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Dear Seth Putterman and Brian Naranjo,

I am writing an article on the UCLA research that relates to the Taleyarkhan groups sonofusion research. I have several questions and would appreciate your getting back to me with your responses. My deadline is this Friday, Dec. 12, 5 p.m. Pacific. The questions pertain to a modeling simulation and physical replication attempt.

I have been advised by a source that DARPA's director, Anthony Tether, had approved Phase 1 funds on DARPA/ONR award N00014-05-1-0459* in 2005 for UCLA (as the prime contractor) to collaborate with Purdue on an attempt to reproduce external neutron-induced D-D fusion in deuterated acetone, as published in *Science* [1] and *Physical Review E* [2].

In the final report for award N00014-05-1-0459, submitted by Putterman, Putterman writes, "This project was to attempt to achieve a 'carbon copy' of the apparatus that [Taleyarkhan] used to generate data published in *Science* and *Physical Review E*."

A UCLA paper published in *Physical Review Letters* [4] states that DARPA funds were used for computer-modeling simulations of the Taleyarkhan group's *Physical Review Letters* [3] experiment.

In the final report for award N00014-05-1-0459, submitted by Putterman, Putterman writes, "From this award and previous DARPA/ONR grants a world class neutron detector was built and merged into this experiment."

Can either of you please tell me whether DARPA/ONR award N00014-05-1-0459 directed UCLA to address the *Science* [1] and *Physical Review E*

[2] work, the *Physical Review Letters* [3] work, or both?

The source states that UCLA's modeling, as published in *Physical Review Letters* [4], did not precisely represent the work reported in [3].

Specifically, the source states that the UCLA [3] work failed to take into account the use of ice packs. The source states that Putterman was present at a March 1, 2006, DARPA review meeting at Purdue and was advised by Rusi Taleyarkhan (Purdue) of the use of ice packs.

On March 7, 2006, UCLA uploaded a preprint to the Internet and, on Oct. 3, 2006, published a paper [4] which does not reference ice packs.

Can either of you please explain why the ice-pack detail was omitted?

The source states that the UCLA modeling published in *Physical Review Letters* [4] has been superseded by two subsequent publications, *Physical Review Letters* [5] and *Nuclear Engineering and Design* [6].

Aside from the response by Naranjo to [5] which was rejected by *Physical Review Letters*, has UCLA made any other responses to [5] and [6]?

In the final report for award N00014-05-1-0459, submitted by Putterman, Putterman writes, "At a kick-off meeting at Purdue in May 2005 Taleyarkhan presented us with blueprints for his acoustic chamber. ... Based upon these blueprints UCLA organized for 'identical' parts to be produced by various contractors."

Richard Lahey and Rusi Taleyarkhan have told *New Energy Times* that no blueprints from Oak Ridge [1] and [2] experiments exist. They say that there is only a hand-drawn sketch with some specifications, not at all like a fully engineered mechanical drawing.

Could you (Putterman) please clarify what is meant by the word "blueprints?"

Neither in [7] nor in the final report for award N00014-05-1-0459, submitted by Putterman, is there mention of an attempt to measure increase in tritium. Considering that this signature is equally, if not more, convincing of fusion than neutron signals, why is there no reference to attempts to measure tritium increase?

The 2007 UCLA paper [7] appears to indicate at least two significant variations to the configuration/protocol used by the Taleyarkhan group. The UCLA paper [7] states that the "acetone was degassed." However, it also states, "Adding small amounts of air increases the SL yield." The

Taleyarkhan group says that such an addition would cause the experiment to fail.

The paper [7] also states, "In most runs, however, the top plunger was near to but not in contact with the free surface." Taleyarkhan states that, if the top plunger is not in contact with the surface of the liquid, the experiment will fail. He states that these details were presented to UCLA during the May 2005 workshop.

Can either of you please explain these two configuration/protocol variations?

Thank you,

Steven B. Krivit


Editor, New Energy Times

References:

*Joint project of Seth Putterman PI, Rusi Taleyarkhan and Ken Suslick to Reproduce Nuclear Fusion in Collapsing Bubbles Surrounded by D-Acetone

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3. Taleyarkhan, R.P., West, C.D., Lahey, Jr. R.T., Nigmatulin, R.I., Block, R.C. and Xu, Y., "Nuclear Emissions During Self-Nucleated Acoustic Cavitation," *Physical Review Letters*, Vol. 96, p. 179903(E), (2006)
Erratum
4. Naranjo, B., "Comment on 'Nuclear Emissions During Self-Nucleated Acoustic Cavitation,' *Physical Review Letters*, Vol. 97, p. 149403
5. Taleyarkhan et al, Refutation of Naranjo's Cf-252 Accusation, *Physical Review Letters*, Oct. 6, 2006
6. Taleyarkhan, R.P., Lapinskas, J., Xu, Y., Cho, J.S., Block, R.C., Lahey Jr., R.T. and Nigmatulin, R.I., "Modeling, Analysis and Prediction of Neutron Emission Spectra From Acoustic Cavitation Bubble Fusion

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7. Camara, C.G., Hopkins, S.D., Suslick, K.S. and Putterman, S.J., "Upper Bound for Neutron Emission From Sonoluminescing Bubbles in Deuterated Acetone," *Physical Review Letters*, Vol. 98, p. 064301