

# **EXHIBIT 1**

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**From:** Tom Darden <tdarden@industrialheat.co>  
**Sent:** Friday, March 07, 2014 10:31 AM  
**To:** Tom Sloan  
**Subject:** Re: Industrial Heat Update 3/6/14 CONFIDENTIAL

Got it, keep me posted on whether 4/2 works, I may be able to come over then. Thanks.

Tom Darden  
919 522 4095 m

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**From:** Tom Sloan  
**Sent:** Friday, March 7, 2014 10:21 AM  
**To:** Tom Darden  
**Subject:** Re: Industrial Heat Update 3/6/14 CONFIDENTIAL

Thanks. We are very spread out everywhere at the moment. John is skiing in Aspen. I am going to Telluride next week. We have a meeting scheduled for April 2. Tom

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**From:** Tom Darden <tdarden@industrialheat.co>  
**Date:** Friday, March 7, 2014 10:18 AM  
**To:** Tom Sloan <tsloan@sloancapitalco.com>  
**Subject:** Re: Industrial Heat Update 3/6/14 CONFIDENTIAL

By the way, I'd love to come over there and update you guys--next week is pretty free for me. I got to China Friday.

Tom Darden  
919 522 4095 m

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**From:** Tom Sloan  
**Sent:** Friday, March 7, 2014 10:10 AM  
**To:** Tom Darden  
**Subject:** Re: Industrial Heat Update 3/6/14 CONFIDENTIAL

Tom, thanks for your very helpful update. I really appreciate your careful and measured approach to understanding the progress and testing of the technology. While the results are far from determined, it is clear that the technology continues to develop serious inquiry and interest. We look forward to hearing more as you get more definitive results. Tom

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**From:** Tom Darden <tdarden@industrialheat.co>  
**Date:** Friday, March 7, 2014 12:43 AM  
**To:** Tom Darden <tdarden@industrialheat.co>, "Watkins, Thomas" <tcwatkins@schellbray.com>  
**Subject:** Industrial Heat Update 3/6/14 CONFIDENTIAL

This report describes some of the key events at Industrial Heat (IH) in February. The sections after the Summary offer more details for those of you with time to read a long document, but the Summary contains the salient points.

## Summary

The third independent test of Rossi's technology began Wednesday, 2/26/14 in Switzerland. The committee of professors managing the test reported after one day that the new device appears to be generating 4-6 times as much energy as it is consuming. However, infrared measurement methods are subject to large errors based on settings which are specific to different materials and temperatures, so we are withholding judgment until the scientists have analyzed the data.

Over the week that the test has been running, Rossi reports daily on the output and says it continues as before. But again, we will wait until the professors reach their final conclusions and we have a chance to review the work. We are not relying on Rossi's informal conclusions. The inputs and outputs are being recorded on computer drives and cameras, for future analysis by the committee of scientists, five of whom are from Sweden and two of whom are from Italy.

We are exchanging research license agreements with two very large US manufacturing companies. Both want to license our technology, if their internal tests are successful, and both seem highly motivated. The names of the companies are confidential.

We are increasing our patent work and spending. We have about 25 filed provisional patents now, and we are working on more. Many were filed by Rossi, and they are very informally written, so we need to re-do this work. The US patent office might be slightly more receptive to LENR patents now than they have been, although still not highly receptive.

## Public Relations

My last update reported that word had gotten out about Industrial Heat being the entity backing Andrea Rossi's technology. Our goal was to avoid any publicity for as long as possible, simply because LENR technology, and our inventor specifically, are so controversial. We preferred to be identified only after achieving some success. But once we were known to be involved, we issued a press release so that people would have some facts about who we are and why we are interested.

Broadly, the results of the news stories have been positive. Interested technology partners have been able to reach out, and we are having some productive conversations, detailed below.

## Licensing

We have visited two large technology-based manufacturing businesses to discuss limited, research-based licenses. We have traded drafts of such an agreement with one, and it appears they will sign something acceptable to us. Under the discussed terms, they will assess our technology both theoretically and through testing. They will have no rights to the technology, or very limited rights, and they will have to create a limited internal group with restricted access to information. That group will not share their knowledge or work on other LENR projects. IH will get their data and engineering work. Either of us can stop the process at any time.

Both of these companies are doing this because our technology, if successful, would substantially affect their businesses. They want advance awareness and an early relationship with us so they will be at an advantage in licensing negotiations. The second company sent another draft document to us this week to review, with conceptually similar terms. While both companies are motivated, they are formally skeptical as well. Rossi's reputation and unpredictability add to their skepticism, but also increase their appreciation for IH's role as an intermediary. We believe additional companies would do similar research at no cost to us, just to be able to see if the technology might have application to their business. In a similar vein, NASA has done general market and technical assessments of Rossi's technology as it could affect them, based only on the last Swedish test. Their report is attached below. Interestingly, Rossi emailed me today regarding one of his current research projects, which entails designing a jet or rocket motor using his devices. I am more interested in a simple steam boiler or a water heater right now, but it is good to see he is thinking beyond the current test in Switzerland.

I met recently with a brilliant theoretical researcher in Greenwich, CT, who made money in financial services software and now does LENR research in his own laboratory; and with a German financier who supports Ukrainian physicists who believe they have a theory explaining how LENR works, and who want to build a test reactor. Both want to team up with us.

I met also with Brillouin's entire management team, and I have spoken on the phone to their financial person several times. You may recall that IH owns a small investment in Brillouin, as well as rights to Rossi's technology. They are

excited about IH becoming a larger investor, but they are upset that we chose Rossi instead of them for a significant investment--although they understand why, and they perceive Rossi is ahead of them in progress. I believe we have a good relationship. They agreed at a handshake level that we could license their technology for China, if we make a material investment in their company, probably \$10 million. I am discussing this with some potential Chinese partners now who would invest the capital and use the technology.

We have been contacted by several of Rossi's unhappy licensees from outside our geographic territory. We generally have avoided such conversations. But this is happening because people see us as an aggregator of LENR technologies and a friendly supporter, which is consistent with reality and helpful to us. Our long term goal is to gather these technologies and researchers and get the technology out to others who can implement and do further research.

We also have been approached by people involved with two well-known entrepreneurial technology investors, with interests in rockets and alternative energy. We have not met with them, but we might in the next 30 days. One of them previously tried to meet with Rossi, but Rossi backed away before the meeting. I will attempt to find out why--usually the answer is fear of technology theft. The other is a large supporter of Tri-Alpha, a fusion company in California that we believe has spent hundreds of millions of dollars so far.

### Testing and Research

I have mentioned in prior updates that the committee of mostly-Swedish physics professors that tested Rossi's reactor in Italy in 2013 would be performing a longer and more comprehensive test. The reasons for this are several: they apparently were impressed by what they saw last time, and they want to replicate the results, for a longer time period; Rossi reports that they have been discussing him as a Nobel prize candidate, if his technology proves out; and Rossi generally trusts them, so he is willing to allow them to do a test, rather than other entities that he perceives might try to steal something. Rossi is very compelled by the second reason above, the Nobel. In fact, it has been his sole focus for the last half year or more. He justifies this relative to his commitments to further develop IH's technology by pointing out that it would be very good for us if he won the Nobel Prize. This is correct, although his work on designing a new reactor for the test has delayed our overall progress. Also, a visible, public test creates public relations risk for us that may not be offset by the benefits even of the Nobel Prize. I say all this to convey that IH is not the driver behind the Swedish professors' test, and in fact, we are staying quite removed. But due to Rossi's extremely independent personality, the test was going to happen regardless of our sentiments. We have chosen to be friendly and helpful to Rossi's efforts for relationship reasons.

Regarding the test, I began writing this update in the US, but this section comes from Switzerland where I visited the test site and met four of the professors. In my last update, I mentioned that Rossi wanted to do the test in Europe instead of our facility to better accommodate the scientists, who have to travel back and forth.

We also like having distance between IH and this test, for several reasons. We want the test to be independent and not influenced by us. Also, we were and still are anxious about results. We felt Rossi was hurrying to make a new design in the last weeks before the test, and it was not properly assessed or measured in advance. It only existed for a few days before everything was shipped to Switzerland. We have been worrying that it would fail to produce excess energy, or that it would otherwise fail, because we had no time to test the new design to failure, meaning we do not know what temperature the device can tolerate. After destroying and improving probably a dozen different reactor designs over 5 months, we knew their set points and safe operating parameters, short of failure. This new reactor went from pure idea to working device to a FedEx box bound for Europe in just a few weeks.

The current test is similar to the four-day test reported in the ArXiv article from May, 2013, although it entails a different reactor design using slightly different fuel than Rossi used in Europe or than we used in almost all our work in the US, until just before this test. This device is perhaps 25% as big and 10% as heavy as the prior reactor, yet Rossi believes it has similar output. The overall dimensions are roughly one foot long and 1.5" to 2" in diameter, and it weighs about 350 grams or 3/4 pound.

In Switzerland, the testing team told me that the energy being produced by the reactor after one day exceeds that of conventional fuels, relative to the mass of the reactor. This is a very preliminary conclusion based on rough calculations, all to be re-done once the data can be analyzed in detail.

The professors weighed the device before the test began, and they will compare the weight lost over the course of the month (or longer if it keeps running) with the energy produced. They will be updating their computations along the way, so after one day they were able to say it produced more energy than one could extract from 350 grams of anything conventional, like gasoline or high-efficiency batteries. In the future, besides refining the energy output computations, they will attempt to weigh the actual fuel instead of the whole reactor--they are just making preliminary observations and trying to be conservative.

They also were being conservative, it seems, on some other relevant variables. This reactor is slightly finned, so it loses heat from convection faster than a smooth cylinder with less surface area. Their convection loss formula is for a smooth cylinder. They also ignored the greater finned surface area for purposes of calculating radiated energy. They measure the surface area as if it were smooth. These two factors might change the results by 10%. By the time the report is prepared, they probably will use more precise formulas for these items.

My perennial caveat is that IR camera setting errors would dwarf this kind of conservatism. If they are wrong with the settings, the results are not meaningful. They did go through a camera calibration procedure at the beginning using an un fueled device, which is ideal. But, we do not yet know their procedure. We also can find questions or faults with the process they are using when making their preliminary, first-day calculations, like how are they averaging the temperature of the device when it varies greatly across the surface. This can be done appropriately, but we do not know how they will do it. One reason we do not know these answers now is because we are trying to be respectful and discreet. We do not want to intrude into their program aggressively, but rather to observe. Also, Rossi tends to be secretive and not open about these topics, and he often announces conclusions that do not make sense to us or that we disagree with. So, we are not comfortable with his responses to questions about the testing process. We think the professors are more knowledgeable and precise--their last report was so. If they do what they did last time, we believe their conclusions should be accurate. But all this bears watching, and in any event, we need not to rely on the results of any single test. I realize I might sound overly cautious or skeptical in reporting on results, but this is a function of the extreme difficulty of communicating with Rossi about measurement methods and processes.

At the test site, I met Professors Levi and Foschi from the University of Bologna, who are long-term followers of Rossi's technology. Levi began his career at CERN, the Swiss nuclear collider and research facility, while Foschi is a young PhD. We perceive they are quite convinced this reaction works as reported, and they clearly do not bring a skeptic's point of view. They performed the first tests in December, 2012, which were reported in the ArXiv article along with the 2013 test, showing generally similar results. The latter test had multiple other participants.

I also met Professors Pettersson and Hoistad from Uppsala University in Sweden. They were colleagues of Sven Kullander, a highly respected Swedish nuclear physicist, whom Rossi believes was the head of the committee that selects the winner of the physics Nobel prize. Kullander was the leader of the initiative to test Rossi's device. He died unexpectedly from a heart attack last month, while undergoing chemotherapy treatment. Rossi spoke to him about final plans for these Swiss tests only 6 hours before he died, and Kullander's son spoke at the funeral about his father's belief that Rossi's work was the most important development in science in many decades. Rossi believed his chance of winning the prize were extremely high under Kullander, who carried great weight in the physics world. He believes Hoistad has taken Kullander's place as leader of the Nobel committee. He is a great guy, but he lacks Kullander's broad reputation and awareness, so he probably does not have such a deciding vote. None of these roles are publicly known, so these beliefs by Rossi cannot be verified. Also, we might prefer that the professors all be skeptics and think it does not work, instead of being more optimistic about it. Rossi and Fulvio Fabiani say they were much more skeptical when they came for the last test, but after that, they changed their opinions.

The two Swedes in attendance were quite convinced that something important is happening. They said this, and they are investing time and reputation risk in this effort. They are mystified by the unwillingness of many professors to realize that some kind of LENR reactions occur (aside from ours), and that these reactions demonstrate there is a fundamental error in current physics theory. The Swedes hope that scientists will be able to acknowledge that one or more of the thousands of reports of anomalous excess energy are true, so therefore there is a flaw in their broader theories. Unraveling this flaw could be very important, beyond energy applications.

Also participating in this test will be Hanno Essen, Lars Tegner and Torbjorn Hartman, who participated in the last test. They have reached agreement with Rossi that they will visit unannounced at various times in the next 30 days, and Pettersson and Hoistad plan to return also. Rossi and Fulvio Fabiani, his primary assistant, plan to stay throughout the next month and maybe for as long as 90 days. At the end of 30-90 days, assuming the machine is still operating, the mass vs. energy output analysis will be very clear--subject as always to one's confidence in the IR settings. The data are being logged on drives throughout the test, and we will have access to the data.

Prior to beginning work in Switzerland, we saw results that were more compelling than we had seen previously during our testing and development period, from September, 2013 through January, 2014. Similar results were reported to have occurred in Italy, before we were involved, but we had not seen dramatic evidence of energy production. And, we definitely had seen reactors not working at all. But I mentioned in my last update that we saw a reactor explode from the inside, relatively dramatically, as others had exploded in Italy. These explosions are not very violent, just a pressure release and a burst of energy blowing out the side for a couple of feet and a few seconds. We have since dismantled that reactor and saw that prior to exploding, it expanded or swelled by about 1/4". It was made from stainless steel, 1/4" thick and only about 1.25" in diameter, so it is extremely strong. This could only happen through a combination of very high temperature plus high pressure. Stainless steel melts at 1500 degrees C, far beyond our operating external temperatures, and we do not think the electricity we were using could have been sufficient to do this, implying that the energy came from inside the core. Of note, we changed the fuel formula right before building this device, and that fuel is being used in the device undergoing testing in Switzerland. Almost all the fuel used previously in Raleigh was different, and apparently less effective, because those devices never melted and exploded. All of our earlier failures were electrical in nature.

We are building tiny glass reactors for rapid testing purposes. Our cost per test has dropped from thousands of dollars to about \$25. We have been seeing flashes of energy in the fuel when it is heated. Our goal is to be able to see and record the intensity of reactions occurring with different fuel materials. We think this also could help us with patents because it will be harder to deny enablement, or that something happens, which is the basis for the US patent office's anti-LENR policy. If we have a video showing something occurring, that may be persuasive. We like these tests because they are very inexpensive, and they will be important for our patent development if they are in fact easy to see. But broadly, we intend to hand serious, long-term assessment and testing over to large engineering entities that have much greater capability than ours.

#### Conclusion

We are all feeling anxious these days because we are in the middle of a very public test. The early results have been positive, which is a relief especially when compared to how we were feeling about the probability of success right before the test began. However, we are completely reserving judgment regarding the output, waiting to see the data and the Swedish professors' conclusions.

Our primary work now focuses on intellectual property development and on developing business partnerships. We want to acquire other technology rights and to find deployment partners that can implement. We want to see LENR technologies developed by larger, more sophisticated companies.

Please reach out with any questions or comments. I would like to meet with any of you to discuss IH at any time, and I would enjoy getting the benefit of your insights. Thank you for your support.

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