

## A study of some issues raised in a paper by Wood and Reynolds

Frank Legge, Jan 11, 2007 (Peer-reviewed Letter)

The title of the paper by Wood and Reynolds, dated December 14, 2006 was "The Scientific Method Applied to the Thermite Hypothesis".

<http://janedoe0911.tripod.com/JonesScientificMethod.html>

I will not attempt to answer the paper line by line but will copy and address the most salient points. The copied paragraphs are indented. For clarity my responses to each are in bold.

The authors ask a number of questions about proof of concept, culminating in the following:

Where is the proof that **nano-enhanced thermite** has EVER been used to bring down major buildings in controlled demolition (not simply cleaning up debris)? To our knowledge nano-enhanced thermite has never been used to bring down skyscrapers. Dr. Jones has criticized the competing hypotheses of others as "wacky, unproven ideas." We wonder if the same denunciation applies to thermite.

**It could be true, and probably is true, that the three buildings which came down on 9/11 were the first in which some variation of the thermite reaction was used in demolition. It is however not logical to say something cannot have happened merely because it had not happened before: there has to be a first time for everything.**

**It is certainly true that thermite had been used many times in arson attacks prior to 9/11.**

In his Berkeley lecture, Steven Jones claimed that nano-enhanced thermite or thermate could account for pulverization of the Twin Towers. One difficulty with his hypothesis is that nano-enhanced thermite apparently did not exist in 2001 and only recently has the Department of Defense awarded contracts to prove and develop such a product.

**This is incorrect. The history of nanothermite appears to go back far enough to be considered as a possible explosive in 2001. Here is a patent which is dated several years earlier.**

US19960684781

**19960722 (July 22, 1996)**

Legal status (INPADOC) of US5885321

US F 68478196 A (Patent of invention)

PRS Date: **1997/07/22**  
PRS Code: AS02

EFFECTIVE DATE: **1996/07/15**

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Abstract of US5885321

Fine aluminum powders are prepared by decomposing alane-adducts in organic solvents under an inert atmosphere to provide highly uniform particles selectively sized from about 65 nm to about 500 nm and believed particularly effective as fuels and additives, in pyrotechnics, and in energetic materials including composites, super thermite, and other explosives.

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**Clearly researchers were describing methods of preparing nano sized particles, using them in superthermite, and calling such material “explosive” in 1997. It would therefore not be logical to assert that by 2001, four years later, they would be unable to utilize the material in demolition. Once the nano thermite had been developed one would expect that over time various modifications using additives would be developed for different purposes. For example there is strong evidence that sulphur was incorporated (see appendix C of the FEMA report). Sulphur has the effect of lowering the melting point of steel. The term thermate is applied to such material. Other chemicals can be added to generate gas and thus produce an effect more like a conventional explosive.**

Where is the proof of concept for the hypothesis that thermite, thermate, and/or nano-enhanced thermite can do any of the things he claimed it did at the WTC, much less explain how angle-cut columns at ground level had any relevance to what pulverized the buildings? He fails to explain how a cutting/melting mechanism can pulverize.

**The cutting/melting process requires incendiary thermite/thermate. Jones doesn't have to explain how such a process can pulverize for the simple reason that he never said it did. To demand an explanation is therefore not logical. What he did say was that nanothermite was explosive, which is true, and therefore might have been the explosive which pulverized the concrete.**

Exactly how much energy would be required to pulverize 80-90% of each WTC tower? Dr. Jones has not shown that thermite/thermate/nano-enhanced thermite can generate sufficient energy. Exactly how much energy is required?

**To imply that Jones is mistaken in suggesting nanothermite could have been used merely on the grounds that he does not attempt to estimate the amount of energy required is absurd. Buildings are frequently demolished with explosives so why not these? And why not demolished at least partly using nanothermite?**

Exactly what volume of thermite/thermate/nano-enhanced thermite would be required in total to be placed in the building to generate enough energy?

**Similarly it is not logical to assert that an estimate of the volume of explosive must be given. It happens that nanothermite has an explosive yield higher than the conventional high explosive RDX so a smaller amount would be required. Any argument that nanothermite could not have been used because an unlikely amount would be required therefore fails.**

Exactly where did it need to be placed? Over how much surface area in the building did it have to be placed? For example, what x% of every beam, y% of every floor, z% of every wall, etc.? How thick would it have to be against various steel columns, beams, concrete, etc.?

**Similarly it is not logical to assert that Jones must describe the placement of explosives. The absence of a placement description will not negate the conclusions that can be drawn from discovery of explosive residues.**

Derrick Grimmer attempted one calculation along these lines and found that thermite would need to be slightly less than 3 inches thick over the surface of every box column [[Grimmer](#)].

**This is clearly a misreading of Grimmer's work. He estimated that the thermite would need to cover one foot of a column to cut it through or weaken it sufficiently to collapse, not the whole column. Patented devices exist which produce cuts which are much thinner, greatly reducing the amount required. Furthermore Grimmer made the mistake of thinking that the columns had to be cut through at every floor. A glance at the videos and photographs shows that the length between cuts was much greater than that, further reducing the amount of thermite required.**

How many hours of labor would it take to cover every surface of the building, carefully avoiding detection by WTC office workers? In any event, thermite does not explode and pulverize. It cannot explain the data.

**With every question their vexatious nature becomes clearer. Note the words here: "thermite does not explode". Jones has never said that it did. It is therefore not logical to ask this question. It is also extraordinarily absurd to say that explosives would be required to cover every surface of the building.**

Exactly who placed all the alleged thermite there? Please give us their names, ages, and social security numbers for validation.

**I admit this question floored me. I am stumped by it and need help and further explanation. I invite the authors to submit a paper for peer review to explore this question so that we can all better understand its relevance.**

Who directed them to place the thermite/thermate/nano-enhanced thermite there?

**Now at last we have come to the essential question. It is certainly reassuring to discover that the authors find this an important question. It is clear therefore that our goals are the same and the sooner we can start working in that direction, rather than attacking one another's research, the better it will be for the movement and the world.**

The authors now move on to the chemistry and behaviour of thermite.

How was the thermite ignited? Isn't thermite difficult to ignite?

**Yes, Jones proved by his experiments with a gas torch that thermite is indeed difficult to ignite. It is very helpful of the authors to have drawn attention to this fact. It is this very feature of thermite which gives some support to the idea that it may have been preferred for the destruction of the towers where severe fires would have been predicted and were of course later observed. Conventional high explosive would have been risky in the upper sections as it is easily set off by heat.**

Exactly how was ignition accurately controlled? How was it timed? Where is the experiment demonstrating it? Has thermite ever been ignited by remote control? Have multiple thermite ignitions ever been set off with exact timing by remote control? How many remote control radio frequencies would be required to do this? How many ignition devices would be needed to cut 236 outer columns and 47 core columns on each of the 110 floors? An ignition device on each column on each floor would total 31,130 ignitions. None of this would cut floor trusses or pulverize the concrete floors or any of the WTC contents, much less steel beams.

**The “Electric match” is a well established technology, used in pyrotechnics, air bags, rocketry and explosive demolition. It can be used with wire or radio control.**

**A brief examination of the debris reveals that it is absurd to suggest that all columns were cut at every floor.**

**It is absurd to suggest that anyone has stated that thermite will pulverize concrete: nanothermite might, but we all know that thermite will not. This question is therefore clearly vexatious.**

Dr. Jones says the buildings "collapsed," but he does not show the exact mechanism of "collapse," he does not model it (just like NIST does not model it), and he does not run experiments that demonstrate it. Of course such modeling is futile because the buildings did not collapse, they were blown to kingdom come. Where was the stack of all the steel from each tower at Ground Zero?

**It is absurd to suggest that steel beams were “pulverized”: they were obviously “cut”. The claim that there was not enough steel left after the collapse has not been properly supported. The basements were 7 storeys deep which would have provided space for a great deal of material. The concrete and office materials were pulverized and blown outward so little would fall straight down and occupy space. A brief examination of the videos shows that a great deal of the steel also fell outside the footprint of the towers, hence was spread thinly and not stacked up.**

**The countless pieces of steel we see falling in the videos are showing no signs of being pulverized. The numerous photographs of pieces of columns stuck into the surrounding buildings show no signs of pulverization.**

And what about the seismic signal? If most of the material from the Twin Towers crashed to the ground, there should have been a significant seismic event. Yet a NIST scientist says that "...*the collapse of the towers were not of any magnitude that was seismically significant...*" Here is the complete quote:

The National Construction Safety Team (NCST) Advisory Committee met via teleconference on Thursday, December 14, 2006, from 9:00 a.m. to 11:00 a.m.

The following statement was made on the WTC1 and WTC2 seismic signals:

*"The signals' strength due to the collapse of the towers were not of any magnitude that was seismically significant from an earthquake design standpoint or from the design or a failure of a structural component or of I would say of a piping system that might be used in a structure, so ah there wasn't anything that gave us pause in terms of that being a significant seismic event to have ruptured the pipeline."*

Thanks to Andrew Johnson for recording this.  
<http://www.checktheevidence.com/audio/911/>

**The above quote appears to be in reference to a question about a pipeline. What relevance it has to the question of whether the whole tower hit the ground is not apparent.**

**Had the towers fallen in a solid block from a considerable height of course a large seismic signal would have been generated, but they did not. The mass of concrete could have contributed virtually nothing to the signal as it was largely converted to dust and dispersed before it reached the ground.**

**The steel was chopped into short sections. Each piece would provide a signal and had they all hit the ground at the same moment the signal would have been large, but they did not. Many pieces would strike just as the earth was rebounding from the previous strike, thus having a canceling effect. Many would simply fall one after the other, never getting there quite in time to add to the previous strike. The extreme height of the towers would ensure that the impacts were spread out over time.**

**Once an appreciable layer of steel beams had formed the stack would act as a giant shock absorber, with energy being diffused in elastic and plastic deformation. It is therefore reasonable to believe that the seismic event would be unpredictable and not very large, making it necessary to look elsewhere for proof or disproof of theories.**

Can Dr. Jones show how each of his samples is valid and meaningful in terms of possible causation? For example, suppose Dr. Jones acquired a dust sample and had established its chain of custody. How would a chemical analysis of this dust sample prove anything about what caused the devastation at the WTC? What is the logic? A guy in a white lab coat working with something in his lab does not in and of itself establish any causal connection with the events of 9/11 in New York City. We cannot presume a connection, it must be shown. Connections must be drawn conceptually and supported empirically. That is using the scientific method.

**As the residues are consistent with the use of thermite, or one of its variants, the theory is “supported empirically”. The residues provide strong prima facie evidence for the use of explosives or incendiaries in the demolition. Jones has never said it was proof. What Jones has provided is the empirical scientific evidence. He now calls for further investigation which would become a forensic investigation.**

**Surely we are all calling for further investigation. There are, as the authors of course well know, several lines of evidence that the official explanation for the demolitions is not correct, for example the towers came down too fast and red hot metal was found weeks later in the basements. The authors should be pleased to have additional evidence, thermite residues, to support their plea for further investigation. It is not logical that they should seek to destroy the support that Jones provides for what must be their fundamental position, namely that the official explanation is incorrect and must be reviewed.**

Dust is not location specific. A dust sample does not allow discrimination about what caused the destruction WTC7 versus WTC1 and 2. Videos, eyewitness testimony, the debris pile, the protective bathtub and other evidence establish that WTC1 and 2 exploded and WTC7 imploded. No amount of dust analysis will change these facts. The destruction method for WTC1 and 2 were fundamentally different from the destruction method for WTC7.

**Of course the collapse of WTC 7 appeared different from that of the towers. As thermite residues were found there is a need for a forensic investigation regardless of whether the material came from WTC 7 or the towers.**

**Even if only one building had a thermite derivative used in its destruction that is still sufficient grounds for an investigation. It is not logical to suggest otherwise.**

If the Twin Towers were destroyed by unconventional means, how could a scientist know what traces of material it would or would not leave? How would she know *a priori*?

**It is not logical to suggest that one needs to know in advance what has caused a certain effect. One looks at the evidence, makes various hypotheses, and tests the hypotheses against the evidence. If a piece of evidence contradicts a hypothesis the hypothesis must be discarded. In that way the field of possible causes is narrowed.**

The authors then move on to discuss the scientific method.

Dr. Jones offers no proof that thermite, thermate, or nano-enhanced thermite could have pulverized the buildings, so would it be logical to conclude that he is now pushing "mini-nukes" because that the only other method [Jones](#) has written about? The illogic of this conclusion should be obvious but why has Dr. Jones said that "Wood and Reynolds are promoting [mini-nukes](#)" just because we find thermite an unsatisfactory hypothesis? We explicitly declare mini-nukes inconsistent with the data of 9/11.

**On their website the authors state that all hypotheses for the destruction of the buildings, including the use of explosives, are ruled out except for mini-nukes and directed energy weapons. It therefore does not appear logical for them to assert that Jones was incorrect in saying they are promoting mini-nukes. I am glad to hear they are now explicitly declaring that mini-nukes are inconsistent with the data. They are now aligned with Jones on this point.**

Dr. Jones has described his thermite/thermate/nano-energetic thermite "results" as "preliminary" for more than a year. When will Dr. Jones acquire enough confidence in his work to reach conclusions? How can a paper with "inconclusive" results be accepted in a tier-one "peer-reviewed" journal? For that matter, does it go through "peer review" every time Jones changes it? Dr. Jones claimed his paper was accepted in a "peer-reviewed" journal over a year ago. When will it appear? We are still waiting.

**Jones has clearly structured his paper as a source of evidence for the public upon which the reader can make judgments. As a scientist this is a perfectly reasonable thing for him to do. A forensic investigation to prove guilt beyond reasonable doubt is something different and which I hope we all agree there is some hope of achieving, given the analysis of evidence which Jones and others have provided.**

Why does Dr. Jones continue to boast that he uses "the scientific method" after it has been pointed out repeatedly that his thermite hypothesis does not account for the data? [[Reynolds and Wood](#)] Does not science throw a failed hypothesis overboard after the evidence repeatedly contradicts it?

**Jones has never claimed that thermite or its variants account alone for all the observations. There is obvious evidence that incendiary thermite was used and there is evidence that the towers exploded which may have been caused by nanothermite or may have been caused by something else, such as conventional demolition explosives.**

The authors bring up again their claim that Jones is wrong about the way in which aluminium glows when heated. This has been satisfactorily dealt with before by Jones and Legge, see their papers on Scholars for 9/11 Truth, however I will make brief comments here.

Steven Jones has stubbornly insisted that aluminum does not glow like iron. Yet aluminum glows just like iron if it is heated to the same temperature at which molten iron glows.

**It is not true that aluminium “glows just like iron”. What is true is that iron and aluminium will radiate at the same colour in the dark if at the same temperature. What is not true is that they will radiate with the same intensity. Iron has a high emissivity while aluminium has a low emissivity, about the same as tungsten, as the experiment by Wood and Zebuhr shows. The low emissivity of aluminium, combined with its high reflectivity, cause aluminium to appear silvery in daylight, as the reflected daylight overpowers the coloured glow.**

**As the incident in question, the stream of yellow/orange and flashing white material flowing from the South tower just before it collapsed, was occurring in bright daylight it would have appeared silvery if it had been aluminium. It did not. It looked very similar to material flowing from known thermite reactions.**

### **Conclusion**

This study shows that the paper by Wood and Reynolds is largely a collection of untrue, illogical, absurd and vexatious assertions and questions. While it contains some truths it appears to have been contrived to confuse rather than to illuminate. This suggests that its purpose is not to raise serious questions for debate but simply to destroy the credibility of Prof. Steven Jones. It has of course failed in this attempt.

It is regrettable that at this time, when the public is at last becoming aware of the issues surrounding 9/11, there should arise this public controversy, as it must reduce the momentum of the truth movement.

I urge all those who find reason to dispute the claims of fellow workers to attempt to work through the issues privately or in the many forums devoted to this task. As we are all committed to science it should not be difficult to resolve differences by discussion so that we can present a consistent and believable case to the community. If we do not do this, strong arguments will be passed over along with the weak.

We should all give serious thought to the question: what is the fundamental goal of our work? The only reasonable answer to this is to present the most convincing case to the public that the official explanation of 9/11 is a cover-up of criminal activity. The public must be convinced of this as politicians will not act unless they perceive strong public support. That in turn requires support from about two thirds of the population.

The goal of persuading the public to call for the reopening of the investigation is much more important than resolving minor differences about how some of the evidence may be interpreted. It is to be hoped that we can all agree to use our best efforts and best strategies to achieve the real goal. Much depends upon it.

