



A Solar Atmospheres Publication  
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Inside This Issue:	Page
ASMLiberty Bell Chapter Awards . . .	2
Solar Nadcap NDT Certification . . .	2
Solar at PNC Ballpark . . . . .	2
Solar Installs The Mentor . . . . .	3
MTI Y.E.S. Tour. . . . .	3
Bob Szabo Retires . . . . .	3
Upcoming Trade Shows . . . . .	4
Podcast . . . . .	4

# THE SPOTLIGHT

## Solar Atmospheres of California Adds Large Furnace Processing

Solar Atmospheres of CA (SCA) recently purchased additional large vacuum furnace capacity to accommodate sharply increased customer demands in the processing of titanium, super alloys and PH grade stainless steels in large lots.

The order for a new high capacity vacuum furnace was placed with SCA's sister company Solar Manufacturing based in Souderton, Penna. Solar's new vacuum furnace Model HFL-84144-2EQ will have a large rigid graphite hot zone measuring 84" diameter x 144" long; capable of operating within a temperature range of 600°F – 2700°F, a temperature uniformity of +/-10°F, and a weight capacity of 30,000 lbs. at 2200°F.

The vacuum pumping system design will include two Varian 35" diffusion pumps with a pumping speed of 50,000 l/s, allowing SCA to operate continuously in vacuum levels reaching 5 X 10<sup>-6</sup> torr or lower, thus minimizing the potential for surface contamination while processing sensitive materials like titanium and PH grade stainless steels.

The gas cooling system design will be made up of two external, gas quenching systems each consisting of a 300-HP blower motor, variable frequency drives for high velocity gas flow, and adjustable gas velocity speeds on critical cooling operations. Additional features include Solar Manufacturing's SolarVac-5000 furnace control package, nitrogen/argon/helium quenching, partial pressure processing capabilities, and guaranteed soak.

"We are very pleased to be in a position where SCA can add this much needed large furnace capacity to our vacuum furnace family. This new furnace is designed for high performance, process versatility, low maintenance, and energy efficiency. Our customers have spoken and we have heard them loud and clear. Solar CA completely understands the importance that we play in our customers' supply chain where lead-time and on-time delivery commitments play a very pivotal part in success. SCA is committed to providing a reliable quality service with strict adherence to on-time delivery and customer service second to none," states Derek Dennis, president, Solar Atmospheres of California.



Solar Atmospheres of California expands capacity to meet customer demand

## Trevor Jones Article Published on Oxidation Surface Pretreatment



Trevor Jones,  
Solar Atmospheres,  
principal engineer

*Industrial Heating* magazine published an article written by Solar Atmospheres' principal engineer, Trevor Jones in their May 2014 issue, titled "Oxidation Pretreatment of Steels for Nitriding." The article details "the process as an effective alternative to conventional grit blasting of materials as a means of surface preparation for uniform and consistent nitriding results."

Several people within Solar Atmospheres contributed to the article including: Don Jordan, vice president, corporate metallurgist; Virginia Osterman, Ph.D., technical director; Aaron Moyer, research technician; and Harry Antes, Ph.D., consultant.

To read the article go to: <http://www.industrialheating.com/articles/91660-oxidation-pretreatment-of-steels-for-nitriding>

## ASM Liberty Bell Chapter Awards Two Solar Employees



*(Left) Ron Smith, awards chairperson,  
(Right) Don Jordan, Solar Atmospheres*

Solar Atmospheres is committed to giving back to the industry and helping others within the industry grow and advance as an integral part of its corporate culture. As a result, many Solar employees have immersed themselves in that industry. On Thursday, May 15<sup>th</sup>, two Solar employees, Don Jordan and Aaron Moyer, were recognized by the Liberty Bell Chapter of ASM International during the chapter's awards presentation meeting.

Don Jordan, corporate metallurgist and Solar employee since 2001, was presented with the Meritorious Service Award for his dedication and support of the Philadelphia-based chapter as well as his knowledge of and commitment to ASM International. Don thanked the local chapter during the meeting, and the following day issued an e-mail to Solar's management in-part stating, "thank you for sincerely supporting these efforts, time-wise and monetarily. Great opportunities for growth have always been available at Solar."

Aaron Moyer, R&D technician, was awarded the Metallurgical Engineering Assistant's Award for outstanding work in support of the materials engineering profession. Starting in 2006 as a part-time employee, Aaron has been a dedicated laboratory and vacuum furnace technician. Aaron became a full-time employee in 2008 where his work in the lab and shop floor was instrumental to Solar gaining Nadcap certification the first time attempted, with no findings.

Trevor Jones, principal engineer, and Don Jordan noted that Aaron was responsible for acquiring and writing procedures for most of the test equipment currently being used in Souderton's metallurgical laboratory. According to Trevor, "Aaron took the initiative to learn and is more accustomed to operating the laboratory equipment than anyone in the company. Aaron also heartily thanked the local ASM chapter and sent a thank you to Solar management as well: "I'd also like to thank Solar management for affording me the opportunity for this and to be a part of the ASM Liberty Bell Chapter." Congratulations to both Don and Aaron!



*Solar Atmospheres  
R&D technician,  
Aaron Moyer*

## Solar Atmospheres of Western PA NDT Nadcap Certification



*Large-scale vacuum furnace at SAWPA,  
a Nadcap NDT testing, FLP certified  
facility*

Solar Atmospheres of Western PA (SAWPA) has had its Nadcap certification for non-destructive testing renewed. SAWPA has been continuously Nadcap NDT certified since 2009 and most specifically has been certified for fluorescent liquid penetrant inspection (FLP).

This renewed certification recently awarded to the Hermitage, Penna., plant covers a process where fluorescent light is used to check for cracks immediately following heat treating. A liquid penetrant is uniformly applied to the part, allowed to stay on the part for a pre-determined length of time, and then washed from the part. The part is air dried by passing through a controlled temperature dryer and slowly advanced through a darkroom where fluorescent lighting and magnification are used to identify crack locations. Cracked parts are rejected, segregated and the customer notified.

SAWPA's quality manager, Susan Generalovich, indicated that she was "pleased with the outcome of the audit. The Solar team has done a great job knowing and following the stringent inspection procedures we promised to deliver to our customers. We're pleased that Nadcap has once again recognized our corporate commitment to quality."

## Hermitage Plant Enjoys Pirates Baseball Game

The Hermitage team took a road trip to PNC Park to enjoy a Pittsburgh Pirates baseball game, compliments of Solar management. Dawn Baker from the Hermitage office gives a first hand account of the outing.

"The game was on Sunday, April 6<sup>th</sup>, a beautiful, sunny day with the temperature hovering around 60°F. The Pirates played the St. Louis Cardinals and a group of about 60 Solar employees and guests sat under the overhang behind home plate – a perfect combination of sun and shade. We arrived early enough to get lunch, compliments of Solar in the form of a food voucher. Everyone had a great time! We got to hang out and relax at the ball park – no shop talk – just laughs and fun! The Pirates ended up winning the game 2 to 1." Many Hermitage employees expressed their thanks to Bob Hill for arranging this company outing.



*Solar's view at PNC Park,  
Pittsburgh, Penna.*

## Mentor Installed at Solar Atmospheres of Western PA

Solar Atmospheres of Western PA installed a new high-temperature, high-purity, production-scale, 2-bar vacuum furnace in an environmentally controlled room for heat treating and brazing small to mid-size loads. The Mentor furnace is designed and built by sister company, Solar Manufacturing, for processing medical, tool & die, aerospace, nuclear, and other industrial heat treated or brazed parts.

The humidity and temperature in the environmentally controlled room is more stable than in typical heat treat facility conditions, Solar's customers are assured that discoloration of some metal parts due to humidity will be eliminated, or severely reduced.

Michael Johnson, sales manager, said, "This new furnace gives us the ability to process loads we were not able to competitively quote using our larger furnaces. The Mentor is a great furnace and we're excited about the heat treating and brazing opportunities that this little workhorse is opening up to us."

The furnaces' effective workload area is 12"W x 12"H x 18"D, can hold a load of up to 250 lbs., and is rated at a normal operating temperature of 2500°F/1370°C. The hot zone is constructed of high-efficiency graphite felt and boards, and allows for rapid heat-up and cool-down cycles. In order to achieve desired metallurgical properties for some metals, the furnace is equipped with a 2-bar quenching capability.



*Solar WPA, quality manager,  
Susan Generalovich*

## Heat Treat Management Training Class Visits Solar



*2014 MTI Y.E.S. tour at Hermitage*

The Metal Treating Institute's (MTI) Young Executive Series (Y.E.S.) brought approximately 40 management trainees and alumni to the titanium-rich Hermitage facility on Wednesday, May 14<sup>th</sup> for a tour. The Y.E.S. training program is conducted yearly by MTI, and attracts top management talent from many of the leading commercial heat treating companies in North America. This year's group was welcomed by Solar Atmospheres of Western PA's president, and current MTI president, Bob Hill.

The group learned about Hermitage's newly installed Mentor furnace that is housed in an atmosphere controlled room, dedicated to running medical and other precision-sensitive parts in small- to mid-sized loads. Also included in the tour was Hermitage's largest furnace, a 36' long x 84" diameter, double-door, 150,000 lb. capacity vacuum furnace used for running

large aerospace and titanium industry parts.

Tour participants saw Hermitage's 20-bar, high-pressure vacuum quench furnace and over 15 other furnaces or cryogenic treatment units located in the 65,000 square foot facility. Programmed and controlled by the latest in furnace control technology, these furnaces "blew the attendees away," according to Mr. Hill, who said it was a real pleasure having the group attend.

## Bob Szabo Retires from Solar Atmospheres of Western PA



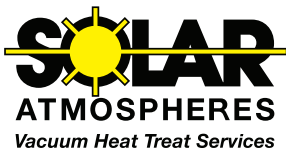
*From Left: Roger Jones, corp. president  
Solar Atmospheres, Kevin Bekelja, WPA  
GM, Bob Szabo, Bob Goeltz, Hermitage  
fire chief, Bob Hill, WPA president*

Solar Atmospheres of Western PA 3<sup>rd</sup> shift worker, Bob Szabo retired this month after 10 years of dedicated service. Bob could be counted on to do his job consistently shift after shift, and his presence will surely be missed because he was always a pleasure to work with.

During the past few weeks Bob had several surprises leading up to his retirement day. A friend and colleague from the Hermitage Fire Department (HFD) surprised Bob's entire shift when at 3 AM one morning he pulled his hot dog stand, "Franks for the Memories" into the plant parking lot to serve them all lunch. On Thursday, May 22<sup>nd</sup>, his last day at Solar, Bob was surprised with a retirement breakfast.

The employees from the plant were there including special guest, Hermitage fire chief, Bob Goeltz. At the breakfast the fire chief presented Bob with a Lifetime Membership Award to the HFD. Solar Atmospheres president, Roger Jones presented Bob with a beautiful clock made with both our Solar and HFD logos thanking Bob for his dedication to Solar and our community.

He also presented Bob with a Perkasio FD T-shirt. Last but not least, Bob received a toy train as a special gift, because Bob and his wife Cathy really enjoy traveling by train and they have plans to travel more in retirement. Their final surprise was hidden inside the toy train. It was a gift certificate for Bob and Cathy to go cross country round trip via Amtrak train. Congratulations to Bob on his retirement!



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Help us save our resources.

If you no longer wish to receive *The Spotlight*, would like a co-worker to receive it, or need to update your address please e-mail us at: [lori@solaratm.com](mailto:lori@solaratm.com)

### Podcast: Graphite vs. Moly – Listen NOW!

Solar Atmospheres affiliate company, Solar Manufacturing, the company that manufactures all the vacuum furnaces used by Solar Atmospheres, released its most recent podcast in cooperation with *Industrial Heating* magazine. The most recent podcast is part 2 of 2 dealing with graphite and moly use inside a vacuum furnace. This is an excellent and brief podcast that will help the novice and expert expand their knowledge of both graphite and moly.

The podcast can be found in several locations:

- On Solar Manufacturing's website:  
<http://solarmfg.com/multimedia/podcasts/>
- On Industrial Heating's website:  
<http://www.industrialheating.com/media/podcasts/2731>
- On iTunes by search for "Industrial Heating Vacuum Heat Treat Minute"



### Upcoming Trade Shows

Visit us at these upcoming industry events:



Sept. 8-13  
McCormick Place  
Chicago, IL



Sept. 8-11  
Dayton Convention Center  
Dayton, OH



Sept. 17-18  
John S. Knight Center  
Akron, OH



Sept. 21-24  
Hilton Chicago  
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