American Association of Textile Chemists and Colorists International Conference

(AATCC 2015)

Savannah, Georgia, USA 24-26 March 2015

ISBN: 978-1-5108-0355-8

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2015) by the American Association of Textile Chemists and Colorists All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the American Association of Textile Chemists and Colorists at the address below.

American Association of Textile Chemists and Colorists P. O. Box 12215 Research Triangle Park, NC 27709

Phone: (919) 549-8141 Fax: (919) 549-8933

www.aatcc.org

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Fax: 845-758-2634

Email: curran@proceedings.com Web: www.proceedings.com



2015 PROCEEDINGS OF AATCC International Conference

March 24-26, 2015 Hilton Desota Savannah, GA, USA

SPEAKER PRESENTATIONS

Scroll down or use the bookmarks in the navigation pane at left to move to a new location in the Proceedings. Click on a **Blue Paper Title** to view that paper.

A full text search can be performed for any word or phrase by pressing CTRL + F. Enter the desired text in the pop-up box and click "Next" or "Previous."

OLNEY MEDAL ADDRESS

Contributions to the Chemistry and Physics of Cotton Fibers
S. Haig Zeronian, Professor Emeritus, University of California, Davis

11

KEYNOTE ADDRESS

Doing Well or Just Looking Good? Kevin Myette, bluesign technologies ag	17
CONCEPT 2 CONSUMER® (C2C) TRACK	
► SESSION: Color & Lighting: "Bright Ideas" Moderator: Karen Kyllo, SGS Consumer Testing Services	
Color and Lighting 2015: Update for Retail Supply Chain Ann Laidlaw, ACL Color Consulting LLC	18
LED Lighting in Museums: Conservation and Color of Textiles Mary Ballard, Smithsonian Institution	71
Light Color and Color Quality Possibilities with LED Eric Haugaard, Cree	N/A
► SESSION: Concept Innovation Moderator: Kerry King, Spoonflower Inc.	
The Testing and Evaluation Process of Developing a Digitally Printed Performance Sustainable Textile Wallcovering for Commercial Applications Martin Gurian, Designtex	103
Accurate and Complete Color Communication = Color that Works John Darsey, Color Solutions International	113
Innovation Ideation from Concept to Commercialization Portia Blunt, New Balance	159
Cotton Innovations: Cotton Incorporated Presents a New Collection of Textile Developments Yvonne Johnson, Cotton Incorporated	160

► SESSION: Materials Development Moderator: Ann Laidlaw, ACL Color Consulting LLC	
Thermal Regulation for Cotton Renuka Dhandapani, Cotton Incorporated	23
Innovation in a Regulated World Joe Walkuski, Texbase	27
► SESSION: Consumer Product Interests Moderator: Heidi Carvalho, Rothtec Engraving Corp.	
Color with Life: Bio-Based Colorants Sarah Bellos, Stony Creek Colors	29
Choosing a Fit Model for Smart Garments: A Case Selection Approach Using 3D Body Scanning Mahendran Balasubramanian, Oklahoma State University	31
Evaluation of Apparel Quality from the Consumer's Perspective Laurel D. Romeo, Louisiana State University	320
► SESSION: Consumer Product Interests Moderator: Carol Revels, Lands' End Inc.	
Digital Technologies for the Apparel Decorator Johnny Shell, SGIA	334
The Quest for Performance Features: Consumers' Expectations Revealed Kim Kitchings, Cotton Incorporated	350
Cotton is the "Frenemy" – The Story of Under Armour's Charged Cotton Tom White, Under Armour	N/J
CHEMICAL APPLICATIONS TRACK	
► SESSION: Sustainability in Textiles Moderator: Kanti A. Jasani, Performance & Technical Textile Consulting	
Advances in Sustainable Textile Wet Processing Peter J. Hauser, North Carolina State University	35

The Changing Landscape of Chemicals in Consumer Products Amanda Cattermole, Cattermole Consulting Inc.	384
Elastane Blends: A Consumer's "Dream" or a Producer's "Nightmare" Mike Cheek, Huntsman	N/A
►SESSION: Herman and Myrtle Goldstein Student Paper Competition Moderator: Fred Cook, Georgia Institute of Technology	
Manipulating Electrospun Nanofiber Formation from Polyethyleneoxide by Surfactant Addition Michael Humphreys, University of Massachusetts-Lowell	398
Transparency: The Unlikely Steward of Increased Profits through Corporate Accountability and Social Compliance in Global Textile & Apparel Sourcing Blaze Javier Mandela, Fashion Institute of Technology	408
Study of Hydrophilic Modification for Polyamide 6,6 using Subtilisin Most. Setara Begum, Zhejiang Sci-Tech University, China	419
Study of Biocompatibility and Cell Proliferation on Microalgal Polyhydroxy Butyrate (PHB) Fibrous Structures for Wound Healing Applications Apurba Banerjee, University of Georgia, Athens	430
► SESSION: Advances in Wet Processing Moderator: Bert Truesdale: TenCate Protective Fabrics	
Efficient and Responsible Methods for Indigo Dyeing and Garment Washing Mike Tyndall, Cotton Incorporated	441
Novel Innovations for the Cold Temperature Textile Processing Arlan Peters, Novozymes North America	462
Water Repellent and Flame Retardant Magali Brown, NICCA USA	463
Recent Developments in Environmentally Friendly Wrinkle-Free Finishes of Cotton Fabrics Gang Sun, University of California, Davis	487

► SESSION: Advances in Specialty Materials and Finishing Moderator: Nelson Houser, M. Dohmen USA	
Fast Drying for Textiles: Energy Saving via Surface Chemistry Approaches Jiping Wang, Zhejiang Sci-Tech University, China	495
Evaluation of Active Moisture Management Effects with Standard and Adapted Test Methods Emiel DenHartog, North Carolina State University	517
Fluoro and Non-Fluoro Chemistry for Repellency: Where We Are and Where Are We Going? Geoffrey Gettliffe, Archroma	N/A
Evaluating Insulative Materials for Conductive Thread Mary Ruppert-Stroescu, Oklahoma State University	545
MATERIALS TRACK	
► SESSION: Protective Textiles Moderator: Haskell Beckham, Exponent	
Ventilation of Firefighter Turnout Gear: Reducing Heat Stress and Improving Physiological Comfort Meredith McQuerry, North Carolina State University	546
Pilot Scale Coating of Fabrics with Fluorodecyl Polyhedral Oligomeric Silsesquioxane/Fluoroelastomer Blends for Water and Liquid Chemical Repellent Clothing Quoc Truong, US Army Natick Soldier RDE Center	576
Plasma Enhanced Synthesis of Flame Retardant Cellulosic Materials Majid Sarmadi, University of Wisconsin, Madison	604
► SESSION: Medical Textiles Moderator: Brian Shiels, PBI Performance Products	
Self-Sanitizing Textile Gina Sloan, Microban International	605
Measuring Compression in Compression Garments Frin Kirkpatrick Exponent	626

Advances in Antimicrobial Testing Using Globally Harmonized, Industry Accepted Test Method Robert Monticello, International Antimicrobial Council	627
Novel Bi-component Fibers for Medical Applications Walter Chappas, Georgia Southern University	679
► SESSION: Functional Materials Moderator: Fred Cook, Georgia Institute of Technology	
Functionalization of Nylon 6 Nanomembranes with Polyester Coated FE₃O₄ Nanoparticles for Water Treatment Applications Nidia Trejo, Cornell University	680
Biodegradable and Biocompatible Soy Protein/Petroleum-Derived Electrospun Nanofiber Patches for Plant Protection Robina Hogan, United Soybean Board	N/A
Agrochem Based Chemistries for Biomedical and Commercial Applications Michael Jaffe, New Jersey Institute of Technology	682
Plasma Coupling for Improved Herbal Finishing of Textiles Seshadri Ramkumar, Texas Tech University	731
Recent Case Studies in the Medical and Consumer Textiles Field Mark Etchells and Rich Karpowicz, ETC Innovation LLC	732
► SESSION: New Developments Moderator: Robina Hogan, United Soybean Board	
Simultaneous Measurements of Cotton Fiber Maturity, Fineness, Ribbon Width and Micronaire James Rodgers, USDA-ARS-SRRC	733
Textile Size from Soyprotein for High-Speed Weaving Helan Xu, University of Nebraska	742
Novelty Nonwovens Made of Flax Marc Jolly, Norafin Inc.	767