Purdue's representation of the cross-reference of A.2 is incorrect.

FF3: In the executive summary of its final report, the Investigation Committee, on page 15, under the heading for "B," provides the reference to Inquiry Committee allegations C.3, C.5, D.3 and L.1. In contradiction to the Investigation Committee report, allegation B.2 does not cross-reference to C.3, C.5, D.3 or L.1 in the Inquiry Committee Report. Instead, it came from F.3, which was dismissed by the Inquiry Committee. Purdue's representation of the cross-reference of A.2 is incorrect.

FF4: The Purdue Appeals Committee report states that the broad issues in allegations A.2 and B.2 were identified by the Inquiry Committee and therefore "should not be considered as 'new' charges." With regard to A.2, this explanation is incorrect on its face; A.2 did not exist until the Investigation Committee created it. It is a new charge, regardless of how Purdue wishes to consider it.

Randy Woodson, the Purdue provost, Peter Dunn, the research integrity officer and William Kealey, Purdue's legal counsel knew - no later than July 28, 2008 - that allegations A.2 and B.2 had been fabricated. [They all knew.](#)

The Purdue Board of Trustees and [President France A. Córdova](#) knew - no later than Oct. 13, 2008 - that allegations A.2 and B.2 had been fabricated.

The Question of Double Jeopardy

According to Taleyarkhan, allegations A.2 and B.2 were reviewed and dismissed by a Purdue inquiry committee in 2006. The Purdue C-22 Policy does not specify whether a defendant in an academic investigation such as this is entitled to the federal constitutional right of protection from double jeopardy. That matter most likely will be determined by the judicial system.

Additional Questions of Due Process

Purdue created and implemented sanctions against Taleyarkhan before submitting them to the Office of Naval Research for approval as required by ONR Policy.

Purdue publicly announced their findings of misconduct in advance of the appeals phase.

Government Oversight

Now that Purdue has finished its investigation, the next step is for the federal government, which funded the research, to review the Purdue investigation and decide whether it will accept Purdue's investigation and sanctions.

This responsibility lies in the hands of Holly Adams, the inspector general for the Office of Naval Research. Adams' office is mandated to review Purdue's investigation and consider the following:

1. Did Purdue reach conclusions that are fair and equitable to Taleyarkhan?
2. Did Purdue conduct inquiries/investigations with fairness and the appropriate level of due process?
3. Does the Purdue investigation support conclusions by a preponderance of the relevant evidence or by the standard of proof defined in Purdue's (Research Integrity) C-22 policy?
4. Did Purdue safeguard Taleyarkhan "by providing the maximum possible confidentiality"?
5. Did Purdue "ensure a prompt and thorough inquiry and/or investigation"?

According to the [ONR Scientific Misconduct Allegations Policy](#) section i.6, Purdue was supposed to report to ONR "any institutional sanctions or corrective actions" that it might recommend, or imposed, if it had done so.

Neither the March 17, 2008, draft report of the C-22 Investigation Committee nor the April 18, 2008, final report of the C-22 Investigation Committee discusses recommended sanctions. Purdue, by way of Provost Randy Woodson, first [informed Taleyarkhan of the sanctions](#) on Aug. 27, 2008, after the end of the appeal period. *New Energy Times* knows of no report from Purdue to ONR that discusses recommended or imposed sanctions.

Adams will, according to ONR policy, "review the investigative report and supporting documentation to determine if the institution followed usual and reasonable procedures, and assess the accuracy, adequacy, and completeness of the report."

According to ONR policy, "if Purdue is unable or unwilling to conduct a prompt, thorough, and objective inquiry/investigation or if the institution has not adequately resolved the issues, ... ONR will conduct inquiries and investigations of its own."

Part 2: Review of Findings of Fact for Allegations A.2 and B.2

The remainder of this report will review in detail the findings of fact for allegations A.2 and B.2. Readers who do not wish to follow the fine details of exactly how Purdue took an innocent scientist, one of their own professors, and sacrificed him in an attempt to deflect scrutiny on the deeper issues in the school of nuclear engineering, should skip to Part 3: Review and Summary.

This report also reviews the many omissions of facts (as described in Taleyarkhan's appeal) as well as flaws with findings of fact in the Purdue C-22 Investigation Committee Final Report.

This report includes Taleyarkhan's responses to many of Purdue's findings of fact as well as the Purdue Appeal Committee's response to Taleyarkhan.

Allegation A. 2

Allegation A. 2 [Purdue Investigation Committee]

Dr. Taleyarkhan with falsifying intent caused Adam Butt's name to be added to the author bylines of the papers even though Adam Butt was not a significant contributor to the experiments, the data analyses, or the writing of the manuscripts.

We incorporate prior findings of fact and make the following additional findings of fact regarding this allegation.

Allegation A. 2 [Taleyarkhan Appeal/Rebuttal]

(Did not comment)

Allegation A. 2 [New Energy Times]

As we discussed in a previous section (Purdue's Procedural Errors), this allegation was fabricated. This is now a question of law: The federal government (Holly Adams, inspector general of the Office of Naval Research) will decide whether Purdue violated its policy or procedures.

FF1 [Purdue Investigation Committee]

One of the referees of the version of the manuscript submitted to PRL wrote, "It is also unusual that the experiment reported was apparently done by one person so that needed cross checks and witnessing of results seem lacking." The paper was later rejected.

FF1 [Taleyarkhan Appeal/Rebuttal]

(Did not comment)

FF1 [New Energy Times]

This Finding of Fact Is a Misrepresentation.

This is a misrepresentation and obfuscation of the relevant circumstances at the Purdue School of Nuclear Engineering. In fact, as will be shown later in this report, this same fact invalidates, rather than supports, a significant portion of Purdue's allegations.

In fact, for the work to have been done by one person was unusual. The reason is that Xu originally started out working with the Tsoukalas group, but he split from the Tsoukalas group and began to work independently. A future New Energy Times report will show that Xu's decision was conscientious and meritorious. Cross-checking the results, as suggested by the PRL reviewer, was a reasonable and prudent suggestion.

FF2. [Purdue Investigation Committee Version]

Dr. Taleyarkhan subsequently contacted Mr. Butt on January 26, 2005 and asked Mr. Butt to check some of the numbers (the correspondence between numbers in a data sheet and the paper) and to proofread the manuscript, and within 24 hours his name was added as an author. The manuscript was submitted to NED on January 27, 2005 and accepted on January 30, 2005.

FF2. [Taleyarkhan Rebuttal/Appeal Version]

Dr. Xu testified that he first contacted Dr. Taleyarkhan for permission [to involve Butt]. Dr. Taleyarkhan subsequently contacted Mr. Butt on January 26, 2005 after Dr. Xu had spoken with him and after he agreed to participate, he was asked to conduct research tasks with Dr. Xu as identified in FF2.4 (see below) and to review the manuscript, and within 24 hours his name was added as an author. The 1.31.2008 testimony of Mr. Butt is inconsistent with the testimony and signed affidavit of the primary author, Dr. Xu as well as the testimonies of Dr. Taleyarkhan and of Dr. Revankar. The manuscript was submitted to NED on January 27, 2005 and accepted on January 30, 2005.”

FF2 [New Energy Times]

Purdue's Finding of Fact Contains Multiple Omissions.

The Purdue Investigation Committee omitted the fact that the initiative for Butt's involvement came from Xu, not Taleyarkhan. The committee omitted the information that Butt's testimony was inconsistent with that of three other people.

FF2 [Purdue Appeal Committee]

(Did not comment)

FF2.1 [Taleyarkhan Rebuttal Addition]

Mr. Butt has himself not made an allegation of misconduct. In his testimony, he accepted that he was a willing participant in the offer to become co-author of the Dr. Xu et al. NED and NURETH-11 manuscripts.

FF2.1 [New Energy Times]

This Finding of Fact Is an Omitted Fact From the Purdue Investigation.

FF2.1 [Purdue Appeal Committee]

(Did not comment)

FF2.2 [Taleyarkhan Rebuttal Addition]

Dr. Xu in his sworn affidavit of 1.30.08 (para.8, page 2) has testified:

“I made the decision to include Butt as a co-author of the NED and NURETH-11 papers. On Nov. 30, 2004, a referee from PRL made a comment (why there was only one author, with no cross-checking of data) that prompted me to consider Butt as a co-author. Butt, who was already experimenting with me on sonofusion test cells, was best suited to properly conduct due diligence checks and help me independently confirm data, data transfers for post-processing, analysis of data, and conclusions.”

FF2.2 [New Energy Times]

This Is an Omitted Fact From the Purdue Investigation.

FF2.2 [Purdue Appeal Committee]

(Did not comment)

FF2.3 [Taleyarkhan Rebuttal Addition]

Dr. Xu testified that it was he who first requested Dr. Taleyarkhan to approve the approach to Mr. Butt. Para. 8 of Dr. Xu’s affidavit states:

“I asked Taleyarkhan, Butt’s thesis advisor at the time, for [permission] ... for this function. Taleyarkhan agreed ... [it] was a good idea. I approached Butt and asked him to help after receiving approval from Taleyarkhan.”

FF2.3 [New Energy Times]

This Is an Omitted Fact From the Purdue Investigation.

FF2.3 [Purdue Appeal Committee]

(Did not comment)

FF2.4 [Taleyarkhan Rebuttal Addition]

Dr. Xu testified (Affidavit paras. 8-13):

“Butt was grateful for the opportunity, happy and willing to accept. He conducted checks of data, validated and confirmed appropriate transfer and use for post-processing, data analyses and conclusions. Butt transmitted his findings ... via email. ... Butt willingly and enthusiastically signed the NED journal joint transmittal letter accepting co-authorship ... never showed signs of discontent to me. ... Butt willingly posed for pictures with me for a July 12, 2005 Press Release. ... He participated in discussions with E. Venere and provided comments for the Press Release.”

FF2.4 [New Energy Times]

This Is an Omitted Fact From the Purdue Investigation.

FF2.4 [Purdue Appeal Committee]

(Did not comment)

FF2.5 [Taleyarkhan Rebuttal Addition]

Dr. Xu testified (Para. 14 of 1.31.08 affidavit): “Taleyarkhan never exerted any pressure on me or, as far as I know, Mr. Butt to participate in the experiments.” This is consistent with the testimony of Dr. Taleyarkhan that the decision of Dr. Xu to invite (and for Mr. Butt to accept) to do the work with Dr. Xu was a situation involving consenting adults.

FF2.5 [New Energy Times]

This Is an Omitted Fact From the Purdue Investigation.

FF2.5 [Purdue Appeal Committee]

(Did not comment)

FF2.6 [Taleyarkhan Rebuttal Addition]

Dr. Taleyarkhan has testified under oath that after being approached by Dr. Xu for approval, he first asked Mr. Butt during the morning of 1.26.05 if (Mr. Butt) would willingly accept the work, and after Mr. Butt agreed to perform necessary tasks, followed up with an email during the morning of 1.26.05 requesting him to send back a written statement (in Dr. Taleyarkhan's view, for due diligence) confirming that Mr. Butt had actually performed the needed research tasks. Mr. Butt worked on the slated tasks through the day and eventually transmitted his confirmatory email to Drs. Taleyarkhan and Xu.

FF2.6 [New Energy Times]

This Is an Omitted Fact From the Purdue Investigation.

FF2.6 [Purdue Appeal Committee]

Dr. Taleyarkhan does not dispute the facts listed in FF2; he only states that the "key" subsequent act was Dr. Xu's, not his. This matter is the subject of FF3, not FF2. The Inv. C had evidentiary basis for FF2.

FF2.6 [New Energy Times]

The Appeal Committee Response Is a Distortion and Misrepresentation.

The appeal response ignores multiple omissions that Taleyarkhan has indicated. By stating that Taleyarkhan did not "dispute the facts," Purdue distorts Taleyarkhan's appeal. Taleyarkhan failed to note in his rebuttal that FF1 was a significant misrepresentation. FF1 proves his innocence because it shows the true origin of the motive to involve Butt.

FF3. [Purdue Investigation Committee Version]

Dr. Taleyarkhan and Dr. Xu state that the suggestion to add Mr. Butt came from Dr. Xu. According to Dr. Taleyarkhan, "Xu first approached Dr. Taleyarkhan for permission to involve Mr. Butt." Therefore, Dr. Taleyarkhan controlled the decision whether to add Mr. Butt as an author. According to Dr. Xu, Dr. Taleyarkhan told Dr. Xu that adding Mr. Butt as an author "was a good idea."

FF3. [Taleyarkhan Rebuttal/Appeal Version]

Dr. Taleyarkhan and Dr. Xu state that the suggestion to add Mr. Butt came from Dr. Xu. According to Dr. Taleyarkhan, "Xu first approached Dr. Taleyarkhan for permission to involve Mr. Butt." Therefore, Dr. Taleyarkhan did not control the decision whether to add Mr. Butt as an author. According to Dr. Xu, Dr. Taleyarkhan concurred with Dr. Xu that adding Mr. Butt as an author "was a good idea."

It is a stretch and inaccurate to state that Dr. Taleyarkhan “controlled” the decision to add Mr. Butt. Mr. Butt at the time was a M.S. student and Dr. Xu for due diligence requested Dr. Taleyarkhan's [permission] to involve Mr. Butt and Dr. Taleyarkhan concurred. If Mr. Butt wished to participate as co-author he was free to do so. There is no evidence to the contrary. This sort of mischaracterization and intense effort to demonize Dr. Taleyarkhan has been the norm for this 2008 Inv.C Report.

FF3 [New Energy Times]

Purdue's Finding of Fact Is Inaccurate and a Mischaracterization.

FF3 [Purdue Appeal Committee Response]

Dr. Taleyarkhan contends that it is wrong to conclude that he controlled the decision about adding Butt as an author.

After reading the Feb 2008 testimony, Dr. Taleyarkhan's April 7, 2008 rebuttal submission and two e-mails from Dr. Taleyarkhan on 1/26/05, we conclude that the Inv.C could reasonably conclude that it was "more likely than not" (the C-22 standard on p. 8 of C-22) that Dr. Taleyarkhan controlled the decision. The Inv. C did have evidentiary basis for FF3.

FF3 [New Energy Times]

The Appeal Committee Ignores Facts Given in Taleyarkhan's Appeal.

The Appeal Committee considered evidence presented by the Investigation Committee and concluded that the Investigation Committee came to the correct conclusion based on the evidence it had. The Appeal Committee ignored the evidence Taleyarkhan presented in his appeal.

FF4. [Purdue Investigation Committee Version]

Mr. Butt was not cited as a collaborator on the manuscript submitted to and rejected by PRL or previous manuscripts prepared for Science, Physical Review-E, or Physical Review Letters.

FF4. [Taleyarkhan Rebuttal/Appeal Version]

Mr. Butt was not cited as a collaborator on the manuscript submitted to and rejected by PRL or previous manuscripts prepared for Science, Physical Review-E, or Phys. Rev. Letters. This was not considered necessary nor appropriate at the time by Dr. Xu. Nevertheless, it was Dr. Xu's decision.

FF4 [New Energy Times]

Purdue's Finding of Fact Is a Distortion and a Misrepresentation.

Butt's name came into the picture for valid reasons in response to a comment from a reviewer for *Physical Review Letters*.

FF4 [Purdue Appeal Committee]

(Did not comment)

FF5. [Purdue Investigation Committee Version]

On the morning of January 26, 2005, Dr. Taleyarkhan asked Mr. Butt, his master's student, to become an author on Xu's NED paper. From the outset of Mr. Butt's involvement with the NED paper, Mr. Butt's contact on this issue was Dr. Taleyarkhan.

FF5. [Taleyarkhan Rebuttal/Appeal Version]

On the morning of January 26, 2005, only after receiving concurrence from both Dr. Xu and Mr. Butt, Dr. Taleyarkhan (who documented this understanding via email) asked Mr. Butt, his master's student, and then with Mr. Butt's agreement documented that he (Mr. Butt) was to become an author on Xu's NED paper. From the outset of Mr. Butt's involvement with the NED paper, Mr. Butt's contact on this issue was first Dr. Xu and then Dr. Taleyarkhan.

FF5 [New Energy Times]

Purdue's Finding of Fact Is Incorrect and Deceptive.

Purdue's representation of this matter is inaccurate. The "adding of an author" name was not the precipitating event; the action of Butt's involvement to cross-check precipitated Butt's being named as another author. It was diligent, not negligent, of Taleyarkhan to confirm whether Butt wished to be an author on the paper.

Xu made the decision to involve Butt, Butt participated, and Xu added Butt's name. Xu explains the motive. Xu's motive is inconsistent with the allegation that Taleyarkhan intended to deceive. The Investigation Committee report, not Taleyarkhan, is deceptive.

FF5 [New Energy Times]

Purdue's Finding of Fact Represents an Omission.

Not only was it not Taleyarkhan's original idea to add a second author, but it also was not Xu's idea. A complete trace of Xu's motive shows that the idea to include a second author and to perform cross-checks came from the PRL reviewer.

FF5 [Purdue Appeal Committee Response]

Dr. Taleyarkhan contends that he did not ask Mr. Butt to become a co-author but only inquired if he would be interested in accepting Dr. Xu's request to engage in due diligence leading to possible co-authorship. Dr. Taleyarkhan's contention is directly contradicted by Adam Butt's testimony (Feb. 08, 2008, pp. 169-170), which states that Dr. Taleyarkhan encouraged him to become a co-author of the paper because it would be good for his career. It is also contradicted by Dr. Taleyarkhan's own e-mails to Butt on 1/26/05.

We conclude that the Inv. C had evidentiary basis for FF5.

FF5 [New Energy Times]

The Purdue Appeal Committee's Response to FF5 Is Incorrect and Deceptive.

The first part of the first sentence, leading up to the word "but" is *not directly contradicted*. The committee misrepresented the distinction between "Xu's asking" (which came first) and "Taleyarkhan's encouragement" (which came later).

Of course Taleyarkhan thought it would be good for Butt's career. The committee's reference to Taleyarkhan's encouragement maligns Taleyarkhan's intent.

Taleyarkhan has [numerous testimonials](#) from staff, faculty and students to his credit. Not one of these even suggests that Taleyarkhan is a person who would coerce or pressure a student.

FF6 [Purdue Investigation Committee Version]

Dr. Taleyarkhan managed the submittal of the manuscript to which Mr. Butt was added.

FF6 [Taleyarkhan Rebuttal/Appeal Version]

Dr. Taleyarkhan facilitated the submittal of the manuscript to which Mr. Butt was added. To state "managed" is wrong since it implies Dr. Taleyarkhan was capable of deciding on whether Dr. Xu should include Mr. Butt as co-author, as also the review and acceptance of the manuscript to NED. This is emphatically false. Dr. Taleyarkhan had no privilege to do so. This aspect was the sole prerogative of the principal editor Dr. G. Lohnert (see his sworn affidavit). The decision to add Mr. Butt was solely that of Dr. Xu.

FF6 [Purdue Appeal Committee]

(Did not comment)

FF7. [Purdue Investigation Committee Version]

On January 26, 2005, Dr. Taleyarkhan asked Mr. Butt cc: to Dr. Xu, to review Dr. Xu's tritium-neutron work as soon as possible because Mr. Butt would be a co-author on the NED paper.

FF7 [Taleyarkhan Rebuttal/Appeal Version]

On January 26, 2005, after Dr. Xu requested, and Mr. Butt agreed, Dr. Taleyarkhan asked Mr. Butt cc: to Dr. Xu, to review Dr. Xu's tritium-neutron work as soon as possible because Mr. Butt would be a co-author on the NED paper.

FF7 [New Energy Times]

Purdue's Finding of Fact Is Incorrect, Misleading and Deceptive.

This alleged finding of fact is not correct. The truth is the opposite. Mr. Butt would be a co-author on the NED paper because he reviewed Dr. Xu's tritium-neutron work.

Taleyarkhan asked Butt to review the tritium-neutron work (after Xu asked Butt) because Xu told Taleyarkhan that the reviewer from *Physical Review Letters*, by implication, suggested it. Taleyarkhan did not ask Butt to do the review *because* Butt would be a co-author; that is backward.

FF7 [Purdue Appeal Committee]

(Did not comment)

FF8. [Purdue Investigation Committee]

Later on January 26, 2005 Dr. Taleyarkhan told Dr. Xu and Mr. Butt that the paper (which newly showed Butt as an author) looked good and recommended adding a figure, and asked Butt to keep the process confidential until published.

FF8 [Taleyarkhan Appeal/Rebuttal]

(Did not comment)

FF8 [New Energy Times]

Purdue's Finding of Fact Is Deceptive and Misleading.

Colleagues normally discuss and provide suggestions for work that is of common interest. This is not research misconduct.

The reason for the confidentiality was that, when the Taleyarkhan group had its first paper (*Science*, 2002) in review, two prominent physicists attempted to censor it before it was published.

That fact that Taleyarkhan suggested adding a figure is a weak argument that he was a significant contributor to the paper. It does not compare to the full day of work performed by Adam Butt to double-check the data.

FF9. [Purdue Investigation Committee]

In a third email on January 26, 2005 Dr. Taleyarkhan wrote Dr. Xu and Mr. Butt:

"Adam: You need to send me a separate email stating that you have examined the data with Dr. Xu and find the presentation of data in the manuscript for NED to be accurate (as best you can tell).

"Yiban: upon discussion with Adam, after you are done modifying the manuscript with the figures etc. send me a separate email note stating you feel the manuscript is ready for journal submission to NED (to enable me to confirm with the editor-in-chief)."

FF9 [Taleyarkhan Appeal/Rebuttal]

(Did not comment)

FF9 [New Energy Times]***Purdue's Finding of Fact Is Deceptive.***

Taleyarkhan is looking out for the students and ensuring that they have been meticulous. The fact that his name is not listed as an author for this responsible oversight of his student's work is a weak argument that he was a significant contributor to the paper and does not equate to research misconduct.

FF10. [Purdue Investigation Committee]

None of Mr. Butt's changes to the NED manuscript are substantive. Most are editorial. Several changes are in the area of neutron detection.

FF10 [Taleyarkhan Appeal/Rebuttal]

(Did not comment)

FF10 [New Energy Times]***Purdue's Finding of Fact Is a Misrepresentation.***

If the paper was done well and accurately, of course none of Butt's changes to the NED manuscript would be substantive. FF10 does not support the allegation of research misconduct.

Even if there were no changes, Butt cross-checked the data - an important and useful task. It was prudent that his name be listed as a co-author because this demonstrated to the PRL reviewer evidence of Xu's responsiveness. It was prudent for a second reason. What if Butt's work was not acknowledged and he later filed a grievance?

Robert Block (Rensselaer Polytechnic Institute and collaborator of Taleyarkhan) gave his opinion on this matter to the American Physical Society in Fall 2008:

I testified at the last Purdue hearing and am convinced that Purdue had already decided to destroy Dr. Taleyarkhan for reasons that had little, if anything, to do with science. The only charge against Dr. Taleyarkhan that they finally used to discredit him was that a graduate student's name was added to the paper after it had been essentially written and that the graduate student did only a small amount of work on the research. As a former professor, I applaud adding students to papers - it provides them with a publication as well as experience in scientific publication - and in my opinion Purdue has twisted this to discredit Dr. Taleyarkhan. I would be loath to believe that Physical Review would be part of this process.

The obvious should not be overlooked: Butt did not object to being included in the work and to being an author.

A third party or parties likely have drawn him into this incident. The possible reasons for his initial cooperation with third parties are the subject of another investigation.

FF11. [Purdue Investigation Committee Version]

Mr. Butt testified that he only checked the transfer of numbers from a spreadsheet to the manuscript and suggested a few minor editorial changes to the NED manuscript on the day before it was submitted.

FF11 [Taleyarkhan Rebuttal/Appeal Version]

Mr. Butt testified that he only checked the transfer of numbers from a spreadsheet to the manuscript and suggested a few minor editorial changes to the NED manuscript in the day before it was submitted. This is grossly inconsistent with the testimony (1.31.08 affidavit) of the lead author Dr. Xu who asked [for], worked with and accepted Mr. Butt as co-author. Nevertheless, this was the responsibility of Dr. Xu and not Dr. Taleyarkhan.

FF11 [New Energy Times]

Purdue's Finding of Fact Is Deceptive and an Omission.

FF11 [Purdue Appeal Committee]

(Did not comment)

FF12 [Purdue Investigation Committee Version]

Mr. Butt testified that he did not know his name was on the NURETH-11 presentation until the manuscript was completed.

FF12 [Taleyarkhan Rebuttal/Appeal Version]

Mr. Butt testified that he did not know his name was on the NURETH-11 presentation until the manuscript was completed. Nevertheless, this was the responsibility of Dr. Xu and Dr. Revankar, and not Dr. Taleyarkhan. Dr. Xu has categorically testified (Ref.1 --1.31.08 affidavit, paras. 8,13) to the contrary:

“I decided to include Butt as co-author. ... I added Butt during early 2005 to be co-author of the NURETH-11 conference paper because of the overlap of the NED and NURETH-11 papers. Butt was excited. ... Butt participated in data acquisition for sonoluminescent signals from ... Butts name was on the paper since January 2005 and the conference was held during October, 2005. ... Neither I ... nor Revankar nor Taleyarkhan pressured Butt in any way, shape or form.”

FF12 [New Energy Times]

Purdue's Finding of Fact Is Deceptive, an Omission and Incorrect.

Examining the circumstances of Mr. Butt's testimony in greater detail is appropriate. Was he under pressure? Was he responding reflexively to an intimidating group of attorneys representing both Purdue and Taleyarkhan? Why was Butt represented by an attorney during the hearings? Why did Butt confirm to *New Energy Times* that his attorney was Chuck Wilson although the Chuck Wilson of the Law Offices of John Charles Wilson in Alabama (where Butt lives) denied that he represents Butt? Where is the Chuck Wilson who represented Butt?

Why did the attorney representing Butt, according to the court reporter at the hearing, state on the record, "You don't need to know anything about me" when asked for his contact information? Who paid the costs for this attorney? Does the suggestion from one of Butt's fellow students ([Student 1 Affidavit](#), page 2, items 5 and 6) that a quid pro quo existed between Butt and Tsoukalas have any bearing on the Purdue incident?

FF12 [Purdue Appeal Committee]

(Did not comment)

FF12.1 [Taleyarkhan Rebuttal Addition]

Dr. Xu's testimony related to Mr. Butt's inclusion as co-author are consistent with the sworn affidavit of Dr. Revankar (paras. 4-9) stating:

During the time ... NURETH-11 paper Butt never indicated displeasure ... rather deep appreciation. ... Butt was to be the one presenting ... in France. ... Due to passport problem, I presented the NURETH-11 manuscript in France. ... Butt took credit for these works ... including NED and NURETH-11 manuscripts in his M.S. thesis. For the NURETH-11 paper, Butt was involved in the experiments since early 2005 ... review of the draft manuscript. There was never any pressure on either Xu, or Butt or me from Taleyarkhan to make Butt a co-author. ... Taleyarkhan did not participate in the work reported in the NURETH-11 paper.

FF12.1 [New Energy Times]

These are Omitted Facts From the Purdue Investigation.

The omission of these facts is puzzling. They are entirely relevant to the investigation. Their exclusion is prima facie evidence of Purdue's intent to deceive.

FF12.1 [Purdue Appeal Committee]

(Did not comment)

FF13. [Purdue Investigation Committee Version]

Mr. Butt testified that he did not contribute any of the data in the NED and NURETH papers. Neither Dr. Xu nor Dr. Taleyarkhan contend that Mr. Butt participated in the acquisition of any of the data published in the NED and NURETH papers.

FF13 [Taleyarkhan Rebuttal/Appeal Version]

Mr. Butt testified that he did not contribute any of the data. Neither Dr. Xu nor Dr. Taleyarkhan contend that Mr. Butt participated in the acquisition of any of the data published in the NED and NURETH papers. However, as testified Mr. Butt had worked closely with Dr. Xu on sonofusion experimentation for test apparatus preparation, etc. for over 6 months. Also, Dr. Xu has testified that Mr. Butt participated in data acquisition for thermal-hydraulics aspects reported in the group's NURETH-11 paper.

FF13 [New Energy Times]

Purdue's Finding of Fact Is Deceptive and Misleading and Represents an Omission.

Participation in data acquisition is not a requirement for legitimate participation as an author of a paper.

FF13 [Purdue Appeal Committee]

(Did not comment)

FF14. [Purdue Investigation Committee Version]

Mr. Butt's progress report of July, 2004, corroborates that he did not participate in the experiments reported in the NED and NURETH-11 papers. Mr. Butt was, however, doing thesis work in 2004-05 on fusion.

FF14 [Taleyarkhan Rebuttal/Appeal Version]

Mr. Butt's progress report of August, 2004, corroborates that he did not participate in the experiments reported in the NED and NURETH-11 papers. Mr. Butt was, however, doing thesis work in 2004-05 on fusion. Importantly, Dr. Xu's sworn affidavit (1.30.2008, para.7) declares a close collaboration on sonofusion work between Dr. Xu and Mr. Butt stating:

"I tutored a student Adam Butt from June 2004 onwards about fabrication and operation of sonofusion test cells and performance checkout studies." This is consistent with Xu- Butt-Revankar team collaborator, Dr. Revankar, in his affidavit of 1.31.08 (Para. 6). This is also consistent with the testimony of student Mr. [\[STUDENT 2\]](#) (para.11 – "I remember in our regular research meetings in 2005 that Dr. Xu and Mr. Butt were present and discussed the papers as co-authors ... nothing unusual about Butt being a co-author that I ever heard of." In Para. 12 Mr. [\[STUDENT 2\]](#) mentions "As best I could tell, Butt was excited to be co-author and never expressed any concern to anyone. His response to the press was positive."

FF14 [New Energy Times]

Purdue's Finding of Fact Is Deceptive and Misleading and Represents Omission of Facts.

Participation in data acquisition is not a requirement for legitimate participation as an author of a paper. Butt was highly competent to offer his skill of specialized knowledge of sonofusion; this made him an integral participant in the reported research.

FF14 [Purdue Appeal Committee]

(Did not comment)

FF15 [Taleyarkhan Rebuttal Addition]

Sworn affidavits of Ms. Darla Mize, [the administrative assistant to head of the school of nuclear engineering, as well as students [\[STUDENT 2\]](#) and [\[STUDENT 1\]](#)] who worked closely with Mr. Butt have testified to Mr. Butt being influenced by Dr. Tsoukalas to provide denigrating statements. Ms. Mize testified (Para. 33 of her 2.2.08 affidavit) that she witnessed Dr. Tsoukalas attending his own improperly devised secret (against Purdue regulations) investigation committee when Mr. Butt was called in. This secret committee was supposed to be independent, and Dr. Taleyarkhan was kept in the dark. Ms. Mize testified “It was Dr. Tsoukalas that called Adam Butt into his office to meet with the secret committee. Dr. Tsoukalas was heavily involved in forming and participating in that committee despite his efforts to tell us he was not involved”.

[\[STUDENT 1\]](#) in his sworn affidavit (paras. 4 to 6) offers observations that support the testimony of Drs. Xu and Revankar. [\[STUDENT 1\]](#) offers (Para. 5) “while Butt was finishing his thesis, he spoke with Dr. Tsoukalas and there was a rumor that he got pushed through his thesis. ... Dr. Tsoukalas was asking him questions trying to get him to say that Dr. Taleyarkhan told him to do something with regard to coauthorship of the paper. ... I attended Butt’s thesis defense in December 2005 along with Dr. Taleyarkhan, Dr. Tsoukalas, ... I felt it very unusual that the Head of the School of Nuclear Engineering showed up for the defense. In my experience, it is unusual. ... Dr. Tsoukalas was not part of Butt’s thesis defense committee. ... Dr. Tsoukalas left during the middle of Butt’s defense which is also unusual in my experience.”

The testimony in affidavits of students [\[STUDENT 1\]](#) and [\[STUDENT 2\]](#) along with the sworn testimony of Ms. Mize also suggests a conspiracy and abuse of authority on part of Dr. Tsoukalas to coerce Mr. Butt to tell lies. Unfortunately, the statement Mr. Butt was apparently coerced to provide in 2005-early 2006 has now been provided by Dr. Tsoukalas to the NY Times and places the student Mr. Butt in a highly compromising position.

FF15 [New Energy Times]

This is an Omitted Fact From the Purdue Investigation.

The Feb. 23, 2006, "Statement from Adam Butt," published by the *New York Times*, was not sworn testimony. It was not even a signed document. Butt appeared (by telephone) in legal hearings two years later, in early 2008, and provided sworn testimony at that time.

FF15 [Purdue Appeal Committee]

(Did not comment)

A.2 Conclusions

A.2 Conclusions [Purdue Investigation Committee]

The Committee makes the following conclusions regarding this allegation.

The Committee concludes that Dr. Taleyarkhan made the ultimate decision to add Mr. Butt as an author, and led the implementation of that decision. The sole apparent motivation for the addition of Mr. Butt was a desire to overcome a reviewer's criticism.

A.2 Conclusions [New Energy Times]

Purdue's Conclusion Is Deceptive, Misleading and Incorrect.

This distorts the truth. The motivation "for the addition of Mr. Butt" as an author was not "a desire to overcome a reviewer's criticism." The motivation to add his name was that, according to the reviewer, cross-checks were needed and Butt performed those cross-checks. His name was properly added for that reason.

A.2 Conclusions [Purdue Investigation Committee]

Responding to the fact that the initial drafts showed Dr. Xu alone as the author, a reviewer expressed concern about solo data acquisition. In response, Dr. Taleyarkhan urged the addition of Mr. Butt.

A.2 Conclusions [New Energy Times]

Purdue's Conclusion Is Misleading and Incorrect.

Xu initiated the addition of Butt's involvement in the work. Taleyarkhan ethically, reasonably, and justifiably facilitated Butt's involvement.

A.2 Conclusions [Purdue Investigation Committee]

In this context, it is plain that the intent was to create the appearance of a joint author who participated in the experimentation itself.

A.2 Conclusions [New Energy Times]

Purdue's Conclusion Is Incorrect. There is No Evidence for Intent.

A.2 Conclusions [Purdue Investigation Committee]

Yet that experimentation had occurred nearly a year before Mr. Butt was added as a co-author. Dr. Xu and Dr. Taleyarkhan acknowledge that Mr. Butt played no role in the data acquisition reported in the NED paper.

A.2 Conclusions [New Energy Times]

Purdue's Conclusion Is Irrelevant and Misleading.

Participation in data acquisition is not a requirement for a contributing author.

A.2 Conclusions [Purdue Investigation Committee]

Adding Butt as a co-author created a foreseeably misleading appearance of collaborative experimentation by Dr. Xu and Mr. Butt.

A.2 Conclusions [New Energy Times]

Purdue's Conclusion Is Unsupported and is a Character Attack.

A.2 Conclusions [Purdue Investigation Committee]

This is research misconduct.

A.2 Conclusions [New Energy Times]

Purdue's Conclusion Is Academic Persecution.

A.2 Conclusions [Taleyarkhan Appeal/Rebuttal]

The statements above are incredibly prejudicial based on the weight of evidence, since it willfully omits the signed sworn testimony of the affidavit of the “key” individual the lead author of the NED manuscript, Dr. Xu as also from others like Mize, [REDACTED] and [REDACTED]. Why this [sort of] deliberate overlooking of the fundamentals? First and foremost, the ultimate decision to add Mr. Butt was that of the principal author, Dr. Xu (who has testified in his 1.31.08 affidavit, para.8-13; Ref. 1 of the 4.18.08 Inv.C Report):

“I decided to include Butt as co-author. ... I added Butt during early 2005 to be co-author of the NURETH-11 conference paper because of the overlap of the NED and NURETH-11 papers. Butt was excited. ... Butt participated in data acquisition for sonoluminescent signals from ... Butts name was on the paper since January 2005 and the conference was held during October, 2005. ... Neither I, ... nor Revankar nor Taleyarkhan pressured Butt in any way, shape or form.”

The weight of the evidence shows the intent for addition of Mr. Butt to have been Dr. Xu's initiative, motivated by Dr. Xu's sworn desire from due diligence to account for a reviewer's criticism. In this context, it is plain that introspection induced need for due diligence led to the desire for Dr. Xu to take the extra step

to have a third party become involved in reviewing his acquired data, the data transfers, the data analyses, the presentations of data and the drawing of conclusions as also the review of the manuscript.

The intent was not to create the appearance of a joint author who participated in the experimentation for data gathering itself, but to engage in good-faith due diligence checks utilizing the best available individual at the time (other than Dr. Taleyarkhan or his colleagues), and in the process offer a junior colleague who was already working with and had assisted Dr. Xu on sonofusion-related work for several months the opportunity to become involved and receive visibility and credit. Yes, that experimentation had occurred nearly a year before Mr. Butt was added as an author.

But that was not the point since the experimental data were all archived and available for checks and reviews along with data transfers and displays in figures. Dr. Xu and Dr. Taleyarkhan acknowledge that Mr. Butt played no role in the data acquisition reported in the NED paper. Nevertheless, the initiative and mutually agreed upon efforts for inclusion of Mr. Butt that involved delving into the raw data and associated tasks was the initiative of Dr. Xu.

It was Dr. Xu's decision to accept Mr. Butt as co-author if he was satisfied with Mr. Butt's efforts. It was also Mr. Butt's decision to accept being a willing co-author and go along with signing the transmission forms for NED journal. Mr. Butt also conducted joint research with Drs. Xu and Revankar for their NURETH-11 paper with no involvement of Dr. Taleyarkhan. This is all affirmed in the testimony of Dr. Xu, Mr. Butt, Dr. Revankar, [REDACTED], [REDACTED] and Dr. Taleyarkhan. Therefore, the role of Dr. Taleyarkhan as facilitator upon request of Dr. Xu's and Dr. Revankar's for Mr. Butt's participation can simply not be considered as research misconduct on the part of Dr. Taleyarkhan. As a bottom line, as has been pointed out earlier, this Allegation A.2 has been illegally included and fabricated by the 2008 Inv.C and it's overseers. Allegation A.2 has not been included in the ONR-directed charge to the 2008 Inv.C. Therefore, based on procedural grounds and grounds for weight of evidence, this allegation should be removed from consideration [in its entirety].

A.2 Purdue Appeal Committee Response to Taleyarkhan Appeal/Rebuttal
(Did not comment)

Allegation B. 2

Allegation B. 2 [Purdue Investigation Committee]

Dr. Taleyarkhan with falsifying intent stated in the opening paragraph of his paper in Physical Review Letters **96**: 034301 (2006) that “these observations [referring to Science **295**: 1868 (2002)] have now been independently confirmed.”

We incorporate prior findings of fact and make the following additional findings of fact regarding this allegation.

Allegation B. 2 [Taleyarkhan Appeal/Rebuttal Response]

This is a newly fabricated allegation, not part of the express charter given to the ONR/C-22 mandated 2008 Inv.C. This allegation was already dismissed by the 2007 ONR/C-22 Committee (per their dismissal of Allegation F3 in their Aug. 27, 2007 Report to ONR) as well as by the 2006 C-22 [Inquiry Committee] (12/2006 Report). Therefore, this must be removed [on] procedural grounds. For completeness of the record, rebuttal is provided to demonstrate the lack of merit and reasoning behind dismissal.

Allegation B. 2 [New Energy Times]

As discussed in a previous section (Purdue's Procedural Errors), this allegation was fabricated. This is now a question of law: The government (inspector general of the Office of Naval Research) will decide whether Purdue violated its policy or procedures.

FF1. [Purdue Investigation Committee Version]

Dr. Taleyarkhan's Purdue appointment was effective on August 18, 2003.

FF1 [New Energy Times]

This Finding of Fact Provides No Support for the Allegation.

FF1 [Purdue Appeal Committee Response]

(Irrelevant)

FF1 [New Energy Times]

The Purdue Appeal Committee Response Is Irrelevant.

Page 6 of the Purdue Appeal Response lists a response allegedly to this, B.2 FF1. The heading reads: **B.2 FF1: (Appeal, p. 11, Inv.C report, p. 15)**. However, the text in the body of this section of the appeal response refers to Xu's postdoctoral appointment. This is not B.2 FF1 but rather B.1 FF1, which was not charged. See page 15 of the Investigation Committee report.

FF2. [Purdue Investigation Committee]

Dr. Xu has consistently asserted that he did the NED experiment alone and independently. Dr. Xu asserts that he took all the data alone and did the data analyses without input from Dr. Taleyarkhan.

FF2 [Taleyarkhan Appeal/Rebuttal]

(Did not comment)

FF2 [New Energy Times]

This Finding of Fact Does Not Support Purdue's Allegation but Does Support Xu's Credibility as a Witness.

FF2 [Purdue Appeal Committee]

(Did not comment)

FF3 [Purdue Investigation Committee]

Dr. Xu asserts that he was qualified to perform an independent confirmation of the bubble fusion experiments, having experience with bubble dynamics in his PhD thesis research and prior experience with radiation detectors. He received some instruction on setting up the equipment from Joshua Walter and Anton Bougaev in Dr. Tsoukalas' group. In his testimony to the Committee, he did not have good answers to questions related to detectors.

FF3 [Taleyarkhan Appeal/Rebuttal]

(Did not comment)

FF3 [New Energy Times]

This Is Not a Finding of Fact; It is an Insinuation

This is not a fact. It implies that Xu did not have the skill to perform the work without Taleyarkhan.

FF4 [Purdue Investigation Committee Version]

Dr. Xu used Dr. Taleyarkhan's equipment for the most part, though some of the parameters in the measurements were different. Dr. Taleyarkhan was closely involved with Dr. Xu's experiment – providing the equipment, the training in the use of the equipment, and considerable continuing advice in the course of the measurements. According to Dr. Revankar, only when Dr. Taleyarkhan was at Purdue and advising the researchers on most aspects of the experiments were positive results obtained.

FF4 [Taleyarkhan Rebuttal/Appeal Version]

Dr. Xu used Dr. Tsoukalas' group laboratory, experiment setup and design, thermal-hydraulic parameters, radically different mode of operation (using randomly emitted multi-energy neutrons from an isotopic source versus monoenergetic, timed onset pulsed neutrons from an accelerator, different protocols developed at Purdue for tritium monitoring, different spectrometer than the one used at ORNL, different detectors for neutron measurements, different drive electronics for the test cell system) and equipment for the most part, though the initial test cell design and operational training was provided to them from ORNL. ... Dr. Taleyarkhan was involved with providing consulting to Dr. Tsoukalas' group members and to Dr. Xu's experiment – providing only the original test cell not to Dr. Xu but to Messrs. Walter/Bougaev and Dr. Tsoukalas, the training in the use of the equipment, and continuing advice in the course of the efforts to learn how to overcome improper bubble cluster implosion related hydrodynamics. According to Dr. Revankar, only after ORNL (via Drs. Cho and Taleyarkhan) started to provide the test cell and training at Purdue and advising the researchers on the critical bubble dynamics aspects of the experiments were positive results obtained.

FF4 [New Energy Times]

This Finding of Fact Is Misleading, Deceptive and Incorrect.

Regarding Taleyarkhan's equipment, contrary to the implication of Purdue's FF4, Taleyarkhan's laboratory at Purdue did not exist during most of the time Xu was performing his experiments. Xu performed the experiments in the School of Nuclear Engineering's loaned space at the pharmacy laboratory. The lab was not Taleyarkhan's or Xu's; it was under the general direction of Tsoukalas.

One critical piece of equipment was provided by Oak Ridge National Laboratory - the test section (cell). Neither Taleyarkhan nor his co-authors made the test section (cell) used in the Xu/Butt replication. The test section was independently made by one of three glassblowers at Oak Ridge National Laboratory who had developed an understanding of and possessed the required skills to fabricate such test sections.

Regarding Taleyarkhan's involvement, during the five-month period when Xu was running the reported experiments (running a complete experiment from start to finish generally takes 8-10 hours), entry-exit logs required by the Nuclear Regulatory Commission show that Taleyarkhan was in the lab no more than a few minutes at a time for a total of no more than two hours over the entire five-month period.

The last sentence twists the fact that skilled art was required to fabricate a working test cell and that that training was required to develop expertise to obtain a positive result. These are both reasonable considerations for new science. Purdue, however, implied that Taleyarkhan's presence was required for a

positive result; this is incorrect, deceptive and misleading. Xu has expressly testified that Taleyarkhan never participated in any of the reported experiments. It is a groundless insinuation of fraud.

FF4 [Purdue Appeal Committee]

(Did not comment)

FF5 [Purdue Investigation Committee Version]

Dr. Xu described Dr. Taleyarkhan's tutoring to a C-22 committee and testified to the Investigation Committee that they conferred several times a week and that Dr. Taleyarkhan checked the equipment set-ups.

FF5 [Taleyarkhan Rebuttal/Appeal Version]

Dr. Xu described Dr. Taleyarkhan's tutoring to the Inquiry Committee and testified to the Investigation Committee that they conferred several times a week and that Dr. Taleyarkhan checked the equipment set-ups to help clarify the critical element determining success – i.e., what sorts of complex thermal-hydraulics issues and operational aspects of the bubble dynamics may lead to null results.⁷¹ Importantly, the G60 entry-exit logs for the time period November, 2003 through May 2004 (six months or 180 days) clearly demonstrate that for an experiment which lasts about 9 hours in a day, Dr. Taleyarkhan was present in Dr. Tsoukalas' G60 laboratory for only 5 min. to 15 min. durations, at most, less than a few days over 6 months. As repeatedly confirmed, Dr. Taleyarkhan was never present on the specific days when Dr. Xu conducted the experiments which generated the data published in NED. Dr. Xu has gone on record in FF2 (above) that he did the NED experimentation alone and independently and asserts that *he took all the data alone and did the data analyses without input from Dr. Taleyarkhan.*

FF5 [New Energy Times]

This Finding of Fact Is Misleading, Deceptive, Incorrect and Harmful to Academic Freedom and Scientific Progress.

Saying that an originator's speaking with a replicator and providing instruction should invalidate the independence (let alone validity) of an experiment is inappropriate.

FF5 [Purdue Appeal Committee]

(Did not comment)

FF6 [Purdue Investigation Committee Version]

Dr. Xu already had some experience with cavitation equipment because of his involvement with the Tsoukalas group which was (unsuccessfully) attempting to reproduce Dr. Taleyarkhan's results. Dr. Xu's thesis of February 2004 was entitled "Direct Contact Condensation with and without Noncondensable Gas in a Water Pool." Dr. Xu had very little, if any, specialized experience connected with the techniques of fast neutron detection (which was a crucial issue in the controversy) or with the detection of tritium.

FF6 [Taleyarkhan Rebuttal/Appeal Version]

Dr. Xu had completed his MS in Nuclear Engineering in 1986 and served for several years as Asst. Professor at China's prestigious Tsinghua University before coming to USA in 1996 and then was engaged as a PhD student in Nuclear Engineering for close to seven years conducting a wide variety of experiments and analyses in bubble dynamics as well as nuclear [and] two-phase instrumentation development as well as in neutron-void coupled stability research.

From Nov, 2003 on, Dr. Xu already had some experience with cavitation equipment because of his involvement with the Tsoukalas group which was attempting to reproduce Dr. Taleyarkhan's results. Dr. Xu's thesis of February 2004 was entitled "Direct Contact Condensation with and without Noncondensable Gas in a Water Pool." This thesis work has close parallels with gas vapor bubble cluster transient behavior in imploding bubble environments – according to Dr. Taleyarkhan an experience base which is a crucial component determining the ability to operate a successful sonofusion experiment. Dr. Xu had very little, if any, specialized experience connected with the techniques of fast neutron detection (which was an issue in the early discovery related to the *Science* publication during 2002 in terms of the relative de-merits of choosing large detectors that may become saturated from gamma input, versus standard size detectors), or with the detection of tritium.

Nevertheless, Dr. Xu had a long-standing nuclear engineering background dating back to his days as a junior faculty member in China, and then over a eight year period doing graduate studies resulting in a PhD degree in nuclear engineering from Purdue University. The tritium monitoring spectrometer was donated by ORNL and was calibrated and set up by ORNL expert Dr. M. Murray for general usage in the Civil Engr. Basement laboratory space under general control of Purdue's REMS organization. Dr. Xu had learned the protocol for usage and analyses for tritium monitoring from Purdue's other senior faculty members Drs. Revankar and Clikeman and also consulting from Dr. Taleyarkhan. As has been sworn by Dr. Revankar, it was he that worked and supervised Dr. Xu's work on tritium production related experimentation not Dr. Taleyarkhan.

Monitoring of fast neutrons with [pulse-shape discrimination] (PSD) was a new science 30+y ago, but at present is taught in nuclear engineering curricula at various universities. Dr. Xu learned this operation from Dr. Cho of ORNL during his visits to Purdue in 2004, together with consulting advice from Dr. Taleyarkhan. Importantly, Dr. Xu performed the appropriate calibrations for neutron PSD, and obtained data with 8+ [standard deviation] (SD) statistical significance, had his works successfully peer reviewed and approved for publication without influence from others.

FF6 [New Energy Times]

This Finding of Fact Is a Character Attack.

Taleyarkhan provides the omitted facts about Xu's background, experience and capacity to learn. The Purdue reference to an [unsuccessful replication](#) by the Tsoukalas group is incorrect. The corruption involved in that group and its misreporting of the positive results as negative are two of the reasons that Xu left the Tsoukalas group. Xu, to his credit, demonstrated a high degree of integrity and independence by leaving the group and admirable discipline by continuing the research on his own.

FF6 [Purdue Appeal Committee Response]

There is significant evidentiary basis for the Investigation Committee to conclude that Dr. Xu was inexperienced in neutron and tritium detection aspects. He may have received training in these after beginning his postdoctoral appointment, but this would have been under the supervision of Prof. Taleyarkhan to whom he reported, and as such would not be "independent." Dr. Xu's testimony to the Investigative Committee also strongly suggested that he did not have a strong experimental background in neutron and tritium detection prior to his arrival at Purdue.

FF6 [New Energy Times]

The Purdue Appeal Committee Response Is Invalid and Illogical.

If Xu learned something useful and important from his teacher Taleyarkhan, suggesting that his education (the reason why he was at Purdue) should have a bearing on the adjudication of the matter of independence is inappropriate.

FF7 [Purdue Investigation Committee]

On October 12, 2004, Dr. Taleyarkhan wrote in an email to his collaborator, Richard Lahey: "Dick: I'd like to discuss where a certain entity (that I've helped reproduce our bubble fusion experiments) will publish/present confirmatory results for maximum impact."

FF7 [Taleyarkhan Appeal/Rebuttal]

(Did not comment)

FF7 [New Energy Times]

This Finding of Fact Is Deceptive.

Taleyarkhan provided assistance, and this [has been acknowledged](#). This fact does not support the allegation or implication of "falsification," and it does not indicate a preponderance of facts to invalidate the Taleyarkhan group's (and Xu's) opinion of independence.

FF7.1 [Taleyarkhan Rebuttal Addition]

Dr. Taleyarkhan has supplied Purdue with the trail of manuscripts leading to the PRL 96 publication; in the first comprehensive draft dated 7.22.2004 the statement inserted by Dr. Taleyarkhan was "these observations have been successfully confirmed."

Dr. Lahey has thereafter (3.30.2008) clarified that it was co-authors Drs. Lahey and Block that revised the 7.22.04 draft and modified the statement to say "these observations have now been independently confirmed." Therefore, it was not Dr. Taleyarkhan but Dr. Lahey and others that actually initiated the insertion of the word "independently." An email from Dr. Lahey dated 7.31.2004 documents this series of changes. Recent emails from other co-authors have confirmed this fact, as well. All co-authors as a group gave their agreement to this verbiage as being appropriate.

Principally, as submitted to Purdue, Dr. Taleyarkhan's drafted manuscript of 7.22.04 included the following statement without using the word "independently":

Indeed, we have previously presented evidence (1,2,3,4) for 2.45 MeV neutron emission and tritium production during neutron-seeded cavitation experiments with chilled deuterated acetone. These observations have been successfully confirmed.

However, on July 31, 2005 Dr. Lahey wrote to the group members:

I have [taken] the material that you sent to me, and the comments of Robert Nigmatulin and Bob Block, and have completely written this paper. I believe that it came out well, but ,of course, it needs everyone's careful review and comments.

The draft of the modified paper was sent to PRL editors by Dr. Block and included the modified statement

...deuterated liquids. Indeed, we have previously presented evidence (1a, 2,3,4) for 2.45 MeV neutron emission and tritium production during neutron-seeded cavitation experiments with chilled deuterated acetone, and these observations have now been independently confirmed(5).

The entry made by Drs. Lahey in connection with comments from Drs. Block and Nigmatulin were defended by them as being valid based on facts and agreed upon by the entire team of coauthors, including Dr. Xu. Nevertheless, the above facts and evidence show that Dr. Taleyarkhan never had the intent to amplify the aspects of “independence” of the Xu et al. 2005 NED report; that initiative was from his co-authors collectively considered to be appropriate to this day.

FF7.1 [New Energy Times]

These Are Omitted Facts From the Purdue Investigation.

Taleyarkhan's defense of his group's statement that “these observations have been successfully confirmed” is unnecessary, though a person in his position might reasonably feel defensive. The Taleyarkhan group had every right to assert that its work had been [independently confirmed](#). The fact that some people may have disagreed with the group's opinion is irrelevant. Such differences of opinion do not equal “research misconduct.”

FF7.1 [Purdue Appeal Committee]

(Did not comment)

FF8 [Purdue Investigation Committee Version]

According to Dr. Taleyarkhan, in December 2007 he made an internet post as a “clarification for the record” regarding statements that he first made at Wayne State University in September 2005 about the work reported in the NED paper. In that 2007 post, Dr. Taleyarkhan stated that “Xu et al ... conducted their own experiments” (thus indicating that Dr. Xu’s co-authors were involved in the data acquisition) and the post asserted the NED work as “independent experimentation.” The post notes the NED paper’s acknowledgment of Dr. Taleyarkhan’s “advice, guidance, and assistance” along with his contribution of the test cell and it’s set up for the experiments, but his continuous involvement in guiding the research and in the publication process are not disclosed in the “clarification.”

FF8 [Taleyarkhan Rebuttal/Appeal Version]

According to Dr. Taleyarkhan, in December 2007 he made an internet post as a “clarification for the record” regarding statements that he first made at Wayne State University in September 2005 about the work reported in the NED paper. In that 2007 post, Dr. Taleyarkhan stated that “Xu et al ... conducted their own experiments” and the post clarified what was meant in one of the September 2005 slides which stated the NED work as “independent experimentation.” The post notes the NED paper’s acknowledgment of Dr. Taleyarkhan’s “advice, guidance, and assistance” along with his contribution of the test cell and it’s set up for the experiments, but his ...

[The part Taleyarkhan] struck out is justified because the sentence as written represents an oxymoron – how can one accept in the first part that Dr. Taleyarkhan points to the acknowledgment of Dr. Taleyarkhan’s advice, guidance and assistance – then later in the sentence mention that involvement in research is not!!?? This reeks of a desperate attempt to find something wrong, despite the best of proactive actions.

FF8 [New Energy Times]

This Finding of Fact Is Misleading.

Regardless of Taleyarkhan's reference to authors in the plural, Taleyarkhan was within reason to call the [experiment "independent."](#) To fault him for the use of authors in the plural is at best petty. Reasonable minds can disagree; a difference of opinion does not constitute misconduct.

FF8 [Purdue Appeal Committee]

(Did not comment)

B.2 Conclusions

B.2 Conclusion [Purdue Investigation Committee]

The original experiments of Dr. Taleyarkhan and collaborators at Oak Ridge reporting nuclear fusion associated with acoustic cavitation were published in 2002 and 2004. These results were controversial, and other investigators had difficulty reproducing them. Independent confirmation of the results was clearly highly desirable.

B.2 Conclusion [New Energy Times]

This Is Misleading and Incorrect.

The statement that "other investigators had difficulty reproducing them" is misleading and incorrect. The Putterman/Suslick replication attempts for the BBC and DARPA were reported in issue #31 of *New Energy Times*. The facts regarding the Saltmarsh and Shapira are explained in [this letter from Taleyarkhan](#). To the extent that Saltmarsh and Shapira performed measurements of neutrons in Taleyarkhan's (not their) experiment, they did, in fact, provide independent confirmation.

B.2 Conclusion [Purdue Investigation Committee]

It is not unusual for a senior person in science to mentor a junior colleague, advise and assist him in a number of ways, yet withhold the advisor's name from the resultant publication. But when it comes to a critical measurement whose objective is the **confirmation** of a result that the senior person has published, and that others had difficulty reproducing, then such withholding takes on a very different aspect. To quote a dictionary definition: "Reproducibility is one of the main principles of the scientific method, and refers to the ability of a test or experiment to be accurately reproduced, or replicated, by someone else working independently. Reproducibility is different from repeatability, which measures the success rate in successive experiments, possibly conducted by the same experimenters."

B.2 Conclusion [Purdue Investigation Committee]

The Committee finds much fault with Dr. Taleyarkhan's intent in advocating the independence of the Xu experiment.

B.2 Conclusion [Taleyarkhan Appeal/Rebuttal]

This is a reversal of actual facts as documented in archived email communications (see FF7.1 above). There is no evidence of intent on this front – as the fact FF7.1 above proves, it is exactly the opposite in terms of characterizing the overall independence of the Dr. Xu et al. 2005 NED paper work.

Drs. Taleyarkhan, Lahey, West, Block, and Nigmatulin have only asserted that the specific "observations" of successful sonofusion were from experiments conducted by Dr. Xu without influence nor participation by others, and therefore, the "observations" were independent. Dr. Xu himself has also attested to this.

B.2 Conclusion [New Energy Times]

This Sentence Is Misleading and Unsupported by Fact.

B.2 Conclusion [Purdue Appeal Committee Response]

(Did not comment)

B.2 Conclusion [Purdue Investigation Committee]

As documented in the findings of sections A.1 and B.1, regarding the period from October 2004 through to the present, Dr. Taleyarkhan has repeatedly mischaracterized the facts regarding his own involvement in Dr. Xu's manuscript. He has at times affirmatively misled Purdue University on this subject and appears to have influenced Dr. Xu's interactions with University inquiries.

B.2 Conclusion [Taleyarkhan Appeal/Rebuttal]

This is wrong and libel. There is no evidence that Dr. Xu was ever influenced. There is no evidence of intent to mischaracterize. Where an error in recollection of facts of 3 years ago was found, Dr. Taleyarkhan openly and readily admitted to that.

B.2 Conclusion [New Energy Times]

Purdue's Statements Are Unsupported by Fact.

B.2 Conclusion [Purdue Appeal Committee]

(Did not comment)

B.2 Conclusion [Purdue Investigation Committee]

Clearly, a concerted effort went into creating a false picture of the degree of independence that was involved in Dr. Xu's experiments. Given Dr. Taleyarkhan's insistent promotion of the Xu work, he should be completely transparent to the scientific world regarding his relationship to that work. The Committee condemns his failure to do so.

B.2 Conclusion [Taleyarkhan Appeal/Rebuttal]

Based on the findings in this section and in the preceding sections, we find that the claim "these observations ... independently confirmed" as offered by the group consisting of Dr. Taleyarkhan, Dr. West, Dr. Lahey, Dr. Nigmatulin, Dr. West and Dr. Xu are supportable.

- Sworn affidavits have been submitted by each of the group members to affirm that it was the "observations" that were independently confirmed, not that the entire effort was performed without input from the original discovery group.

- Evidence provided to the Inv.C by Dr. Taleyarkhan proves that the first draft of what became the PRL paper was prepared by Dr. Taleyarkhan on 7/22/2005 in which Dr. Taleyarkhan merely cited “These observations have now been confirmed (5)” and not, “these observations ... independently confirmed (5).” Ref. 5 is the NED paper. Email trail evidence along with testimony from Drs. Block and Lahey who prepared the PRL 96 paper indicate that the insertion of the specific PRL 96 statement including the word “independent” was not by Dr. Taleyarkhan, but was by his co-authors who prepared and submitted the paper during 9/2005 to the editors for review. This demonstrates the absence of *intent* on part of Dr. Taleyarkhan to highlight the independence of Dr. Xu’s reported confirmation results in NED. The force behind the inclusion of the word “independently” was from his co-authors but Dr. Taleyarkhan as all his co-authors agreed with this characterization and continue to do so to date.
- Sworn affidavits from Dr. Xu whose published work in the Nuclear Engineering and Design (NED) journal, from the NED Principal Editor Dr. G. Lohnert himself as well as co-author for the NURETH-11 paper, Dr. Revankar, have all affirmed that the published NED and NURETH-11 observations from the confirmation experiments themselves were obtained independent of any influence or involvement from the original discovery group.

The technical contributions of several from the original discovery team are acknowledged in the NED and NURETH-11 papers even though the assistance for composition, review feedback dissemination and rebuttal to referee comments was not explicitly accepted in the Acknowledgment sections by Dr. Xu et al., but that was Dr. Xu’s responsibility, not that of the original group.

B.2 Conclusion [New Energy Times]

Purdue's Statements Are Defamatory and Unsupported by Fact.

Taleyarkhan repeats things he said in his appeal. Here is what Taleyarkhan should have said here:

1. Purdue has failed to demonstrate that there was "clearly" any "concerted effort" to "create a false picture." Taleyarkhan has demonstrated this with all of the facts presented in his appeal.
2. The "degree" of independence has never been discussed, though it should have been. The suggestion that there are only two possible binary conditions for the interpretation of the term "independence" is a [fallacy and reflects an ignorance of how leading-edge science is performed.](#)
3. To whatever degree Taleyarkhan "promoted" Xu's work, a professor’s promoting his student's work and his student's replication is not unethical or improper.
4. The suggestion that Taleyarkhan was not "transparent to the scientific world" is unsupported, hostile and a character attack.
5. The committee's condemnation of Taleyarkhan is vindictive and defamatory.

B.2 Conclusion [Purdue Appeal Committee]

(Did not comment)

B.2 Conclusion [Purdue Investigation Committee]

Regardless of whether Dr. Taleyarkhan should have appeared as a co-author on Dr. Xu's NED and NURETH publications, Dr. Taleyarkhan, himself well knew the degree of his direct mentoring, editing, and promotion of Dr. Xu's work and the resulting publication. As detailed in the discussion above regarding the July 12, 2005 press release, Dr. Taleyarkhan was determined to direct the audience away from the facts of his involvement.

B.2 Conclusion [Taleyarkhan Appeal/Rebuttal]

Regardless of whether Dr. Taleyarkhan should have appeared as a co-author on Dr. Xu's NED and NURETH publications, Dr. Taleyarkhan, Dr. Lahey, Dr. West, Dr. Nigmatulin, Dr. Block and Dr. Xu all well knew the degree of direct mentoring, editing, and promotion of Dr. Xu's work and the resulting publication. As detailed in the discussion above regarding the July 12, 2005 press release, Dr. Taleyarkhan was overruled by Dr. Tsoukalas for the tempering statement related to supervision, and it was Dr. Tsoukalas who was responsible for proposing, and enforcing the statement to take credit for Dr. Xu's NED paper by asking the Press Office to state "sponsorship and oversight from Dr. Tsoukalas."

B.2 Conclusion [New Energy Times]

Purdue's Text Represents an Omission, Misrepresentation, and a Character Attack.

E-mails from Tsoukalas and Venere directly support Taleyarkhan's statement. See [July 11, 2005, and July 7, 2007, references.](#)

It is not Taleyarkhan who is attempting to redirect the audience but, as shown by the [numerous signed and sworn affidavits](#), Purdue's effort to direct the audience away from the facts of the chaos and disorder in its School of Nuclear Engineering.

B.2 Conclusion [Purdue Appeal Committee]

(Did not comment)

B.2 Conclusion [Purdue Investigation Committee]

Dr. Taleyarkhan's December 2007 "clarification of the record" post (FF8 above) belies his current assertion that he was not personally a proponent of Dr. Xu's work as "independent" and the post is additional evidence of Dr. Taleyarkhan's intent to obscure his own role.

Therefore, the Committee concludes that Dr. Taleyarkhan's PRL characterization of Dr. Xu's work as independent was intended to obscure his direct involvement with the Dr. Xu work. This is research misconduct.

B.2 Conclusion [Taleyarkhan Appeal/Rebuttal]

This twisting of facts is bizarre. Dr. Taleyarkhan was the one who wrote to Wayne State University for ensuring the web-posting provided the clarifications of Table 2 so people could judge for themselves on the issue of independence. The information trail showing that it was not Dr. Taleyarkhan who initiated the use of the sentence "observations have now been independently confirmed" in the PRL 96 paper but it was his co-authors who did so - is again [an effort] by the 2008 Inv.C management which twisted this finding to demonize Dr. Taleyarkhan reminding one of the statement "No good deed will go unpunished." All of the coauthors are proponents of the statement in the PRL 96 paper.

B.2 Conclusion [New Energy Times]

Purdue's Facts Fail to Support the Allegation.

Even if Taleyarkhan was a proponent of the "independence" of Dr. Xu's work, [he was entitled to have this opinion](#). This is not misconduct.

B.2 Conclusion [Purdue Appeal Committee]

(Did not comment)

B.2 Conclusion [Taleyarkhan Appeal/Rebuttal]

The "observations" were indeed confirmed by Dr. Xu without anyone else's involvement. Importantly, Dr. Taleyarkhan has already communicated publicly the clarification of this statement in various forums. Finally, the Principal Editor Dr. G. Lohnert of NED journal has also testified in his sworn affidavit (Para. 17) that he (Lohnert) agrees with the characterization of the published NED work related observations being independently confirmed stating:

For the principal editor of the journal NED ... bubble fusion is finally demonstrated. We did our experiments and data analysis "independently" says Xu. For Guenter Lohnert independence is given by the much simpler (viz., starkly different) experimental setup used by Xu versus that used by Taleyarkhan, Lahey, Block, Cho, West and Nigmatulin for their 2002 Science study.

B.2 Conclusion [New Energy Times]

Purdue's Facts Fail to Support the Allegation.

The scientific record now indicates that the editors for the two involved journals support Taleyarkhan, not Purdue, in the claim of "independence."

The editorial director for the American Physical Society's *Physical Review Letters*, Daniel Kulp, reviewed the matter in Fall 2008, and his published conclusion does not dispute the claim of independence or demand a correction. Once Kulp completed his investigation, he did not request a correction from the Taleyarkhan group.

He was cordial and respectful to Taleyarkhan: "I hope you and your family have a Happy Thanksgiving as well. Despite all the 'hubbub' concerning the Purdue report, rest assured that you are surrounded by good coauthors, and a firm belief in yourself and your work."

B.2 Conclusion [Purdue Appeal Committee]

(Did not comment)

B.2 Conclusion [Taleyarkhan Appeal/Rebuttal]

Therefore, no research [misconduct] occurred based on the facts and overwhelming proactive actions already taken by Dr. Taleyarkhan to publicize and accept the specifics of involvement in the Dr. Xu et al. NED work, the fact that it was not Dr. Taleyarkhan who either intended to or initiated the specific verbiage related to using "these observations have now been independently confirmed," the fact that the author Dr. Xu himself has publicly claimed his published NED work to be independent prior to the formulation of the PRL paper, the fact that the Principal Editor of the NED journal where the Dr. Xu paper was edited, reviewed and published himself agreed with Dr. Xu's claim of independence, and finally, the multiple steps already taken by Dr. Taleyarkhan and his co-authors to clarify and clear up the issue involved, one must conclude that his PRL 96 characterization of Dr. Xu's observations as independent was not intended to obscure Dr. Taleyarkhan's involvement with the Dr. Xu work. Because of the lack of any evidence or intent, the allegations cannot be confirmed as research misconduct. This conclusion of not finding research misconduct for this allegation was reviewed and concluded in the 2007 ONR-mandated Inquiry Committee Report transmitted to ONR on Aug.27, 2007 as excerpted below:

B.2 Conclusion [Purdue Appeal Committee]

(Did not comment)

B.2 Conclusion [Taleyarkhan Appeal/Rebuttal]

Excerpt from page 35 [previously] dismissed (and ONR Approved), current allegation B.2:

- F3. **Allegation:** In January 2006, after spectrum analysis was conducted allegedly proving his use of ^{252}Cf , RT published further fabricated and/or made false scientific statements in his PRL 96 paper: "*Introduction.-* Previously, we have provided evidence [1(a), 2-4] for 2.45 MeV neutron emission and tritium production during external neutron-seeded cavitation experiments with chilled deuterated acetone, and these observations have now been independently confirmed [5]." RT intentionally left his name off of the Xu publications in order to create a misleading impression of independent confirmation of sonofusion.
- a. **Sources:** Suslick and ONR

Analysis

If this allegation were true, it would qualify as research misconduct under the category of either fabrication or falsification.

Regarding the ^{252}Cf allegation, Taleyarkhan has responded that " ^{252}Cf was not used for any of the reported experiments of the PRL 96 paper. It was kept stored in a locked room about 50 feet away in a shielded storage container."⁵⁹ The IqC has received no evidence to the contrary.

The allegation that RT intentionally left his name off of the Xu publications in order to create a misleading impression of independent confirmation of sonofusion has been discussed above under allegations C1 and D1.

Conclusion

This allegation overlaps with allegations found in C1, D1, and F1 and thus should not go forward.

The above conclusion was also reached in the [December 15, 2006 C-22 Inquiry Committee Report](#) upon in-depth consideration on the specific allegations related to "independence" together with allegations related to Dr. Taleyarkhan's involvement in the NED publication.

B.2 Conclusion [Purdue Appeal Committee]

(Did not comment)

Part 3: Review and Summary

In this part, we will review several conclusions by a variety of parties. First, we look at the Purdue Appeal Committee Final Conclusion:

Purdue Appeal Committee Final Conclusion (Excerpt)

We have carefully considered the July 28, 2008 appeal document from Dr. Taleyarkhan. In the course of our examination, we reviewed many aspects of the Investigation Committee record. Our unanimous conclusion is that the Investigation Committee did adhere to due process in accord with C-22 and that it did have an evidentiary basis for the conclusions that it reached. Therefore, our decision is to affirm the decision in the April 18, 2008 C-22 Investigation Committee Final Report. The Appeal is denied.

[\(Full text of Appeal Committee Report\)](#)

For convenience, we list again the Investigation Committee's allegations:

Purdue Investigation Committee Allegation A. 2

Dr. Taleyarkhan with falsifying intent caused Adam Butt's name to be added to the author bylines of the papers even though Adam Butt was not a significant contributor to the experiments, the data analyses, or the writing of the manuscripts.

Purdue Investigation Committee Allegation B. 2

Dr. Taleyarkhan with falsifying intent stated in the opening paragraph of his paper in Physical Review Letters **96**: 034301 (2006) that "these observations [referring to Science **295**: 1868 (2002)] have now been independently confirmed."

Purdue Investigation Committee Conclusions (Excerpts)

Next, we revisit the conclusions of the Investigation Committee:

Purdue Investigation Committee A.2 Conclusion (Excerpt)

The Committee concludes that Dr. Taleyarkhan made the ultimate decision to add Mr. Butt as an author, and led the implementation of that decision. The sole apparent motivation for the addition of Mr. Butt was a desire to overcome a reviewer's criticism.

Purdue Investigation Committee B.2 Conclusion (Excerpt)

Clearly, a concerted effort went into creating a false picture of the degree of independence that was involved in Dr. Xu's experiments. Given Dr. Taleyarkhan's insistent promotion of the Xu work, he should be completely transparent to the scientific world regarding his relationship to that work. The Committee condemns his failure to do so.

...

Therefore, the Committee concludes that Dr. Taleyarkhan's PRL characterization of Dr. Xu's work as independent was intended to obscure his direct involvement with the Dr. Xu work. This is research misconduct.

[\(Full text of Investigation Committee Report\)](#)

Purdue Sanctions Announcement

Next, we look at the Aug. 27, 2008, Purdue press release which announces the sanctions:

Purdue Sanctions Professor for Research Misconduct (Excerpt)

In a report released to Purdue on July 18, a Purdue investigative committee found that Taleyarkhan falsified the research record on two occasions. Taleyarkhan arranged for one of his students to appear as co-author of a paper to create the appearance that the student had witnessed the experiment reported in the paper. Taleyarkhan then announced that the paper was an independent confirmation of Taleyarkhan's sonofusion experiments.

[\(Full text of Press Release\)](#)

Timeline of Events Related to Authorship of Xu/Butt Paper

Now we present a timeline that summarizes the facts of what actually happened:

- Oct. 21, 2004 - Yiban Xu submits manuscript to *Physical Review Letters* for peer review.
- Nov. 30, 2004 - A PRL reviewer demands that Xu conduct a different experiment and criticizes the facts that there is only one author and that the data could not have been cross-checked.
- By this time, Xu's submission to PRL meets with significant opposition from a referee who, according to Taleyarkhan, demonstrates philosophical objections for this mode of research. The referee demands a different type of experiment (that is, use of lasers to seed bubbles rather than neutrons). The PRL editor sends these comments to Xu with a discouraging note. Xu appeals to editor for reconsideration.
- Xu appropriately considers alternate publication venues and considers NED. In the interim, Xu considers the value of cross-checks as suggested by the PRL referee.
- Late Dec. 2004 - Xu considers Butt to do the cross-checks.
- Mid-Jan. 2005 - Xu asks Taleyarkhan for permission to approach Butt to do cross-checks because Taleyarkhan is Butt's thesis adviser. Taleyarkhan agrees to approach Butt.
- Jan. 26, 2005 - Taleyarkhan contacts Butt to seek his agreement to participate. Butt agrees.
- Butt cross-checks the data.
- Jan. 27, 2005 - Xu/Butt manuscript is submitted to NED.
- Jan. 28, 2005 - Xu receives PRL rejection of his appeal.
- Jan. 30, 2005 - Xu/Butt manuscript is accepted by NED.
- July 22, 2004 - Taleyarkhan writes in draft of what is to become the Jan. 27, 2006, PRL paper that "these observations have been successfully confirmed."
- ~July 31, 2004 - Co-authors Lahey and Block revise Taleyarkhan's July 22, 2004, draft and modify the statement to say "these observations have now been independently confirmed."
- Jan. 27, 2006 - Taleyarkhan group's paper publishes in PRL stating "these observations ... have now been independently confirmed."

Closing Comments from Taleyarkhan's February 2008 Counsel

Last, we look at the Feb. 20, 2008, [closing comments](#) presented to Purdue by Larry Selander, an attorney who represented Taleyarkhan at the time. The following excerpt comes from the first paragraph of the summary on page 2:

We believe it important to put this evidence (including the evidence submitted after the hearing) into perspective for the Investigation Committee. We believe, now more than ever, that Dr. Taleyarkhan cannot be found guilty of "research misconduct" under any definition.

Research misconduct requires intent. There is no direct evidence of intent. All the direct evidence is to the contrary. Any circumstantial evidence which one could argue is present is simply not sufficient to show anything Dr. Taleyarkhan did is more likely than not research misconduct (which is the "burden of proof" for this Committee).

New Energy Times Conclusion

Therefore, Purdue knew full well that there was no evidence of intent. Purdue knew this on Feb. 20, 2008, one month before it wrote and submitted its draft report of the C-22 Investigation Committee to ONR on March 17, 2008.

Purdue knew it two months before it wrote and submitted its final report to ONR on April 18, 2008. It knew it six months before it issued a press release stating that Taleyarkhan was found guilty on two charges of research misconduct on July 18, 2008.

And it knew it seven months before it issued a press release on Aug. 27, 2008, announcing that it had denied Taleyarkhan's appeal.

[Purdue knew.](#)

Appeal Committee Members

The three Purdue professors who wrote and signed the Appeal Committee report are listed below:



Nicholas J. Giordano
Distinguished Professor of
Physics and Department Head



Mark S. Lundstrom
Distinguished Professor of Electrical
and Computer Engineering



Andrew M. Weiner
Distinguished Professor of Electrical
and Computer Engineering