

# In The News

## New Literature

### ***Metallography and Microstructures, Volume 9, ASM Handbook***

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*G.F. Vander Voort, Ed. ASM International. 2004. 1150 pages. ISBN: 0-87170-706-3. \$210. ASM Member: \$168.*  
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The new *ASM Handbook, Volume 9, Metallography and Microstructures*, replaces 1985 edition with updated, new coverage on metallographic techniques and improved emphasis on the interpretation of microstructural images.

Elementary and more advanced topics in physical metallurgy are covered in more than 20 articles on structures produced by

solidification, solid-state transformations, and deformation. Alloying, phase diagrams, and nonequilibrium transformations are extensively covered as important factors in the formation and interpretation of microstructures.

New topics include articles on digital imaging, quantitative analyses, field metallography, and metallography of archaeological alloys. Updates include all stages of the metallographic process, from the initial extraction of samples to the preparation and examination of specimens, as well as new information on equipment and consumable products.

All articles on the metallography and microstructures of ferrous and nonferrous alloys have been revised to be more useful guides for specimen preparation and

micrograph interpretation. This includes substantial updates on the use of color metallography and a new color insert. Greater emphasis is placed on micrograph interpretation, and micrographs are integrated with textual discussions on metallurgy, processing, and specimen preparation. Update reflects changes in consumable products and preparation methodology, as well as new metals, alloys, and manufacturing technologies that have emerged since 1985. Substantial new coverage is provided on: cast irons, steels, tool steels, stainless steel micrographs, aluminum alloys, magnesium alloys, titanium alloys, precious metal alloys, thermal spray coatings, coated steels, biomedical alloys, semisolid alloys, ceramics, and cemented carbides.

## Recent Conferences

### **Materials and Processes for Energy Systems Workshop 2004**

A special symposium was held in honor of Herbert Herman, a man considered a true pioneer in thermal spray materials engineering and founder of one of the leading research institutions in the world. The symposium, focused on Materials and Processes for Energy Systems, was organized by the Center for Thermal Spray Research located at Stony Brook University, New York. The three-day workshop held this past July was attended by more than 150 engineers, researchers, and scientists from around the world and addressed the current and future role of thermal spray for energy systems. Today's energy systems and more importantly those being designed for future applications are greatly dependent on high-performance surfaces and coating materials. The thrusts and design requirements for these systems were discussed by more than 25 leading applicators and researchers such as Dr. Brij Seth of Siemens Westinghouse, Dr. Curt Johnson of General Electric Research, Prof. Christian Coddet of LERMPS, and Prof.

Armelle Vardelle of the University of Limoges. Included in the workshop was a special session dedicated to the research and development contributions of CTSR alumni, including Dr. Robert Gansert of Hardface Alloys Inc., Dr. Ravi Shankar of Chromalloy, and Dr. Jan Ilavsky of Argonne National Laboratory.

Thermal spray technology has been responsible for the production of many suc-

cessful protective coating applications throughout the years. The processing of these coatings, however, has generally been achieved through Edisonian methods and serendipity. New complex materials systems and operational demands have required more sophisticated process control and coating characterization techniques that will allow thermal spray to



**Bob Gansert from Hardface Alloys presenting his talk about application of thermal spray deposits in the electronics industry**



**Prof. Herbert Herman introducing a special session dedicated to the research and development contributions of CTSR alumni during the last day of the workshop**

move out of the “band-aid” or repair arena into the designed for use, functional surface field. There is a wealth of information within the thermal spray research community that will help in facilitating the higher technology usage of thermal spray processing. A critical task of the CTSR, a National Science Foundation Materials Research Science and Engineering Center (MRSEC), is to link research to practice; that is, connecting the know-how of the industry at large with the advances being made through university-based and/or national laboratory research centers and facilitating the transfer of knowledge between the two. Through the sponsorship of annual thematic workshops, training classes, industrial consortium, and a host of other outreach initiatives, the CTSR is able to bring together the two sectors responsible for creating the future of the technology.

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### **International Thermal Spray Conference and Exposition ITSC 2004, Osaka, Japan, 10-12 May 2004 – Japanese Organizing Committee Awards**

The Japanese Organizing Committee has recognized ten original papers presented at the International Thermal Spray Con-

ference and Exposition 2004 that was held in Osaka, Japan in May 2004. The conference was jointly organized by DVS, German Welding Society; ASM-TSS, Thermal Spray Society; IIT, International Institute of Welding; HTS, High Temperature Society; and JTSS, Japan Thermal Spray Society. The awards were presented at the conference banquet by Professor A. Ohmori, Osaka University, to authors of the following papers:

**S. Tao, B. Liang, C. Ding**, Shanghai Institute of Ceramics, Shanghai, China, and **H. Liao, C. Coddet**, LERMPS-UTBM, Belfort, France. “Wear Characteristics of Plasma Sprayed Nanostructured Yttria Partially Stabilized Zirconia Coatings”

**H. Du, C. H. Shoi and S. W. Lee**, Sum Moon University, Asan, Korea. “Study on Porosity of Plasma Sprayed Coating by Digital Image Analysis Method”

**H. Chen, C. H. Choi, S. W. Lee**, Sum Moon University, Asan, Korea, and **C. X. Ding**, Shanghai Institute of Ceramics, Shanghai, China. “Deposition Efficiency and Microhardness of Plasma Sprayed Zirconia Coatings Using Different Powders as Feedstocks”

**I. Ozdemir, I. Hamanaka, Y. Tsunekawa and M. Okumiya**, Toyota Technological Institute, Nagoya, Japan. “In-Process Exothermic Reaction in HVOF and Plasma Spraying with SiO<sub>2</sub>/Ni/Al-Si-Mg Composite Powder”

**Y. Ishikawa, J. Kawakita, S. Kuroda**, National Institute for Materials Science,

Tsukuba-shi, Japan, **S. Osawa, T. Itsukaichi**, Fujimi Inc., Kakamigahara, Japan, and **Y. Sakamoto and M. Takaya**, Chiba Institute of Technology, Chiba, Japan. “Evaluation of Corrosion and Wear Resistance of Hard Cermet Coatings Spray by Using an Improvement HVOF Process”

**F. Kikkawa**, Tokyo Institute of Technology, Yokohama, Japan, **H. Tamura**, National Defense Academy Yokosuka, Japan, and **K. Kondo**, Tokyo Institute of Technology, Yokohama, Japan. “Ti-B-C Composite Coating Produced by Electrothermally Exploded Powder Spray Technique”

**G.-J. Yang, C.-J. Li and Y.-Y. Wang**, Welding Research Institute, Xi’an, China. “Phase Formation of Nano-TiO<sub>2</sub> Particles During Flame Spraying with Liquid Feedstock”

**T. Suidu, Y. Harada, T. Teratani**, Tocalo Co., Ltd., Kobe, Japan, and **M. Okazaki**, Nagaoka University of Technology, Nagaoka, Japan. “Optimization of the Repair Thermal Spray Coatings for the Damaged Singlecrystal Superalloy”

**K. Shinoda, A. Yamada, T. Koseki and T. Yoshida**, University of Tokyo, Tokyo, Japan. “In-Situ Measurement of Sprayed Ceramics Particles and Supercooling Effects on Splat Morphology”

**S. Osawa, T. Itsukaichi**, Fujimi Inc., Kakamigahara, Japan, **A. Rehan and R. Ahmed**, Heriot-Watt University, Edinburgh, Great Britain. “Influence of Substrate Properties on the Impact Resistance of WC Cermet Coatings”

## **Web Sources and Resources**

### **Polysurfaces Bookstore (www.polysurfacesbookstore.com)**

The site presents relatively detailed information on a broad selection of technical and scientific publications revolving around a core interest area of polymer surfaces and coatings. It also offers full, secure, on-line sales support, for purchase of the titles listed.

The site incorporates two distinct search options. The full site search (at left) scans the entire site for matches. Thus, phrases used in the description or preface, chapter titles, etc., produce hits, making it pos-

sible to find which books address even highly specific and esoteric topics. Alternatively, the targeted search (above) allows one to search only certain fields (title, author, ISBN, etc.), making it easy to locate one specific book or a well-defined group of books.

The listings are arranged by subject, with separate pages announcing prepublication, special sale, and new items.

Selected topics include:

- coating processes;
- composites, laminates, and fibers;

- general references;
- health, safety, and environment;
- inks and coatings;
- materials science;
- paints and protective coatings;
- plastic films;
- plastics processing technology;
- polymer characterization;
- surface characterization and analysis; and
- wear, weathering, and tribology.