The International Thermal Spray Association (ITSA) has announced plans to host a Thermal Spray Pavilion at the 2007 Fabtech International and AWS Welding Show November 11-14, 2007 at the McCormick Place in Chicago, Illinois. Sponsored by ITSA in collaboration with the American Welding Society (AWS), Society of Manufacturing Engineers (SME), and Fabricators and Manufacturers Association (FMA), this industrial Thermal Spray Pavilion will be available to the more than 17,000 exposition attendees.

The Pavilion will feature several informative events and presentations as well as demonstrations and educational material on the benefits of thermal spray technology. As a company-member trade association with close ties to almost all major advanced in thermal spray technology as well as its market development, ITSA plays an integral role in informing the industrial manufacturing sector on the importance and unique benefits of thermal spray technology,” said ITSA chairman Ed Simonds. “We are pleased to feature our Thermal Spray Pavilion at this exciting show while having the opportunity to collaborate with these important industry partners to enhance awareness of thermal spraying.”

To reserve booth space in the Thermal Spray Pavilion for 2007 or get more exposition information, please contact Joe Krall, Director of Exposition Sales, via email jkrall@aws.org or via phone 800.443.9353, ext. 297.

The FABTECH International and AWS Welding Show is cosponsored by AWS, FMA, and SME. Based for decades in the industrial heartland of Chicago and Cleveland, the 2006 event took place for the first time ever in the Southeast - a region seeing robust growth in metal fabricating, manufacturing and infrastructure. The Show recently concluded at Atlanta's Georgia World Congress Center after three full days of impressive crowds and bustling exhibits. The show represented the largest showcase of metal forming, fabricating, tube and pipe, and welding equipment and technology in North America this year. More than 21,000 attendees from around the world visited the show to evaluate, purchase and explore innovative technologies. A total number of 873 companies exhibited at the 2006 event, taking over 300,000 net square feet of exhibit space. This represents a more than six percent increase in the total number of exhibiting companies over
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- Education Courses - Workshops offer the opportunity for in-depth presentation, discussion and interaction on topics ranging from the highly technical to the geo-political. Registration is required
- Awards - Awards ceremony recognizes leadership in thermal spray technology

The event, co-sponsored by the ASM Thermal Spray Society (TSS), the German Welding Society (DVS) and the International Institute of Welding (IIW), will be the first to be held in the vibrant country of China. The bustling automotive, aerospace and heavy equipment manufacturing sectors of China serve as an ideal forum for discussing the latest advances in thermal spray technologies. Plus, Beijing is an exquisite host locale for this international event.

ITSC 2007 will offer thermal spray practitioners a unique opportunity to experience one of the world's most rapidly expanding markets. Delegates from more than 30 countries are expected to participate in the event which includes three days of technical conference sessions. This year's event will feature both theoretical and applied industrial presentations that address the latest in research, development, application and equipment.

In addition to the anticipated 250+ technical papers, ITSC offers delegates opportunities for networking, equipment demonstrations, pre-event education courses, local industry tours and a world-class exposition. This exposition will feature exhibitors showcasing the latest in thermal spray equipment, powders, consumables, metallurgical equipment, instrumentation and commercial job shop services.

ITSC 2007 is an opportunity for the global thermal spray community to meet, exchange information and conduct business. It is a truly unique opportunity to be part of an outstanding program in the fascinating city of Beijing, the cultural center of the People's Republic of China.

We look forward to seeing you in Beijing in 2007!

Peter Hanneforth, Technical Chair, ITSC 2007
E. Lugscheider, Technical Chair, ITSC 2007
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For more information, visit www.asminternational.org/itsc07

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Kathy M. Dusa Managing Editor
Paul Kammer Technical Editor
Ed Simonds Editor

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the 2005 FABTECH International and AWS Welding Show in Chicago, Illinois.

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To learn more about the FABTECH International and AWS Welding Show, please visit websites www.aws.org/expo and www.fmafabtech.com.

About ITSA: The International Thermal Spray Association is a professional trade organization dedicated to expanding the use of thermal spray technologies for the benefit of industry and society. For more ITSA information, visit www.thermalspray.org and page 18 of this publication.

About AWS: The American Welding Society (AWS) was founded in 1919 as a multifaceted, nonprofit organization with a mission to advance the science, technology and application of welding and allied joining and cutting processes, including brazing, soldering, and thermal spraying.

For more AWS information, visit www.aws.org and page 6 of this publication.

About FMA: The Fabricators and Manufacturers Association International, headquartered in Rockford, IL USA, is the world’s largest nonprofit education association dedicated exclusively to metal forming and fabricating professionals.

For more FMA information, visit www.fmanet.org.

About SME: The Society of Manufacturing Engineers is the world’s leading professional society supporting manufacturing education. Through its member programs, publications, expositions, and professional development resources, SME promotes an increased awareness of manufacturing engineering and helps keep manufacturing professionals up to date on leading trends and technologies.

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The International Thermal Spray Association is pleased to announce that it will continue to provide SPRAYTIME free-of-charge to the thermal spray community. If you have been receiving SPRAYTIME, you will continue receiving SPRAYTIME. If you or your colleagues wish to sign up for a free subscription, visit www.spraytime.org.

SPRAYTIME will continue to grow by reaching across other industries (AWS, SAE, NACE, ASME, etc.) for pertinent information-sharing and additional readership.

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AWS Education Programs: AWS education programs include international, national and local conferences, seminars, individual corporate programs, and home study courses. Subjects range from the basics to the leading edge of technology. AWS offers to all qualified U.S. welding training programs the award-winning program SENSE (Schools Excelling through National Skills Education), which implements national skill standards and associated curriculum guides to train and qualify welders. The program advances students through three different levels, from entry to expert welder, to prepare students for today’s workforce and tomorrow’s challenges.

AWS Certification Programs: AWS offers a number of widely recognized certification programs to assist the industry in identifying qualified welding personnel and to provide opportunities for welding professionals. The premier AWS certification is the Certified Welding Inspector (CWI) program, which is distinguished internationally and trusted to ensure the highest level of quality workmanship. Established in 1976, this AWS service has certified over 52,000 welding inspectors and currently, more than 22,400 are certified. This AWS certification has been a major contributor to improved weld quality and reduced inspection costs. AWS offers additional certification programs for welding supervisors, engineers, radiographic interpreters, educators, robotic arc welding operators and technicians, fabricators and more.

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Unique Thermal Spray Cabinets
(Fulfilling the Latest Occupational Health and Environmental Regulations) by M. van Wonderen, KLM engineering and maintenance at Schiphol-Airport, The Netherlands

KLM is the oldest airline in the world (1919) and its founder, Mr. Plesman, had foreseen the fact that maintenance, repair and overhaul (MRO) would be an important part of the economic and technical survival of an airline. For this reason he founded more than 80 years ago the first MRO shop for aircraft and aircraft engines in the world. Since then, lots of existing and innovative new repair processes were introduced and used at the KLM engineering and maintenance division with its nowadays base at the Schiphol-Airport in the Netherlands. KLM started incorporating thermal spraying in their engineering and maintenance division in 1969 with flame spray equipment (acetylene-oxygen). In the mid-70s the first plasma spray equipment was bought. In 1987 the first fully automated and robotized plasma spray system was introduced. In 1993 KLM received as first airline in the world a full process approval from General Electric to use twin wire electric arc spraying as the new thermal spray process for repairing aircraft engines.

Environment and occupational laws: Whenever a new thermal spray process is introduced at the MRO shop at KLM, it has to fulfill the newest occupational health and environmental regulations.

The last couple of decades the EU has introduced many new directives on exposure levels for the environment and people involved with dangerous materials. Especially materials like asbestos, silicon oxides, cadmium, lead, chromium, nickel, etc. are on the so-called 'hot-list'.

But KLM also has to comply with all Dutch regulations. In the Dutch legislation one has to fulfill the so-called NeR, which are the Dutch Emission Regulations. For the above mentioned dangerous materials the environment exposure must be < 0.1 µg/m³.

According the Dutch occupational health laws the following regulations concern exposure of people with dangerous materials:

- #1: Take the operator out of the process;
- #2: If #1 is not possible, then try to minimize the exposure as much as possible; this is the so-called "Minimalization Obligation";
- #3: One must fulfill the "Minimalization Obligation" by introducing the latest "State-of-the-Art" in industry;
- #4: Within the state-of-art techniques one must provide four levels of exposure reduction:
  a. contain the process
  b. provide source extraction
  c. provide "point" extraction
  d. provide room extraction (e.g., by plenums)
  e. provide means of personal protection (e.g., masks)

When KLM started using thermal spraying (1960s), the occupational health regulations were quite different from today. In the figures 1, 2 and 3 one can see examples of the 'traditional way' of spraying at KLM.

State-of-the-art: In 2002 KLM was planning to build a complete new MRO engine shop at Schiphol-Airport in the Netherlands. Therefore the Process, Equipment and Materials Development Department started to make a 'never seen before' specification for a thermal spray cabinet with unique features in industry.

Features: According to this specification the MRO engine shop of KLM purchased the most advanced thermal spray cabinets ever.

The unique features include a combined down flow floor extraction and plenum extraction with a possibility of 10 to 90% recirculation of filtrated air. All of the dangerous material dusts in the extracted and thus contaminated air is directed towards the cartridge filtration system. After the first cartridge filtration step, the air is pushed through a second step by means of a HEPA #14 filtration unit. After this 2nd step the air is monitored by a computer-controlled continuous particle measuring system. Then the air is pushed
through a 3rd step HEPA #14 filtration unit. Subsequently the ultra-filtrated air is divided by electrical valves to recirculation piping or exhaust piping outside the building. The recirculation percentage can be manually changed or in certain ways computer controlled and depends on gas and temperature sensors in the cabinet. On top of that the extracted air-quantity is PLC-monitored and adjustable by frequency controlled ventilators.

Measurements of the filtrated air showed that this system has a dust emission lower than 1.5 nanogram per cubic meter of air(ng/m³), which is unique in the world for process repair cabinets including thermal spray processes. This means that the recirculated or exhausted air has a 1000 times lower value than the most stringent proposed Chromate (VI) exposure level of the Dutch Health Council (see Figure 4).

![Figure 4. Proposed levels for Chromate levels](image)

<table>
<thead>
<tr>
<th>Limits</th>
<th>PEL value</th>
<th>Time weighted average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current PEL value in The Netherlands</td>
<td>10 µg/m³</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Proposed PEL value of the Dutch Health Council [2]</td>
<td>2 µg/m³</td>
<td>8 hour</td>
</tr>
<tr>
<td>KLM guideline</td>
<td>0.5 µg/m³</td>
<td>8 hour</td>
</tr>
<tr>
<td>Results of the new state of the art filtration systems</td>
<td>&lt; 1.5 ng/m³</td>
<td>8 hour</td>
</tr>
</tbody>
</table>

In the following figures, examples of all cabinets and air-filtration units are shown.

![Figure 5. ‘Manual’ thermal spray cabinet with floor and plenum extraction plus recirculation of filtrated air.](image)

![Figure 6. Robotic thermal spray cabinet with floor and plenum extraction plus recirculation of filtrated air.](image)

![Figure 7. 56-cartridge filtration system.](image)

![Figure 8. Collection bins.](image)
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**Results:** Measurements in the recirculation air always showed a dust concentration of less than 2 ng/m³. See Figure 15 for one of the measured results during electric arc spraying of nickel-aluminum wire at 150 g/min into the suction plenum.

![Figure 15: Result of concentration of dust measurements (Y-axis: dust values in ng/m³; X-axis: time line in seconds)](image)

The results show that the filtration system is indeed, as specified, capable of producing filtered recirculation air more than 1000 times better than the proposed PEL value of the Dutch Health Council [2].

**Summary:** The KLM has introduced new unique state-of-the-art thermal spray cabinets with, in addition to other things, unique features on dust suction and filtration. By introducing this unique cabinet KLM engine services is capable of fulfilling all the environmental and occupational health legislation of the EU and the Netherlands.

**Conclusion:** KLM has invested in the next generation thermal spray cabinets in order to continuously establish a safe and healthy labor environment. With these cabinets KLM will stay in the front line of the Aircraft MRO market and can promote their Center Of Excellence (COE) in thermal spraying. A paper on this subject has been presented at the “Thermal Spray Information Workshop” organized by the Technical Committee Thermal Spraying of the Dutch Welding Institute (Nederlands Instituut voor Lastechniek) in 2004 [1].

**Acknowledgement:**
The author acknowledge Mr. Nico van Velsen and Mr. Mark Bannink, for their helpful input on cabinets and filtration in general and, specifically, on particle counters and HEPA filtration.
3M Announces Expansion of Superabrasives Manufacturing Operations
Growing Demand Spurs Move to Custom-Designed Facilities

3M recently announced plans to expand manufacturing operations for their growing superabrasives business. Operations currently housed in a small facility in Whippany, New Jersey, will move to a larger 3M facility in Flemington, New Jersey. All employees from the Whippany operations will be offered employment in the upgraded Flemington facility, located approximately 35 miles from the current location.

"We're excited about the opportunities this move brings us to create a new, better work environment for our employees, while at the same time adding space for growth," said Chris Holmes, general manager, 3M Abrasives Division. "We anticipate that our superabrasives manufacturing lines in Flemington will be a center of excellence for the industry." Holmes continued, "This expansion signals 3M's commitment to the superabrasives business and will help us achieve our growth plans through investments in new technologies and improved manufacturing processes."

The transition of operations from Whippany to Flemington is scheduled to begin in the spring of 2007 and completed by early in the fourth quarter. 3M’s existing medical products manufacturing operations in Flemington will continue to be located there.

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1. M. van Wonderen, presentation: State-of-the-Art Thermal Spray Cabinets, TC-1c "Thermal Spray Information Day", Nieuwegein, the Netherlands, 6-apr-2004

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Mr. Thomas F. Lewis III, tlewis@sermatech.com

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Mr. Gary Logan, gary.logan@spraymetal.com

**Superior Shot Peening, Inc.**  
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Mr. Albert Johnson, ajSSIP@aOL.com

**Surface Modification Systems**  
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PHONE: 562.946.7472, FAX: 562.946.8182  
Dr. Rajan Bamola, rajanb@surfacemodificationsystems.com

**Thermal Spray Technologies, Inc.**  
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Mr. Bill Lenling, blenling@tstcoatings.com

**United Surface Technologies**  
Altona, Melbourne Australia  
PHONE: 61.393.98.5925, FAX: 61.393.98.2738  
Mr. Keith Moore, kmoores@ust.com.au

**Wyatt Field Service Company**  
Houston, TX USA  www.wyattfieldservice.com  
PHONE: 713.570.2000, FAX: 713.937.1617  
Mr. Jim Jordan, jjordan@wyattfieldservice.com

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St. Paul, MN USA  www.mmm.com  
PHONE: 800.362.3550 or 651.737.9999  
Mr. Don Place, dfplace@mmm.com

**Air Products and Chemicals**  
Allentown, PA USA  www.airproducts.com/metals  
PHONE: 800.654.4567, FAX: 800.272.4449  
Mr. Stewart Stringer, stringrs@airproducts.com

**Alloy Sales**  
Delta, BC Canada  www.alloysales.com  
PHONE: 604.940.9930, FAX: 604.940.9952  
Mr. Lloyd Johannesen, lloyd@alloysales.com
### CALENDAR OF EVENTS

#### JANUARY 2007

**14-18 Sharm El Shiekh, Egypt** *International Round Table on Thermal Plasma Fundamentals and Applications* - contact Prof. Maher Boulos, tel: 819.821.7168, email: maher.boulos@usherbrooke.ca

**30-31 Biloxi, MS USA** *ShipTech 2007* sponsored by Office of Naval Research - contact Tricia Wright, tel: 814.269.2597, email: wright@ctc.com, web: www.nmc.ctc.com

#### FEBRUARY 2007

**11-14 Dallas, TX USA** *Paint & Coatings Expo (PACE 2007)* visit www.pace2007.com

**FEB 25 - MAR 1 Orlando, FL USA** *TMS2007 136th Annual Meeting and Exhibition* - contact TMS tel: 724.776.9000 x243, fax: 724.776.3770, email: mtgserv@tms.org, web: www.tms.org

#### MARCH 2007

**11-15 Nashville, TN USA** *NACE Intl. Corrosion 2007* - contact Cindy Euton, tel: 281.228.6274, fax: 281.228.63.74, email: cindy.euton@nace.org, web: www.nace.org/c2007

**25-28 Rosemont, IL USA** *MetalForm 2007*, contact Precision Metalforming Assoc., tel: 216.901.8800, web: www.metalform.com or www.pma.org

**26-28 Cambridge United Kingdom** *Fatigue 2007: Fatigue & Durability Assessment of Materials, Components & Structures* - contact Engrg Integrity Soc UK tel: +44(0)114.262.1155, email: fatigue@e-i-s.org.uk, web: www.e-i-s.org.uk

#### APRIL 2007

**2-4 Shanghai, China** *2nd Pan-Asian Conf on Advancing PM Tech (PMAsia2007)* email: pmasia2007@inovar-events.com, web: www.pmasia2007.com

**9-13 San Francisco, CA USA** *MRS Spring Meeting*, tel: 724.779.3003, email: info@mrs.org, web: www.mrs.org/spring2007

**16-20 Detroit, MI USA** *SAE World Congress* - Contact tel: 877.606.7323 or 724.776.4970, fax: 724.776.0790, email: customerservice@sae.org, web: www.sae.org

#### MAY 2007

**7-10 Indianapolis, IN USA** *AISTech 2007*, Iron & Steel Technology Association for Iron & Steel Technology tel: 724.776.6040, fax: 724.776.1880, web: www.aistech.org

**13-16 Denver, CO USA** *PowderMet 2007* - contact Metal Powder Industries Federation tel: 609.452.7700, email: info@mpif.org, web: www.mpif.org

**14-17 Beijing, China** *Intl Thermal Spray Conference & Expo ITSC 2007* - contact ASM Int'l, tel: 800.336.5152 (ext. 6) or 440/338-5151, web: www.asminternational.org, email: customerservice@asminternational.org

**14-17 Montreal, Canada** *ASME Turbo Expo 2007* presented by the Int'l Gas Turbine Institute - visit www.turboexpo.org

**28-31 Moscow, Russia** *Schweissen & Schneiden Russia* - cosponsored by the DVS German Society for Welding and Allied Processes and the Russian Assoc of Non-Destructive Testing and Welding (NAKS) - contact Messe Essen GmbH tel: +49(0)201.7244.227, email: regiani@messe-essen.de, web: www.messe-essen.de

#### JUNE 2007

**4-7 San Diego, CA USA** *MegaRust 2007 Marine Coatings & Corrosion Conference* - contact Karen Chitwood, kchitwood@nstcenter.com, web: www.nstcenter.com

**5-7 Baltimore, MD USA** *SAMPE 2007* - contact Doris Weaver, tel: 626.331.0616, email: doris@sampe.org, web: www.sampe.org

**12-16 Düsseldorf, Germany** *9th Intl Trade Fair & Symposium for Thermo Process Technology THERMPROCESS and 7th Intl Metallurgical Technology Trade Fair METEC* - tel: 312.781.5180, email: info@mdna.com, web: www.mdna.com or www.thermprocess.de

**19-21 Aachen Germany** *8th Intl Conference on Brazing, High Temperature Brazing and Diffusion Bonding LÖT2007* - contact DVS German Welding Society, tel: +49(0)211.1591.302, email: tagungen@dvs-hg.de, www.dvs-ev.de/loet2007
Is Your Event Listed? Send your event notice to spraytime@thermalspray.org

19-22 Shanghai China Beijing Essen Welding - contact Messe Essen GmbH tel: +49(0)201.7244.227, email: regiani@messe-essen.de, web: www.messe-essen.de


AUGUST 2007

6-9 Fort Lauderdale, FL USA 40th Intl Metallographic Society IMS Convention - contact ASM International, tel: 800.336.5152 or 440.338.5151 x5900, fax: 440.338.4634; em: cust-srv@asminternational.org, web: www.asminternational.org

6-9 Fort Lauderdale, FL USA Microscopy & Microanalysis 2007 - contact Phillip Ridley tel: 312.644.0828, email pridley@bostrom.com, web: http://microscopy.org/MMMeetings/MM07

SEPTEMBER 2007

10-17 Nürnberg, Germany Euromat 2007 European congress & Exhibition on Advanced Materials & Processes - contact tel: +49.69.75306.747, email: euromat@fems.org, web: www.euromat2007.fems.org

17-19 Detroit, MI USA Materials Science & Tech. Conf & Expo (MS&T07) - organized by ASM, AICerS, AIST, AWS, and TMS, and held in conjunction with ASM Heat Treating Society Conf./Expo, contact ASM Int’l, tel: 440.338.5151 x5900, em: cust-srv@asminternational.org, web: www.asminternational.org

17-20 Detroit, MI USA 24th ASM Heat Treating Society Conf & Expo - held in conjunction with MS&T07 - contact ASM Int’l, tel: 800.336.5152 or 440/338-5151 ext. 6, fax: 440.338.4634, web: www.asminternational.org, email: customerservice@asminternational.org

NOVEMBER 2007

4-8 San Jose, CA USA 33rd Int’l Symposium for Testing & Failure Analysis (ISTFA2007) contact ASM Int’l, tel: 440/338-5151 ext. 6, web: www.asminternational.org, em: customerservice@asminternational.org


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NEW FEATURE SPRAYTIME® Ask the Experts

SPRAYTIME now has a panel of “experts” (see below) to answer your thermal spray questions.

Daryl Crawmer, Thermal Spray Technology, Inc. - Safety - Plasma Spraying - Applications
Mitch Dorfman, Sulzer Metco (US) Inc. Powders
Frank Hermanek, Retired - Turbine Applications and Materials
Paul Kammer, Kammer Associates Combustion Spraying and Atomized Powders
Sanjay Sampath, State University of New York - Coatings’ Properties and Characterization
Mark Smith, Sandia National Laboratories Cold Spray
Richard Thorpe, Praxair TAFA - Equipment and HVOF Spraying
Bob Unger, Polymet Corporation Electric Arc Spraying

These individuals are ready to answer your questions in an educational manner to share with the entire SPRAYTIME readership. Questions are not limited to the subject areas listed above. If your question is outside the expertise of these panel members, we will find the right person to answer your question. Guidelines are as follows:

• Questions should be 25 words or less and submitted only by e-mail to SPRAYTIME@thermalspray.org
• Upon review and acceptance, questions will be distributed to appropriate panel member(s)
• Due to the publication time schedule, should not be a question for which the individual needs an immediate answer.
• The question must be accompanied by the name and affiliation of the submitter; however, the name will not be published.
• SPRAYTIME reserves the right to edit any question (and the answers) and due to space and time limitations only questions selected for publication will be answered.

For more information, contact Kathy Dusa at SPRAYTIME via email spraytime@thermalspray.org

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International Thermal Spray Association Welcomes Air Products and Chemicals

Air Products and Chemicals has joined the International Thermal Spray Association.

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ASM is housed in a brand new building in the heart of the turbomachinery business - Houston, Texas, conveniently located close to major highways.

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For more information, contact a representative via tel: 713.975.1330, fax: 713.975.0069, email: sales@asm-llc.com, website: www.asm-llc.com.

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White Engineering Surfaces Corporation, founded in 1963, is looking for an experienced Sales Manager and Sales People to manage our sales team, service existing and potential accounts, and the development of new markets. Successful candidate must be experienced with Thermal Sprayed Coatings, using Plasma, HVOF and Wire Arc, etc deposition technologies. This position offers a competitive salary and commission structure. Benefits include paid vacation, health insurance, dental insurance, 401K with company contribution, etc.

E-mail jdemetriou@whiteengineering.com

Scholarship Opportunities

The International Thermal Spray Association will award up to two (2) Graduate scholarships worth $1,500.00 each to be awarded each calendar year and up to three (3) Undergraduate scholarships worth $500.00 each to be awarded each calendar year.

Since 1991, the ITSA Scholarship Program has contributed to the growth of the Thermal Spray Community, especially the development of new technologists and engineers. The International Thermal Spray Association is very proud of this education partnership and encourages all eligible students to apply. Scholarship applications are now accepted annually April 15 through June 30 ONLY for both the Graduate and Undergraduate scholarships.

For more information, please visit www.thermalspray.org scholarship area for details and a printable application form.

Spraytime advertising rates at www.spraytime.org
The International Thermal Spray Association is closely interwoven with the history of thermal spray development in this hemisphere. Founded in 1948, and once known as Metallizing Service Contractors, the association has been closely tied to most major advances in thermal spray technology, equipment and materials, industry events, education, standards and market development.

A company-member trade association, ITSA invites all interested companies to talk with our officers, committee chairs, and company representatives to better understand member benefits. A complete list of ITSA member companies and their representatives are at www.thermalspray.org.

**ITSA Mission Statement**

The International Thermal Spray Association is a professional trade organization dedicated to expanding the use of thermal spray technologies for the benefit of industry and society.

**Officers**

Chairman: Ed Simonds, Cincinnati Thermal Spray, Inc.
Vice-Chairman: Marc Froning, Engelhard Surface Technologies
Treasurer: Bill Mosier, Polymet Corporation

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Past Chairman: John Read, National Coating Technologies
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4-Year Term: John Hayden, Hayden Corporation
2-Year Term: Joe Stricker, St. Louis Metallizing Company

**ITSA Scholarship Opportunities**

The International Thermal Spray Association offers annual Graduate and Undergraduate Scholarships. Since 1992, the ITSA scholarship program has contributed to the growth of the thermal spray community, especially in the development of new technologists and engineers. ITSA is very proud of this education partnership and encourages all eligible participants to apply. Please visit www.thermalspray.org for criteria information and a printable application form.

ITSA Materials Camp Student Sponsor

Commencing in 2001, the International Thermal Spray Association provides an annual $1,500 student scholarship to the ASM International Foundation Materials Camp.

**ITSA Thermal Spray Historical Collection**

In April 2000, the International Thermal Spray Association announced the establishment of a Thermal Spray Historical Collection which is now on display at their headquarters office in Fairport Harbor, Ohio USA.

Growing in size and value, there are now over 30 different spray guns and miscellaneous equipment, a variety of spray gun manuals, hundreds of photographs, and several thermal spray publications and reference books.

Future plans include a virtual tour of the collection on the ITSA website for the entire global community to visit.

This is a worldwide industry collection and we welcome donations from the entire thermal spray community.

**ITSA SPRAYTIME Newsletter**

Since 1992, the International Thermal Spray Association has been publishing the SPRAYTIME newsletter for the thermal spray industry. The mission is to be the flagship thermal spray industry newsletter providing company, event, people, product, research, and membership news of interest to industrial leaders, engineers, researchers, scholars, policymakers, and the public thermal spray community.

For a free SPRAYTIME subscription, visit www.spraytime.org and complete the short questionnaire.

**ITSA Headquarters**

208 Third Street, Fairport Harbor, Ohio 44077 USA
tel: 440.357.5400 fax: 440.357.5430
itsa@thermalspray.org www.thermalspray.org

For a free copy of the International Thermal Spray Association “What Is Thermal Spray?” publication, send an email request to itsa@thermalspray.org

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SPRAYTIME solicits letters to the Editor for publication in our new column. Letters are solicited that comment on a recent SPRAYTIME article, on a topic of general interest to the thermal spray industry, on a recent event in the industry, or on a recently published letter to the editor.

Send your letter to SPRAYTIME by email to spraytime@thermalspray.org or via fax to 440.357.5430; electronic submissions as a Word document are preferred. Letters must be signed and must give the author’s name, affiliation, and phone or e-mail address. The author’s name will be published. Letters of fewer than 300 words will be given preference. Longer letters may be abridged by the editor. Please give the headline and issue number if referring to a specific article previously published.

The editor reserves the right to select letters for publication, and due to space and time limitations not all letters will be published nor acknowledged. If you have any questions please contact SPRAYTIME via email spraytime@thermalspray.org, or via phone 440.357.5400.

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Cincinnati Thermal Spray Announcements

Bill Menth to Sales Manager

Cincinnati Thermal Spray, Inc. (CTS) announces the promotion of Bill Menth to the position of Sales Manager, CTS-Midwest, Cincinnati. In his new position, Bill will report directly to Dan Classen. Bill will have responsibility for both the Sales and Customer Service organizations at CTS-Midwest.

Ed Simonds to Manager of Business Development and Commercial Sales

CTS announces Ed Simonds will assume the newly created position of Manager of Business Development and Commercial Sales. In this role, Ed will be responsible for finding new business opportunities, providing technical support to the CTS sales group, marketing, and sales to commercial customers.

Daniel C. Classen, CTS President stated “Please join me in wishing both Bill and Ed the best of success in their new positions.”

For more information, contact Bill Menth at email and contact Ed Simonds at email esimonds@cts-inc.net, and visit website www.cts-inc.net

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INDUSTRY NEWS
Effect of Grit-Blasting on Substrate Roughness and Coating Adhesion
Dominic J. Varacalle, Jr., Donna Post Guillen, Douglas M. Deason, William Rhodaberger, and Elliott Sampson

Statistically designed experiments were performed to compare the surface roughness produced by grit blasting A36/1020 steel using different abrasives. Grit blast media, blast pressure, and working distance were varied using a Box-type statistical design of experiment (SDE) approach. The surface textures produced by four metal grits (HG16, HG18, HG 25, and HG40) and three conventional grits (copper slag, coal slag, and chilled iron) were compared. Substrate roughness was measured using surface profilometry and correlated with operating parameters. The HG16 grit produced the highest surface roughness of all the grits tested. Aluminum and zinc-aluminum coatings were deposited on the grit-blasted substrates using the twin-wire electric arc (TWEA) process. Bond strength of the coatings was measured with a portable adhesion tester in accordance with ASTM standard D4541. The coatings on substrates roughened with steel grit exhibit superior bond strength to those prepared with conventional grit. For aluminum coatings sprayed onto surfaces prepared with HG16 grit, the bond strength was most influenced by current, spray distance, and spray gun pressure (in that order). The highest bond strength for the zinc-aluminum coatings was attained on surfaces prepared using the metal grits.

Read the entire article in the September 2006 Journal of Thermal Spray Technology. For more information visit www.asminternational.org/tss or contact ASM Customer Service Center, ext. 5900 tel: 800.336.5152 (toll free in United States) or 440.338.5151; fax 440.338.4634; email: customerservice@asminternational.org

Editor: Christian Moreau
Associate Editors: Jan Ilavsky, Seiji Kuroda, Lech Pawlowski, and Armelle Vardelle

ITSA Technical Program Open to Public
The International Thermal Spray Association welcomes non-member participation at the Technical Program portion of their membership meetings. ITSA semi-annual membership meetings are typically three-day events with a thermal spray technical program on Friday from 8:00 am through 5:00 pm.

This is in response to interest from non-member individuals wanting to take advantage of these valuable thermal spray educational opportunities.

The April 27, 2007 Technical Program will be held in Chandler, Arizona. The cost for non-members to attend is $300, which includes breakfast and lunch.

For more information, contact Kathy Dusa, ITSA corporate Secretary, email: kathydusa@thermalspray.org
ASM TSS Email Discussion Group

Over 600 subscribers from 40 countries use this lively discussion forum. Sharing information and networking with colleagues is a key goal of the ASM Thermal Spray Society. All thermal spray related communication is welcome. The forum has seen ideas on applications for thermal spray, coating properties, equipment for sale, positions wanted and job openings, calls for papers, and other news of interest to the thermal spray community.

Join the group now! Visit www.asminternational.org/tss and choose “Technical Resources” for subscribing information.

Cold Spray Technology Book

This “Cold Spray Technology” is the first book on the cold spray process. The important feature of the book is that it covers a wide spectrum of various technology aspects including gas-dynamics, physics of interaction of high speed solid particles with a substrate as well as equipment, technologies, and applications. The book includes results of original studies conducted at the Institute of Theoretical and Applied Mechanics of the Siberian Division of the Russian Academy of Science for more than 20 years (1984-2005) as well as results of studies conducted at most of research centers over the world. The authors’ goal was to explain basic principles and advantages of the Cold Spray process, to give practical information on technologies and equipment, and to present the current state of research and development in this field throughout the world.

The book provides coverage and data that will be of interest for users of Cold Spray technology as well as for other coating experts. The book can be useful for the broad reading public, in particular, for engineers, scientists, technicians, undergraduate and postgraduate students as well as for specialists who are interested in studies of advanced technologies, gas dynamics of supersonic gas flows and physics of high speed collisions of the particles with the target.

To order Cold Spray Technology, visit www.elsevier.com (Elsevier Publication, 2006)
Authors: Anatolii Papyrin, Vladimir Kosarev, Sergey Klinkov, Anatolii Alkhimov, Vasily Fomin.
Edited by Anatolii Papyrin

In Memoriam

Randy White
1954 - 2006

Randy White, 52, owner of Top Koat Custom Powder Coating, passed away September 15, 2006, at an Arlington, Texas hospital.
Randy was born Aug. 19, 1954, in Fort Worth. Randy was the previous owner and President of WearMaster, Inc. in Kennedale, Texas.

Randy was an innovative person with two patents on thermal spraying devices.
He was known for his generosity of spirit, kind soul, sense of humor and beautiful blue eyes.
He was surrounded by his wife, Janice, and family when he passed away.

Survivors are his wife, Janice White; daughter, Crystal White; stepson, Ryan Klump; sister, Beverly Wolfe; brother, David White; niece, Lisa Wolfe; nephews, Jacob White and James Wolfe; and many other relatives and friends.

Top Koat is still open for business and you may send condolences there at 110 Industrial Drive, Kennedale, TX 76001, tel: 817.478.0797, email: info@topkoat.com, website: www.topkoat.com

Exhibitor Registration Now Open

The MegaRust 2007 Marine Coatings and Corrosion Conference will be held June 4-7 in San Diego, California.
The exhibitor registration is now open at the website www.nstcenter.com

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