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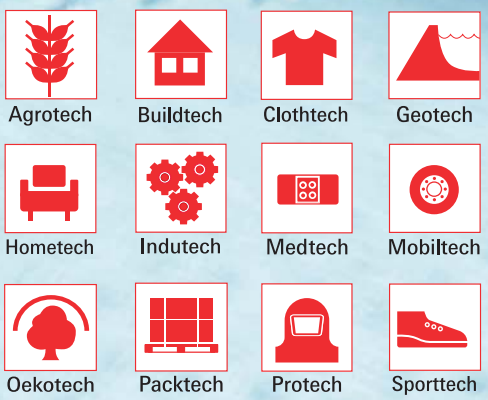
NORTH AMERICA

International Trade Fair for
Technical Textiles and Nonwovens



Attendee Brochure

Las Vegas

Mandalay Bay Convention Center
March 15 - 17, 2011

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NORTH AMERICA

The eighth edition of Techtextil North America, the ONLY trade show in the Americas dedicated to technical textiles and nonwovens, will take place March 15 - 17, 2011 at the Mandalay Bay Convention Center in Las Vegas,Nevada.

Techtextil North America is your prime opportunity to meet with the industry's leading producers of technical textiles and nonwovens. Discover new products, exciting technology, ground-breaking materials and advancements in the industry as companies from around the world showcase their latest innovations.

A key component of the event is Techtextil North America Symposium which will contain ten sessions with over 40 presentations and topics in a variety of formats that will cover a wide range of topics including research, military developments, sustainability, technology, intelligent fabrics and biotechnology.

New for 2011 - Keynote Address Open to ALL Attendees and Exhibitors.

The keynote address will take place Tuesday, March 15th from 8:30 a.m. to 9:15 a.m. as the kickoff to the 2011 Techtextil North America event. The keynote address is open and free to all participating 2011 attendees and exhibitors.

Register Now at www.techtextilNA.com/ASB

Show Information

Show Hours

Tuesday, March 15	10:00 am - 5:00 pm
Wednesday, March 16	10:00 am - 5:00 pm
Thursday, March 17	10:00 am - 3:00 pm

Symposium Hours

Tuesday, March 15	9:30 am - 11:30 am / 1:30 pm - 4:00 pm
Wednesday, March 16	8:30 am - 11:00 am / 1:30 pm - 4:00 pm
Thursday, March 17	8:30 am - 11:00 am

Location

Mandalay Bay Convention Center, Las Vegas, NV USA
www.mandalaybay.com

Accommodations

There are four hotels currently offering preferred Techtextil North America rates ranging from $56 to $229 through February 11, 2011. For full information/reservations, please visit www.techtextilNA.com and click on the "Housing Information" section.

Admission Costs

	Pre-registration	On-site
Exhibition Only	$25.00	$50.00
3-Day Symposium	$595.00	$700.00
1-Day Symposium	$295.00	$400.00
½ Day Symposium	$195.00	$250.00

(Free Expo Hall Pass is included with Symposium Pass.)

***For Academia, Students, Nonprofit or Government agencies, special rates are available. Please contact 770-984-8016 x411 for full details.

Who Should Attend?

Professionals and decision makers directly involved with technical textiles and nonwovens such as but not limited to:

- Consultants
- Corporate Executives
- Government Executives
- Manufacturing Directors
- Military
- New Business Development Directors
- Plant Management
- Product Development Managers
- Purchasing Executives
- R&D Engineers
- R&D Scientists
- Technical Directors
- Academia

Product Groups

The product groups at Techtextil North America represent the entire value-added chain in the technical textiles and nonwovens sector.

1. Research, Development, Planning and Consultancy
- International institutions
- National research institutes
- Universities and polytechnics
- Industrial research centers
- Planning and consulting companies

2. Technology, Machinery and Accessories
- Production processes
- Processing technology
- Machines and equipment
- Control and monitoring methods
- Purification and regeneration technology
- Disposal and recycling technology
- Technical accessories
- Laboratory and measuring equipment
- Quality assurance

3. Fibers and Yarns
- Man-made fibers
- Glass fibers
- Metal fibers
- Natural fibers
- Other fibers

4. Woven Fabrics, Laid Webs, Braiding, and Knitted Fabrics
- Woven Fabrics
- Laid Webs
- Braiding
- Knitted Fabrics
- Tapes, strings, cords
- Belts, ropes, cordage
- Nets

5. Nonwovens

6. Coated Textiles
- Coated textiles
- Laminated textiles
- Tent fabrics
- Packaging materials, sacking
- Tarpaulin fabrics
- Awning materials
- End-product manufacturing
- Accessories

7. Composites
- Reinforcing textiles
- Composite textiles
- Prepregs
- Structural components and moldings
- Fiber-reinforcing plastic for concrete parts, pipes and containers
- Membrane systems
- Films and sheeting
- Textile-reinforced plastic for concrete parts, pipes and containers
- Textile sheet products for laminating with solids such as metal, plastic and glass

8. Bondtec
- Finishing processes
- Adhesive, sealing and molding materials
- Laminating and coating materials
- Raw materials and additives
- Application processing
- Material pretreatment
- Plastics and other hardening masses
- Adhesive mixing and application equipment, robot technologies
- Surface treatment technologies
- Plasma treatment
- Flocking

9. Associations

10. Publications

Application Areas

Techtextil North America covers all industry segments from A to Z with dedicated application areas. Committed to presenting industry products for every possible use, the 12 application areas are designed to help our attendees locate the types of products and services they need from exhibitors. Take the opportunity to explore the extensive market reach of the technical textiles industry. (The industries and products specified are only examples and do not represent an exhaustive list.)

Agrotech

Horticulture and landscape gardening, agriculture and forestry, animal husbandry, fences, etc.

Trade visitors: agricultural engineers, landscape architects, horticultural engineers, agricultural institutes and large organizations, etc.

Buildtech

Membrane, light-weight/solid construction, engineering and industrial building, temporary construction, interior construction, earth, water and traffic route construction, agricultural construction, etc.

Trade visitors: architects, civil engineers, planning authorities, property developers, building-material manufacturers, building companies, etc.

Clothtech

Technical components of garments, shoes, bags, etc.

Trade visitors: shoe and garment manufacturers, designers, developers, etc.

Geotech

Underground, civil engineering, earth and road construction, dam engineering, dump construction, ground isolation, drainage systems, erosion control and containment, etc.

Trade visitors: road and underground engineers, road and underground building companies, planning authorities, municipalities, etc.

Hometech

Technical components of furniture, upholstery and interior furnishing, rugs, floor coverings, etc.

Trade visitors: furniture makers, designers, interior designers, architects and planners from the contract sector, etc.

Indutech

Filtration, cleaning, mechanical engineering, chemical industry, electrical industry, seals, sound absorption products, etc.

Trade visitors: processors and users of products with textiles for all industrial applications, industrial designers, developers, etc.

Medtech

Hygiene, medicine, rescue organization equipment, etc.

Trade visitors: producers and processors of medical requisites, medical devices, research institutes, etc.

Mobiltech

Automobile and shipbuilding, aircraft and space travel, rail vehicles, motorcycle and bicycle construction, etc.

Trade visitors: designers, engineers, components suppliers, etc.

Oekotech

Environmental protection, recycling, waste disposal, etc.

Trade visitors: environmental-protection engineers and technicians, environmental-protection authorities, special companies, etc.

Packtech

Packaging, protective cover systems, sacks, big bags, storage systems, etc.

Trade visitors: packaging industry, developers, buyers from major commercial and industrial companies, etc.

Protech

Protection of persons and properties, etc.

Trade visitors: security engineers and technicians, manufacturers of protective clothing, safety offices, industrial safety organizations, etc.

Sporttech

Sport and leisure, active wear, outdoor, sport equipment and outfits, sports shoes, etc.

Trade visitors: designers and manufacturers of sport articles and equipment, etc.

Keynote Address - Jeremy Litchfield, Founder of Atayne
Tuesday, March 15th, 8:30 a.m. - 9:15 a.m.

Techtextil North America is honored to have Jeremy Litchfield, Founder/Chief Pacesetter of Atayne, deliver the 2011 Keynote Address.

Jeremy Litchfield launched Atayne in May 2007 to inspire positive environmental and social change through the power of active lifestyles. Atayne leverages groundbreaking technologies and uses "trash" (e.g. plastic bottles, coconut shells, crab shells, old garments, etc.) to design high performance outdoor and athletic apparel.

Prior to starting Atayne, Jeremy's professional experience centered on brand strategy, consumer insights, and growing brands through non-traditional channels. He served as the Director of Brand Strategy and Consumer Insights at RedPeg Marketing and Operations Manager at Pierce Promotions. His brand experience cuts across a variety of categories and includes large and small brands such as Gillette Venus, Dove, Pepperidge Farm, Diet Pepsi, Drambuie, Zyrtec, and The I Do Foundation.

Outside of work Jeremy enjoys an active, outdoor lifestyle and works endlessly to promote sustainable living. Jeremy is the Founder and on the steering committee of the Maine Advanced Textile Technology Consortium. Additionally, he sits on the Advisory Board of the Foundation for Renewable Energy Education.

New for 2011 - Keynote Address Open to ALL Attendees and Exhibitors.

Symposium at a Glance

DAY ONE
Tuesday, March 15

Keynote Address, 8:30 a.m. - 9:15 a.m.

Morning Sessions, 9:30 a.m. - 11:30 a.m.
TT01: Educational Forum
TT02: Executive Forum

Three Concurrent Afternoon Sessions, 1:30 p.m. - 4:00 p.m.
TT03: Extreme Outdoor
TT04: Usable Technology I

DAY TWO
Wednesday, March 16

Three Concurrent Morning Sessions, 8:30 a.m. - 11:00 a.m.
TT05: Military I
TT06: Sustainability/Green

Three Concurrent Afternoon Sessions, 1:30 p.m. - 4:00 p.m.
TT07: Military II
TT08: Medical

DAY THREE
Thursday, March 17

Three Concurrent Morning Sessions, 8:30 a.m. - 11:00 a.m.
TT09: Protective Textiles
TT10: Usable Technology II

Register Now at www.techtextilNA.com/ASB

Note: Program is subject to revision, additions, and change. Please refer to www.techtextilNA.com for the latest updates.

Techtextil North America Symposium 2011

The Techtextil North America 2011 Symposium has been developed to meet the current strategies and goals of the attendees and exhibitors. The Symposium will now contain a more structured program allowing ample time for Q & A with the presenters during and at the end of each session. And, as always, the program will also allow for plenty of time to spend on the exhibition floor where companies from all aspects of the industry will be showcasing their latest innovative products and developments from around the world.

Successful companies, the industry leaders, are always eager to learn of new developments and to network with those involved in the work. Techtextil North America Symposium 2011 provides a great opportunity as never before to find new technology and markets in this competitive environment that is technical textiles.

Tuesday, March 15, 2011

9:30 a.m. - 11:30 a.m.

TT01: Educational Forum

Session Chair: Dr. Fred Cook, Professor, Materials Science and Engineering, Georgia Tech, Atlanta, GA, USA

A new and unique program designed for those in the industry or those coming in who may want a refresher in textiles oriented to technical applications. Elements of fiber, yarn and fabric types, attributes and advantages of each type and their applications will be presented. The panel consist of academic and industry experts who will review how they fit into technical textiles. This session is designed to honor many requests for such a program at the beginning of the event to make your visit more useful.

TT02: Executive Forum

Session Chair: William C. Smith, Symposium Director, Techtextil North America, Greenville, SC, USA

Designed for advanced professionals, a number of high ranking Industry executives will give their opinion on the technical textiles industry, how they are handling the recession and trends they may see. Get the benefit of their thoughts on the outlook for technical textiles from their perspective.

1:30 p.m. - 4:00 p.m.

TT03: Extreme Outdoor

Session Chair: Jeff Dugan, Co-founder and Research Vice President, Fiber Innovation Technology, Johnson City, TN, USA

Outdoor recreation/leisure, athletic, and protection from extreme elements will be the focus of this new session. Developments in technology that greatly improve performance will be reviewed.

TT03.1 Stretch Woven Fabrics Engineered to Meet Today's Demands

Mary Reardon, Vice President Sales and Marketing, TWEAVE, LLC, Norton, MA, USA

Stretch woven fabrics were initially developed and are currently used to meet the stringent requirements of specialized apparel applications. Techniques used to produce such fabrics are applied to allow the development of fabrics with unique properties, including two-way stretch with woven fabrics, for an ever broadening list of applications and markets, from performance wear to technical textile applications.

TT03.2 A New Technical Fiber Variant For Performance Wear

Seth Casden, CEO, Hologenix, LLC, Santa Monica, CA, USA

A new technical fiber variant, Celliant®, has been developed for performance wear, bedding, and veterinary markets. A core-and-sheath fiber, it is designed to improve oxygen flow near the skin's surface, reduce pain, and provide enhanced performance for extreme athletes and used by marathon runners, tri-athletes and even Olympic medalists. The natural mineral additives in the fiber "recycle the body's natural energy emissions by absorbing and then re-emitting the light at the specific and controlled wavelengths".

TT03.3 Testing of Materials for Outdoor/Extreme Sports Applications

Chris Moore,Vice President of Marketing, Optimer Inc, Wilmington, DE

Materials destined to be used in outdoor sports and extreme environments have special needs to be effective. This paper will discuss come of those needs and the special or unique test methods utilized in the industry.

TT04: Usable Technology I

Session Chair: Malcolm Rosenow, Consultant, Aiken, SC, USA

Technical textiles are ever evolving and creating new techniques and applications, making possible many new areas, and providing momentum and ideas for new, innovative, and creative uses. We will go beyond the hype, what emerging or new technology can we look to for growth, and present it in an easily understood series of talks.

TT04.1 Innovative Viscose Fibers for Novel Applications

Richard Reid, Kelheim Fibres GmbH, Daphne, AL, USA

Fibers exhibiting extremely high absorbency, excellent dispersability in water, a gel effect on the fiber surface or outstanding self-bonding properties are attributes of one of the newer viscose fibers now available, suited for many potential applications – from medical and hygiene products to filters and specialty papers. Additionally, new fiber variants exhibiting ion exchange properties many times higher than current methods and a chemically modified viscose specialty fiber with up to 40 times higher dye absorption capacity than a standard viscose fiber.

TT04.2 Knitted-to-Shape Spacer Fabrics – Opportunities and Applications

Lutz Heinig, Technical Manager, Karl Mayer North America, Charlotte, NC, USA

New developments in warp knitting of spacer fabrics make it possible to introduce substantially more functionality in these fabrics. In-line variations in density, contours, surface patterns and integrated seamless folding lines enable production of ready to use pieces for a variety of applications, ranging from seat cushioning to protective clothing.

TT04.3 New Capabilities of Microencapsulation of the Technical Textile Industry

Ted Goodwin, Vice President of Business Development, ENCAPSYS® Appleton, Appleton WI, USA

Microencapsulation has been with us for many years – think of "carbonless" carbon paper (remember carbon paper?) to dryer sheets that soften fabrics and give pleasant scents. The technology is applicable to many applications and finding wider acceptance and use in technical textiles. The additives provide controlled release (often creating "smart" fabrics), improved throughput, enhanced properties and benefits, making new products and market possible. This presentation will include a step-by-step decision making path to help you determine if the technology can be of benefit to you in your products.

TT04.4 Functional Metallization of Textiles and Plastic Films

Thomas S. Rimel, Jr., Vice President Operations & Development, DUNMORE Corp., Bristol, PA, USA

This presentation will cover basics and vacuum metallization of aluminum on various substrates. Characterization of the functional metal layer as well as additional processing and material techniques to enhance the performance properties of the composite material will be defined.

Wednesday, March 16, 2011

8:30 a.m. - 11:00 a.m.

TT05: Military I – Outlook

Session Chair: Dr. Eugene Wilusz, Natick Soldier RDE Center, Natick, MA, USA

This session will look at doing business with the military and governmental agencies, outlook, and regulations, taking advantage of research and testing facilities, and technology transfer. This is the first of two military sessions in the program.

TT05.1 Production of Functional Thermoplastic Nano/Submicron-fibers and Membranes

Dr. Gang Sun, Ph.D. Professor, Division of Textiles and Clothing, University of California, Davis, CA, USA

Thermoplastic nanofibers of polyesters and polyolefins were produced by a high-throughput melt extrusion process invented by a team of researchers from UCDavis and USArmy Natick Labs. The fibers, dispersed in various solvent systems, created uniform membranes with varied air permeability and barrier properties. A well controlled thin layer of nanofibers could be deposited onto a supporting material by air spaying processes. These two processes can rapidly produce membranes in large quantities with different nanofibers with different functions.

TT05.2 Chemical Transfer From Contaminated Cloth To Human Skin

Xiaoying Hui, MD, Associate Research Dermatologist, University of California San Francisco, San Francisco, CA, USA

TT05.3 Superoleophobic Fabric Treatments

Dr. Joe Mabry, Lead, Polymer Working Group, Edwards Air Force Base, CA, USA

TT05.4 The eGlove: A New Human-Computer Interface Paradigm for Chemical/Biological Operations

Emily W. Medina, Research Scientist, Space and Naval Warfare (SPAWAR) Systems Center Pacific, San Diego, CA, USA

The eGlove, developed as an emerging future technology for military users in a tactical environment, is a gesture recognition capability that allows a user to replace traditional keyboard and mouse interfaces to a computer. Tactical systems are continually being modified for the military user to accommodate ever-growing weight limits and battery power. Computers have become lighter, faster, and smaller; in many tactical situations, however, users are required to wear heavy protective gear which hinder normal computer tasks, and which potentially degrade performance over long periods of time. The eGlove is a prototype hardware design that has yet to be fully integrated into a combat-ready glove. This presentation will focus on a few design concepts that may better integrate eGlove technology for the tactical user.

TT06: Sustainability/Green

Session Chair: Jim Kaufmann, TEAM, Inc., Textile Engineering and Manufacturing, Woonsocket, RI, USA

Beyond the buzz words. Is this for real? What does it mean? Environmental and sustainable design, green technology and textile applications for the real world will be presented.

TT06.1 A Simple Introduction to Green and Sustainable

Jim Kaufmann, TEAM, Inc., Textile Engineering and Manufacturing, Woonsocket, RI, USA

A general overview of the meaning of green and sustainable as it relates to technical textiles. In simple terms: Is the "movement" for real? What is it? What does it mean? Why do we care? How can my company benefit?

TT06.2 PLA Fibers – The Journey Continues

Robert Green, Americas Business Director, Natureworks, LLC, Minnetonka, MN, USA

Fibers derived from polylactic acid (PLA) are a renewable and sustainable raw material option suitable for a variety of applications. In addition to an update on new commercial applications, data on recent improvements to PLA eco profile will be provided. In addition, comparisons of gross fossil energy usage and greenhouse gas generation for PLA versus many of the common petrochemical based polymers will be provided as well as updates on recent advances in chemical recycling.

TT06.3 Is Your Supply Chain Committed to Sustainable and Green?

Joe Walkuski, President/CEO, TEXbase, Inc., Bozeman, MT, USA

Discussion around how to engineer sustainable materials to avoid compromising quality or delivery throughout your supply chain (supply chain must also be 'sustainable', otherwise everyone loses). Look at what's happening with recycled plastic and organic cotton these days.

TT06.4 Greenwashing Sustainability

Steven A. Jesseph, President/CEO, Worldwide Responsible Accredited Production, Arlington, VA, USA

Sustainability is the latest buzzword to come off Madison Avenue. It seems every company wants to show how they are "green" and are moving their entire organization toward "sustainability". If we look to the 1987 Brundtland Commission definition of Sustainability as meeting the needs of today's generation without compromising the needs of future generations, how can we address the issues of our growing global population while we are consuming non-renewable resources of fossil fuels, uranium, lithium, rare earth metals and more at an increasing rate? We must face these challenges head-on and begin to make radical changes in the ways we live and do business.

TT06.5 Successfully Using Recycling, Green and Sustainability as an Integral Part of your Business Strategy

Jamie Bainbridge, Director, Textile Development & Sustainability, Nau, Inc., Portland, OR, USA

Green and Sustainability are great buzzwords, but can a business truly evoke them and survive in today's business climate? Or, if you're going to "talk the talk," can you also "walk the walk" and prosper as a business?

1:30 p.m. - 4:00 p.m.

TT07: Military II – Technology to Impact the Industry

Session Chair: Harry P. Winer, President, HIP Consulting, LLC, Holliston, MA, USA

Developed for specialized military use, much technology, as in the past, act as a catalyst that lead to commercial applications and create new markets and growth. This second military session reviews some of the latest developments in the area.

TT07.1 Navy Clothing and Textile Research Facility Capabilities and Partnering Opportunities

Cleveland Heath, Navy Clothing & Textile Research Facility, Natick, MA, USA

The Navy Clothing and Textile Research Facility (NCTRF), located in Natick MA is responsible for the research, development, test, evaluation and engineering support for uniforms, and personal protection clothing ensembles and equipment worn by the US Navy. The diverse collection of products ranges from dress clothing, working uniforms, insignia (embroidered and metal), footwear, to diving suits and chemical warfare protective clothing and equipment. As such, they continuously seek to build relationships with academia, other government agencies and private industry. During the development of candidate fabrics and ensembles, a breadth of testing protocols are utilized that include both standard and specialized durability methods as well as unique system level assessment methodologies to characterize performance. The extensive laboratory facilities include Patterning and Prototyping capabilities, controlled Air and Immersed Biophysical Testing, Flame/Thermal swatch and system level assessments, and Physical Properties Material Testing. A discussion of the capabilities and partnering opportunities describing processes to explore mutually beneficial relationships through cooperative research and testing agreements along with evolving programs will be presented.

TT07.2 Industry-Academia-Government Model Cooperation

Dr. Mark Gebhart, Wright State University School of Medicine and John Granby, Vice President Government Relations, Lion Apparel, Inc., Dayton, OH, USA

The National Center for Medical Readiness at Wright State University's tactical laboratory provides training, education, and research and development laboratory facilities, and serves a model for cooperation between the private sector, local government and academia. The center of excellence designation by the State of Ohio has resulted in fast tracking of ideas and concepts to the mainstream market, and serves as a test bed environment in projects in many areas such as military applications, smart garments, materials for health care providers and others in the readiness and preparedness communities. The government, academic, and private sector cooperation is vital to inventing, nurturing, development and commercialization of the future of technical textiles.

TT07.3 Recent Developments in the Evaluation of Thermal Protective Clothing

Professor Guowen Song, Department of Human Ecology, University of Alberta, Alberta, Canada

Numerous standards have been developed to test and evaluate the properties and performance provided by textile materials and clothing. These standards were established by simulating different modes of heat transfer: convection (TPP), radiation (RPP) and conduction (molten substance and hot liquid), using bench scale to full scale flash fire manikin evaluation. In this review, the performance of fabric protective systems exposed to various thermal hazards is summarized, and the existing standards relevant to thermal protective performance are reviewed. Limitations are discussed regarding test methods, procedures, and predictions of human skin burn criteria of existing standards. In this presentation, new standards and proposals for several existing standard modifications are reviewed. Background research and findings relevant to these standards are discussed. Trends for new textile materials that have resulted from these advances in testing and standards are summarized. Additionally current evaluation methods of the heat stress experienced when wearing these protective clothing systems are reviewed.

Additional Speakers and Topics are in Development

TT08: Medical

Session Chair: Dr. Gang Sun, Ph.D. Professor, Division of Textiles and Clothing, University of California, Davis, CA, USA

The medical area is growing exponentially. There are huge and growing opportunities for technical textiles for those willing to do the work. While much is disposable and/or high volume commodity items, there are a number of niche areas that may be just right for you.

TT08.1 Textiles and Effective Odor Control

Jeffrey A. Trogolo, Ph.D., Chief Technology Officer, Agion, Wakefield, MA, USA

A focus on trends and new methods of odor control and elimination as it applies to non-wovens, apparel, and technical textiles. Discussion will include problems with odor in general, and issues of odor control across target markets, including Hometech, Clothtech and Medtech. The customer value of odor control, and the challenges of inventing new methods and protocols for textile technology testing will be reviewed.

TT08.2 Development of Protective Clothing Using Organic Cotton Knit Fabric with Metallic Oxide Coatings for AIDS Patients

J.S.Subashini, M.Sc., M.Phil., Reseacher, Mother Teresa University, Kodaikannallk, India

An important and growing part of the textile Industry is the medical and related healthcare and hygiene sectors. Textiles have always been a part of healthcare. With the spread of HIV and other blood borne diseases, the importance of protecting medical personnel is growing which demands development of more effective protective textiles. The protective clothing was developed by treating the Zinc and Titanium oxide on the fabric by exhaustion method. The treated fabrics were studied on two important clinical pathogens, made into garments, and thoroughly tested. Based on results, it could be concluded that maximum bacterial and fungal reduction was observed in the metal oxide treated fabrics. The treated fabrics have also resulted well against allergy and blood repellency, with greater patient comfort.

TT08.3 Reusable and Disposable in Medical Textiles: Beyond Either/or Options in the Operating Room

Professor Susan B. Kaiser, University of California, Davis, CA, USA

For over sixty years, consumers and producers of surgical gowns and drapes have been debating a key issue: Which is the better choice for the operating room – reusable or disposable textiles? In the United States alone, roughly 35 million surgical procedures are performed each year, supported by an approximately 5 billion-dollar surgical textiles industry. Concerns over escalating healthcare costs, environmental resource and waste issues, and a steadily increasing rate of nosocomial infections fuel the disposable/reusable debate. This research has pursued historical and contemporary, as well as industrial and user perspectives to explore how and why surgical materials become embedded in a complex "circuit of culture", as represented below in a model proposed by Paul du Gay and Stuart Hall.

TT08.4 The "Greening" of Reusable Surgical Textiles

Steven J. Tinker, President, American Reusable Textile Association, Research & Development, Gurtler Industries, Inc., Mission, KS, USA

After a reusable medical textile is engineered and manufactured to the highest quality standards what happens when it goes into use? Too often the laundering process is misunderstood and mischaracterized. Today's modern healthcare laundry is a high-technology operation that maximizes efficiency, minimizes resource requirements and has clear published standards of quality and safety available. This presentation will review the advances in reusable surgical textile laundering process; report on typical energy and water resource requirements for processing; and review the Healthcare Laundry Accreditation Council's program to raise the standards of the healthcare laundering industry. In addition, results of recent Life Cycle Assessments of surgical textiles that compare reusable surgical textiles with single-use or disposable products will be reviewed.

TT08.5 Creating and Testing Innovative Textiles Containing Non-Leaching Antimicrobial and Moisture Management Features

Robert A. Monticello, Ph.D., ÆGIS Environments, Midland, MI, USA

Antimicrobial agents primarily function as-leaching and non-leaching. The leaching types of antimicrobials (i.e.: silver, triclosan, and copper) must leave the substrate and chemically enter or react with the microorganism acting as a poison. The non-leaching type antimicrobial stays affixed (usually through covalent bonds) to the substrate and acts externally on the biological membrane of the microorganism. These non-leaching antimicrobial agent kill microorganisms on contact by creating a strong cationic charge density which physically destroys the microorganism without the need to enter into the cell. The evaluation of any antimicrobial test result requires a thoughtful and basic understanding of Microbiology, the strengths and limitations of each test, and understanding the mode of action of the antimicrobial agent in question. This presentation will provide a review of the key data and most recent test techniques relating to the demonstration of efficacy, durability and utility in dealing with microbial problems on textiles under real-world in-use conditions. This paper will also focus on the ability to formulate with a variety of other textile finishes to create textiles with multiple functionalities with emphasis on antimicrobial and moisture management properties.

Thursday, March 17, 2011

8:30 a.m. - 11:00 a.m.

TT09: Protective Textiles

Session Chair: John Cronin, Marketing Manager, Warwick Mills, New Ipswich, NH, USA

This popular session will cover ballistics standards, mine safety, blast mitigation fabrics /ensembles and some specialty areas, among others. A unique program is being developed with fresh ideas and applications.

TT09.1 Mine Rescue Ensembles for Underground Coal Mining

F. Selcen Kilinc-Balci, Ph.D., National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory, Pittsburg, PA, USA

The mining industry is among the top ten industries nationwide with a high fatal occupational injury rate. While improved technology such as wireless warning and communication systems, lifeline pulleys, and lighted vests have been developed for these responders, over the last 100 years, very little research in the area of mine rescue ensembles has been conducted. Today, mine rescue ensembles are used for rescue, recovery, and fire fighting in underground coal mines. This presentation highlights existing practices, use, gaps, and limitations for mine rescue ensembles used in U.S. underground coal mining currently under consideration for developing the appropriate design and performance requirements.

TT09.2 The Future of Auxetic Technology

David O'Keefe, President/CEO, Advanced Fabric Technologies, LLC, Houston, TX, USA

Auxetics are extraordinary materials that become fatter when stretched and thinner when compressed. Materials exhibiting this type behavior are perhaps much greater than may be expected. Due to the special effect in the auxetic materials they have very high load bearing and fracture resistance with high energy absorbency properties along with many special characters. This paper presents an overview of past, present and future research engineering of auxetic technology evolving into multi-discipline markets and fabrics.

TT09.3 National Institute of Justice on Ballistics Standards

Speaker TBA

TT09.4 FR101 - The Basics and Beyond- What You Need to Know

Denise Stratham, Bulwark Protective Apparel, Nashville, TN, USA

Yes, the basics of fire retardance or flame resistance will be covered, but there is so much more. With focus on materials and developments related to FR apparel, the applications, the needs, and the standards, this talk will refresh and bring you up to date. To illustrate further, a focus will be on arc-over protection for utilities, including standards and testing. New testing on FR workwear to show the effectiveness of various materials and newly developed techniques will be covered. Need or use FR garments? Then this is a must presentation.

TT09.5 Recent Advancements in UHMPE Fiber for Ballistic and Hand-Protection Markets

Shitij Chabba, Marketing Manager - Personal Protection Americas, DSM Dyneema

UHMWPE fiber and unidirectional (UD) products have unique properties that make them attractive for both ballistic and cut resistance segments. For ballistic applications, "Lightening the load" best summarizes the recurring demand and need for both the military and law enforcement. For cut resistant applications, higher levels of comfort and dexterity while increasing cut resistance performance and cost efficiency are the overall trends of the industrial hand protection and protective apparel marketplace. This presentation will highlight the design and development of new UHMWPE ballistic solutions that offer weight reduction and improved performance compared to conventional systems, and will show new UHMWPE solutions that push the boundaries of performance in cut resistant products.

TT10: Usable Technology II

Session Chair: Dr. Behnam Pourdeyhimi, Director Nonwovens Institute, NCSU, Raleigh, NC, USA

So many developments are occurring in technical textiles. Innovation is the key – new, fresh, and practical adaption of new technology. We expanded this topic to include some of the ones that will impact the industry.

TT10.1 New Technical Textiles from Semiconductor Nanowires

Brian A. Korgel, Department of Chemical Engineering, Texas Materials Institute, Center for Nano- and Molecular Science and Technology, The University of Texas at Austin, Austin, TX, USA

The last century witnessed the development of two classes of materials – polymers and semiconductors – that have led to a vast range of technologies that have dramatically changed people's lives. Now, a new class of nanomaterials, semiconductor nanowires, can be made, which offers the potential to combine the attributes of polymers i.e., mechanical flexibility, light-weight, high strength, low cost and high throughput processing – with the useful electronic and optical properties of semiconductors into one material. The unique combination of properties offered by nanowires might be utilized to create functional textiles with unprecedented capability, such as fabrics with good structural integrity that generate power from the sun as a photovoltaic device and store it in the form of a battery. This presentation will cover the synthesis methods available for semiconductor nanowires, the range of properties of the nanowires, and a snapshot of how they might be utilized to create new textiles.

TT10.2 Spiral Fabrics: A Fabric Technology for the Future

Mike Di Ruscio, Representing H.R. Leo Company, Germany

Instead of using yarns that interlace (weave) together at 90 degrees angle in a loom Spiral fabrics are defined as monofilament yarn content structures formed by assembly of two systems of yarns called coils and connecting pintles. A unique fabric is formed using specialized equipment in a 3-stage process of coiling, lacing/assemble and heat setting. They are ideal products for seamless conveyor belting applications and provide maximum flexural movement and structural toughness. Because of this special structure; spiral fabrics are being used or under evaluation for many other uses that tempts the imagination but have not yet been firmly established.

TT10.3 The Rapidly Growing Field of Carbon Fiber Technology and Applications

Malcolm Rosenow, Consultant Global New Business Development, Aiken, SC, USA

The presentation will cover a market overview for the demand of carbon fiber in Wind Energy, Compressed Natural Gas, and Conductive Composites. As composite turbine blades increase in length so does the demand for higher performance materials, such as carbon fiber. A rapidly growing market outside the United States is with Natural Gas Vehicles (NGV) plus the transportation of Compressed Natural Gas (CNG). A smaller growing market is in Conductive Composites for Electromagnetic Interference (EMI) for electronic housings and applications requiring lightning strike protection. These three markets will be reviewed to highlight applications and potential materials demand.

TT10.4 Nonwoven Filter Media – A Look Back, Trends and Future Market Needs

Clint Scoble, Principal Filtration Consultant Filter Media Services, LLC, Cincinnati, OH, USA

Nonwoven products and manufacturing methods have been around for many years. How these “old” technologies are still meeting the current needs of the pollution control and process filtration market segments will be presented. Yet, as in any progressive industry, new and emerging technologies are currently, and may in the future, be incorporated into these and other applications to be even more efficient and cost effective. Future market needs and how nonwoven filter media can adapt to meet those needs to remain viable in a rapidly changing economy will be reviewed.

Techtextil Shows Around the Globe

- Techtextil (May 24 - 26, 2011), Frankfurt, Germany
- Techtextil India (October 10 - 12, 2011), Mumbai, India
- Techtextil North America (April 24 - 26, 2012), Atlanta, GA, USA
- Techtextil Russia (Spring 2012), Moscow, Russia
- Cinte Techtextil China (October 2012), Shanghai, China

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