

In The News

New Literature

CD-ROM: Thermal Spraying Standards and Technical Bulletins for Quality Assurance

Basic Version. DVS—The German Welding Society. 2003. EUR 138

This new, definitive CD-ROM features material taken from the printed loose-leaf series "Quality Assurance in Welding II." It is a compilation (in PDF format) of all the DIN EN and DIN EN ISO Standards and corresponding DVS Technical Bulletins sheets taken from the series. Subjects covered are material properties, measuring procedures, surface preparation, aspects relating to classification, testing, safety, delivery conditions, and so forth, with the central themes quality and safety running throughout.

DIN EN and DIN EN ISO standards include (all in German and English, except E DIN standards, which are in German only):

- DIN EN 582,
- DIN EN 657,
- DIN EN 1274,
- DIN EN 1395,
- E DIN EN ISO 2063,
- DIN EN 13214,
- DIN EN 13507,
- E DIN EN 14616,
- DIN EN ISO 14918 to 14921,
- DIN EN ISO 14922-1 to 14922-4,
- E DIN EN ISO 14923, 14924,
- E DIN EN ISO 17834, 17836, and
- DIN EN 22063.

DVS Technical Bulletins include (all in German unless otherwise indicated):

- DVS M 2301 and 2302,
- DVS M 2303-1 and 2303-4 (German/English),

- DVS M 2303-2 and 2303-3,
- DVS M 2304 (German/English),
- DVS R 2307-1,
- DVS M 2307-2 to 2307-4,
- DVS M 2308 (German/English),
- DVS M 2310-1, 2310-2,
- DVS M 2311, 2312, and
- DVS M 2314, 2315.

Contact: DVS-Verlag GmbH; Aachener Str. 172, 40223 Düsseldorf, Germany; tel: +49 211 1591-0; fax: +49 211 1591-150; e-mail: verlag@dvs-hq.de; Web: www.dvs-verlag.de.

Coatings Technology Handbook

D. Satas and A. Tracton, Ed., 2nd ed., revised and expanded, NACE International. 928 pages. \$180

This handbook presents the insights and experiences of more than 100 recognized experts in more than 100 chapters to select and apply the best coatings for product needs.

Contact: NACE Headquarters, 1440 South Creek Dr., Houston, TX 77084-4906; tel: 281/228-6223; fax: 281/228-6329; Web: www.nace.org.

Advanced Powder Technology III

L. Salgado and F.A. Filho, Ed., Materials Science Forum, Vol 416-418. Trans Tech Publications. 2003. Paperback. 788 pages. ISBN: 0-87849-912-1-1. US \$247/EUR 247

This volume focuses on the technology of metal and ceramic powders. The topics covered range from powder production,

spray forming, powder compaction, and sintering, to mechanical alloying, corrosion of P/M parts, and biomedical applications. Special sections concentrate on powder production, sintering mechanisms and sintering furnaces, and injection molding. The authors of the papers are affiliated with powder producers, industrial P/M parts producers and users, centers of P/M and powder technology, research institutes, or universities and therefore bring with them an incomparable wealth of experience in using this technique.

Contact: Trans Tech Publications Inc., P.O. Box 699, May St., Enfield, NH 03748; tel: 603/632-7377; fax: 603/632-5611; e-mail: usa-ttp@ttp.net.

Mechanical Properties of Ceramics and Composites. Grain and Particle Effects

R.W. Rice, Ed., Materials Engineering Series/17, Marcel Dekker. 712 pages. ISBN: 0-8247-8874-5. \$225

Contents include:

Introduction to Grain and Particle Effects on Ceramic and Composite Properties

Grain Dependence of Monolithic Ceramic Properties: Grain Dependence of Microcracking, Crack Propagation, and Fracture Toughness at ~22 °C; Grain Dependence of Ceramic Tensile Strengths at ~22 °C; Grain Dependence of Indentation Hardness at ~22 °C; Grain Dependence of Compressive Strength, Wear, and Related Behavior at ~22 °C; Grain Effects on Thermal Shock Resistance and Elevated Temperature Crack Propagation, Toughness, and Tensile Strength; Grain Dependence of Hardness, Compressive Strength, Wear, and Related Behavior at Elevated Temperatures.

Dependence of Ceramic, Especially Particulate, Composite Properties on Grain and Particle Parameters: Particle (and Grain) Effects on Elastic Properties, Crack Propagation, and Fracture Toughness of Ceramic Composites at ~ 22 °C; Particle Dependence of Tensile Strength of Ceramic Composites at ~ 22 °C; Composite Particle and

Grain Effects on Hardness, Compressive Strength, Wear, and Related Behavior at ~ 22 °C; Particle and Grain Effects of Mechanical Properties of Composites at Elevated Temperature; Summary and Perspective for the Microstructural Dependence of Mechanical Properties of Dense Monolithic and Composite Ceramics.

Contact: Marcel Dekker, Inc., Cimarron Rd., P.O. Box 5005, Monticello, NY 12701-5185; tel: 800/228-1160; fax: 845/796-1772; e-mail: bookorders@dekker.com; Web: www.dekker.com.

Conference/Workshop Information

Surface Engineering. International Conference

10-11 September 2003. Homebush Bay, Sydney, Australia

This conference is designed to provide technical information on everyday issues facing engineers, such as: choice of process; quality; surface treatment thickness and hardness ranges; abrasion and corrosion resistance; processing time, temperature, and pressure; costs; distortion tendencies; and other critical process factors and coating characteristics.

Contact: Events Coordinator, WTIA, P.O. Box 6165, Silverwater NSW 1811, Australia; tel: +61 (0) 2 9748 4443; fax: +61 (0) 2 9748 2858; e-mail: I.dummer@wtia.com.au.

Adhesion Aspects of Thin Films (including Adhesion Measurement and Metallized Plastics). International Symposium

15-17 December 2003. Orlando, Florida

This symposium integrates key aspects of three symposia that were held separately in the past dealing with adhesion aspects of thin films, adhesion measurement, and metallized plastics. The main idea is to provide a broader venue for the discussion and exploration of these three closely related fields of endeavor. The main part of the symposium is concerned with those aspects of thin-film technology that have a direct bearing on film adhesion to the substrate. This is a topic of both fundamental interest to thin-film technology and of great practical concern in applications where films of high stress are involved.

The coating of diamond films onto machine tools is one of many applications

where thin-film adhesion is a critical factor in coating durability. The second part of the symposium deals with the ability to accurately measure the adhesion of coatings to surfaces, which is a crucial part of the development and manufacturing process dealing with coatings and films.

Finally, metallized plastics are a burgeoning technology heavily dependent on thin-film adhesion with applications ranging from decorative design to optical coatings to advanced thin-film wiring schemes in the microelectronics industry. Metallized plastic films allow the technologist to capitalize on the favorable properties of two disparate classes of materials to create new and unique products that transcend the performance and usefulness that can be obtained by either class alone.

Contact: Dr. Robert H. Lacombe, Conference Chairman, 3 Hammer Dr., Hopewell Junction, NY 12533; tel: 845/226-1393; e-mail: rhl@mstconf.com; Web: www.mstconf.com/adhfilm.htm.

High-Velocity Oxyfuel Flame Spraying, Sixth HVOF Colloquium

27-28 November 2003. Erding (near Munich), Germany

New high-velocity oxyfuel flame spray systems are opening up more and more possibilities for new applications. The Sixth HVOF Spraying Colloquium will cover the state-of-the-art of this technology, new research findings, recent developments in spray systems and spray materials, the economic efficiency of the different systems, and applications in current use.

The colloquium is directed at the thermal spray specialist as well as at the user of functional spray coatings. It will focus on the potential that HVOF systems currently offer, will deal with the trend toward higher particle speeds for wire and

rod spraying and will present the new technology, cold spraying.

Contributions include:

“High Velocity Oxyfuel Flame Spraying—State-of-the-Art, New Developments and Alternatives,” Prof. Dr. H. Kreye, Dr. F. Gärtner, Universität der Bundeswehr Hamburg, Germany; Prof. Dr. H.J. Richter, Dartmouth College, Hanover, NH.

“Carbide Based Thermal Spray Powders—Powder Production and Corrosion Behavior of HVOF Coatings,” Dr. A. Kirsten, E.G. Findeisen, R. Moll, M. Oechsle, WOKA GmbH, Barchfeld, Germany.

“Improved Coating Properties by Optimized Carbide Powders Tailored for Modern HVOF Systems,” Dr. S. Zimmermann, Dr. G. Schwier, Dr. H. Keller, H.C. Starck GmbH, Laufenburg, Germany.

“Method and Potential of the Cold Spray Process,” Dr. J. Voyer, T. Stoltenhoff, T. Schmidt, Universität der Bundeswehr Hamburg, Germany.

“Application of Analytical Methods for Understanding and Optimization of the Cold Spray Process,” Prof. Dr. H. Assadi, Tarbiat Modarres University, Teheran, Iran; Dr. F. Gärtner, T. Stoltenhoff, Universität der Bundeswehr Hamburg, Germany.

“New Challenges for Wire and Rod Flame Spraying,” Dr. F. Gärtner, Dr. J. Voyer, Universität der Bundeswehr Hamburg; Prof. Dr. H.J. Richter, Dartmouth College, Hanover, NH; W. Krömmel, Linde AG, Unterschleißheim, Germany.

“Torch Fluid Dynamics—The Key to Wire Arc Spray Process Control,” Prof. Dr. J. Heberlein, University of Minnesota, Minneapolis, MN.

“The Benefits of Standards for Industries Using Thermal Spraying as an Example,” Dr. B. Schambach, DIN Deutsches Institut für Normung e.V., Berlin; Prof. Dr. D. Böhme, R. Huber, SLV München, NL der GSI mbH, München, Germany.

“GTS Activities as Generator of New Developments in the Coating Industry,” A. Kalawrytinios, Dr. H. Reimann, P. Heinrich, GTS e.V., Unterschleißheim, Germany.

“Order in Chaos—Chaos in Order,” Prof. Dr. H.-O. Peitgen, Universität Bremen, Germany.

“Nature beyond Nature,” Prof. Dr. H.-O. Peitgen, Universität Bremen, Germany.

“Modern Control Concepts for HVOF Applications,” Dr. K. Nassenstein, Dr. T. Schnick, GTV mbH, Luckenbach; Dr. W. Mannsmann, Alstom Power Generation AG, Mannheim, Germany.

“Cold Spray System for Industrial Use,” P. Richter, Cold Gas Technology GmbH, Ampfing, Germany.

“Case Studies for Industrial Applications,” W. Krömmer, Linde AG, Unterschleißheim, Germany.

“First Large Scale Production of Coatings for Heat Sinks Used in the Computer and Automotive Industry,” D. Grasmé, OBZ Grasmé & Dresel GmbH, Bad Krozingen, Germany.

“Industrial Perspectives of the Cold Spray Technology in the USA,” Dr. J. Karthikeyan, ASB Industries, Barberton, OH.

“Potential Applications of Cold Spray Coatings in the Aircraft Industry,” D. Jonke, EADS Deutschland GmbH, München, Germany.

“Potential Application of Cold Sprayed MCrAlY Coatings for Stationary Gas Turbines,” Dr. W. Stamm, Siemens AG, Mühlheim, Germany.

“Modern Gas Supply Concepts for Thermal Spraying with State-of-the-Art Monitoring,” W. Krömmer, P. Heinrich, C. Rickfält, Linde AG, Unterschleißheim, Germany.

“New Developments in HVOF Spraying at Sulzer Metco,” Dr. R. Schmid, Dr. M. Nestler, W. Rusch, Ch. Warnecke, Sulzer Metco Inc., Westbury, NJ.

“The New JP-8000 HP HVOF-Gun,” R. Thorpe, Praxair TAFE, Concord NH; J. Beczkowiak, Praxair Services GmbH & Co. KG, Wiggensbach, Germany.

“New HVOF Equipment and Technology for the Use of Fine Powders and Internal Coating Applications,” G. Matthäus, Thermico GmbH, Castrop-Rauxel, Germany; G. Stevens, Cerma Shield, Boksburg, South Africa.

Contact: Linde AG, Linde Gas Division, Dept. SDS, Attn.: Peter Heinrich, Carl-von-Linde-Str. 25, 85716 Unterschleißheim, Germany; tel: +49 (0) 89/31001-564; fax: +49 (0) 89/31001-364; e-mail: hvof2003@gts-ev.de; Web: hvof2003.gts-ev.de.

Computational Modeling and Simulation of Materials. Third International Conference

30 May-4 June 2004. Acireale (Catania), Sicily, Italy

The scope of this conference, which follows and extends the previous editions held in 1998 and 2002 in Florence, Italy, will cover state-of-the-art aspects of materials theory and modeling, and application of computational techniques to fundamental and applied aspects concerning chemistry, physics, structure, processing, microstructure evolution, and properties of materials: from atomistic approaches that present immediate opportunities for the development of novel functional materials, to the simulation of phenomena connected with materials behavior and processing that often require bridging atomistic, mesoscopic and macroscopic length and time scales. Attention will also be devoted to the use of the computational tools for problems involved in the design and operation of advanced devices, and to predictive modeling applied to the materials manufacturing industry, where thermodynamic calculations combined with kinetic models prove their usefulness in finding optimal compositions and processing parameters in systems of commercial interest.

Inorganic as well as organic materials morphologies and systems will be considered including, for example, quantum dots, nanowires, nanotubes, atomic clusters, extended defects, crystals, polycrystalline materials, glasses, granular materials, soft condensed matter, porous media, thin and thick films, and composite, nanostructured, layered, and hybrid structures.

A Special Session is planned to address and discuss crucial issues for further growth of materials computational research. The introduction of computer

modeling and simulation into the rapidly growing field of materials nanoscience and nanotechnology will be the object of a specific symposium.

Contact: Cimtec, P.O. Box 174-48018 Faenza, Italy; tel: +0546 22461; fax: +0546 664138; Web: www.technagroup.it/modeling.htm.

MS&T 2003

9-12 November 2003, Chicago, Illinois

Materials Science & Technology 2003 (MS&T 2003) is the multidisciplinary conference that will incorporate the 2003 TMS Fall Meeting and the 45th Iron & Steel Society (ISS) Mechanical Working and Steel Processing Conference. Both practical and theoretical issues will be addressed in the following planned symposia:

- Three-Dimensional Materials Science,
- Affordable Metal-Matrix Composites for High-Performance Applications,
- Automotive Sheet Steels,
- Casting and Solidification of Ferrous Alloys,
- Control of Melt-Related Defects in High-Temperature Alloys,
- Effect of Processing on Materials Properties for Nuclear Waste Disposition,
- Frontiers of X-Ray Micro- and Nano-Beam Diffraction,
- Mechanical Working and Steel Processing Conference,
 - Long Products and Forging,
 - Flat Rolled Products,
 - Product Physical Metallurgy,
 - Roll Technology,
- Lead-Free and Lead-Bearing Solders,
- Powder Materials: Current Research and Industrial Practices,
- Process Control and Optimization in Ferrous and Nonferrous Industry,
- Process Modeling and Computer Applications,
- Processing and Properties of Structural Materials,
- Processing and Properties of Structural Nanomaterials,
- Processing-Structure-Property-Performance Relationships,
- Sheet and Flat Rolling,

- Structure-Property Relationships in High-Performance Ferrous-Base Systems Possessing Composite-Like Structures, and
- The Accelerated Implementation of Materials & Processes.

Contact: TMS Programming Services; tel: 724/776-9000, ext. 212; e-mail: raabe@tms.org.

Advances and Future Directions in Military Coating Systems

 28 March-1 April 2004. New Orleans, LA. A symposium during CORROSION/2004, sponsored by STG 40

Papers are solicited on topics dealing with unique aspects of military coating technologies (e.g., pretreatments, military specifications, etc.), maintenance issues, identification of critical issues associated with these coating systems, and new/

alternative methods to gage their performance. Other topics dealing with any aspect of military coating systems, especially those that deal with methods to solve current or future problems are also encouraged.

Contact: Dr. Sean Brossia, Symposium Chair, Southwest Research Institute, 6220 Culebra Rd., San Antonio, TX 78238; tel: 210/522-5797; fax: 210/522-6965; e-mail: sean.brossia@swri.org; Web: www.nace.org/nace/content/conferences/c2004/technical_symposia.asp.

Thermal Spray Solutions: Advances in Technology and Application. ITSC 2004

 10-12 May 2004, Osaka, Japan

This annual event is jointly organized by the ASM-TSS, the IIW, and the DVS. The

ITSC 2004 is also supported by JOC—the Japanese Organizing Committee, which is responsible for the accompanying exposition.

The ITSC 2004 will present the latest status of application, research, and development in thermal spraying. The conference language will be in English with selected simultaneous Japanese-English translation.

Submit abstracts through the ITSC 2004 website at www.dvs-ev.de/itsc2004.

Contact: DVS—German Welding Society, Attn. ITSC 2004, Aachener Str. 172, 40223 Düsseldorf, Germany; fax: +49 (0) 211 1591-200; e-mail: jens.jerzembeck@dvs-hg.de; Web: www.dvs-ev.de/itsc2004.

Recent Conferences

Surface Engineering: Principles and Applications

 Practical Workshop at Second Annual International Surface Engineering Conference and Exposition
 15-17 September 2003. Indianapolis, IN

Tuesday, 16 September, 8:00 a.m.-noon. Session Chair: Arnold H. Deutchman, Worthington BeamAlloy, Columbus, OH

- *Case Hardening.* Principles and Applications: Roger Lupien, Bodycote Thermal Processing, Chicago, IL

- *Plating/Conversion Coating.* Principles and Applications: Steve Deisher, Techmetals, Inc., Dayton, OH

- *Thermal Spray.* Principles: William J. Lenling, Thermal Spray Technologies, Inc., Sun Prairie, WI; Applications: Daryl E. Crawmer, Thermal Spray Technologies, Inc., Sun Prairie, WI

Wednesday, 17 September, 8:00 a.m.-noon. Session Chair: Robert Tucker, The Tucker Group

- *Ion Beam Deposition.* Principles and Applications: Arnold H. Deutchman, Worthington BeamAlloy, Columbus, OH

- *Physical Vapor Deposition.* Principles: Torsten Doering, Balzers, Inc., Amherst, NY; Applications: Paul Olson, Balzers Inc., Elgin, IL

- *Chemical Vapor Deposition.* Principles: Volker Wunder, IonBond, LLC, Madison Heights, MI; Applications: Fred Teeter, Diamond Tool Coating, Inc., Tonawanda (Buffalo), NY

Contact: George E. Fern Company, 1100 Gest St., Cincinnati, OH 45203; fax: 513/621-4439; Web: www.asminternational.org/surface.