

In The News

Conference and Workshop Information

Asian Thermal Spray Conference 2006

November 6-7, 2006, Gyungju, Korea

The Asian Thermal Spray Conference (ATSC 2006) will be held at the Gyungju Hilton in Gyungju, South Korea. This conference offers an exchange of ideas and information on all aspects of thermal spray in Asia. There will also be industrial tours of Pohang Iron and Steel Company and the POSCO Museum, RIST (Research Institute of Industrial Science and Technology), POSTECH (an engineering college), and the Pohang Accelerator Laboratory. Gyungju is a capital city of the Shilla Dynasty, a resort city located an hour's drive north of Busan and 1 h by air from Seoul.

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Thermal Plasma Fundamentals and Applications

International Round Table. January 14-18, 2007, Sharm el Sheikh, Egypt

The objective of this workshop is to review progress made in this field over the past three decades, to evaluate unsuccessful approaches, and to identify the areas where intensive research effort will have an impact. The workshop format is designed to promote an open exchange among leading scientists in this field, to encourage debate, and to focus on

reaching a clear sense of direction and prioritize future research. Seven sessions will include discussions of different topics in the field, with the closing session devoted to an analysis of the principal conclusions reached and the laying down of a work plan for the completion of a series of five technical review papers to be published in refereed scientific journals.

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Recent Conferences

International Thermal Spray Conference 2006

May 15-18, 2006, Seattle, Washington

The 2006 International Thermal Spray Conference (ITSC 2006) was held in parallel with two other major conferences in material science and engineering—17th Annual AeroMat (Advanced Aerospace Materials and Processes) and Fifth International Surface Engineering Congress (ISEC) & Exhibition.

The three conferences held their plenary sessions together. Regular sessions were located on different floors of the Conventional Center with some joint sessions—for example, the ITSC and ISEC held the “Surface Engineering for Corrosion Protection” session. This way of organizing conferences provides wider options for participants from related fields to meet, discuss, listen to each other's talks, and develop new contacts. Well-attended

poster sessions were held on different days.

On Monday morning, the Aeromat plenary session was presented by Dr. John Liu, from Alcoa Technical Center on “Advanced Metallic and Hybrid Structural Concepts for Future Aircraft.” The Tuesday ITSC plenary session was given by Dr. Malcolm C. Thomas, FASM, from Rolls-Royce on “Aero Gas Turbines—Surface Engineering.” On Wednesday morning, professor Allan

Matthews from University of Sheffield presented ISEC plenary talk on “The Role of Nanocomposite Coatings in Surface Engineering.” After plenary sessions, participants had the choice of up to 13 parallel sessions in the morning and afternoon.

The conference was well complemented by the exhibition. More than 120 exhibitors took advantage of this three-conference event to present their products and services to a larger and more diversified group of clients.



ITSC Plenary Speaker Malcolm Thomas



Doug Puerta, TSS general meeting discusses the future of TSS

Thermal Spray Society Meeting

The Thermal Spray Society held its open membership meeting during the ITSC 2006 in Seattle. During this meeting, the President of the ASM Thermal Spray Society gave his "state of the society" address to the members. President Richard Knight, FASM, professor in the Department of Materials Science and Engineering at Drexel University, began: "To provide a brief summary of the past three years, I should begin by saying that TSS has grown and prospered since we last gathered in the U.S. in Orlando, for ITSC 2003. Membership since 2004 has increased, with a total membership of 1500 expected by the end of this year. Our fi-



View of downtown Seattle from dinner cruise

nancial history is also positive. Revenues have stayed ahead of expenses over the

past three years, and we expect this to continue."

This introduction was followed by the awards program—first presenting inductees into 2006 Hall of Fame. Subsequently he presented best paper awards for the *JTST* Volumes 13 and 14 as well as the best paper awards and certificates of merit for the ITSC conference proceedings.

Later the meeting continued a lively discussion on matters of the Thermal Spray Society.

Web Sources and Resources

Die Coat Life for Die Casting Could Be 14 Times Longer

From www.reliableplant.com, (Noria, Corporation; corresponding publication, Reliable Plant magazine)

Die casting is used by a range of industries to create components for automobiles, appliances, hardware, electronics, and computer parts. A critical part of the manufacturing process in low-pressure and gravity die casting plants are die coats. Die coats prevent premature solidification of the molten metals while filling and also prevent adhesion of the molten metal to the metallic die. A revolutionary new coating developed by the Australian research organization, CSIRO, could last up to 14 times longer than existing products.

The long-life insulating coat, known as CASTcoat, was invented by CSIRO scientists Mahnaz Jahedi and Stefan Gulizia. "This new coating could mark a significant turning point for Australia's \$500 million die casting industry," says Jahedi, the project leader.



Die, protected newly developed insulating coat known as CASTcoat utilizing thermal spray technology. This coating increases the life of the die as much as 14 times as compared to traditional coatings.

Current coatings offer poor wear resistance as they struggle to adhere to the die for more than a few shots. Every few shots of damaged area of die coat have to be repaired or touched up. Eventually, the conventional die coat is stripped and re-applied. This makes the application of conventional die coats highly operator-dependent.

CASTcoat technology overcomes problems associated with the conventional die

coat because of its use of thermal spray technology. Instead of using a silicate-based binder, the bonding between ceramic particles partially melts the ceramic particles during thermal spray, fusing together on impact. The resulting bond is far stronger than traditional binders. This means high wear resistance and durability, ensuring the die is better protected, and with no need for constant touch-ups.

The insulating properties of CASTcoat can be tailored to any application, without changing the die-coat thickness, while product consistency can be ensured. A wide range of casting surface finishes, from rough to very smooth, can also be produced by CASTcoat and maintained. Jahedi says that the durable insulating coat can be used across a variety of applications, such as molten metal handling or wherever any insulating and wear-resistant coatings are needed.

CASTcoat started as a Ph.D. project between CSIRO and the University of Queensland and has continued with financial support from the CRC for Cast Metals Manufacturing (CAST).

Source: www.csiro.au.