

To: Taleyarkhan et al.  
From: Steve Krivit  
Subject: 2002DidenkoY-SuslickK-EnergyEfficiency.pdf  
Date: Thu, 13 Nov 2008 18:50:18 -0800

Can anyone please tell me if this paper indicates that Suslick et al. actually measured, or attempted to measure temperatures in SBSL or did they merely measure the temperatures in SBSL and then make a theoretical projection of temperature in MBSL?

Further:

2. Does Suslick indicate in this paper that he uses acetone (experimentally rather than theoretically) or does his expt. use only water?
3. Isn't the significant innovation of Taleyarkhan that he used acetone which provided for the possibility for temperature  $> 10,000$ ?

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From: "Colin/Suzanne West"  
To: [co-author list]  
"Steve Krivit"  
Subject: Re: 2002DidenkoY-SuslickK-EnergyEfficiency.pdf  
Date: Fri, 14 Nov 2008 12:35:20 -0500

The Diderenko/Suslick paper described some very nice experimental work, which I admired as soon as I read about it.

However, in my opinion, it was not directly relevant to the Oak Ridge/Purdue sonofusion experiments which used different liquids, much larger initial bubble sizes, much less dissolved air content and much higher acoustic pressure amplitudes.

As far as I can tell, the Illinois measurements used only water (aerated water!) whereas from the very beginning Rusi and I agreed, for sound reasons based on prior work on cavitation, that water should be rejected as a possible liquid for sonofusion experiments. And the more we learned, the more we came to appreciate the correctness of that decision.

Indeed, knowing what we know now, even very simple calculations that I made (and shared) indicate that the average temperatures inside the bubbles in our apparatus would be many times lower with water in place of, say, acetone. The much more complete and complicated computer studies by Rusi's other team members bear that out in considerable detail, I believe.

Also for your information, I attach a scanned copy of some early thoughts on this piece of Diderenko/Suslick work that I sent to Rusi in 2002.

Best regards,

Colin West