



**63rd Tobacco Science Research Conference**  
**September 27-30, 2009 - Amelia Island, Florida USA**  
**Technical Program**

**Monday, September 28, 2009**

**Symposium**

Time	Abstract	Title
9:00 AM		<b>WELCOME:</b> Rob Stevens, 63rd TSRC Conference Chair, Lorillard Tobacco Company
9:10 AM		<b>INTRODUCTION TO SYMPOSIUM:</b> Joseph Wanna, 63rd TSRC Symposium Chair, Schweitzer-Mauduit International "Changing Times: The Tobacco Industry and Regulations"
9:15 AM	1	<b>Changing Times: Regulation of the US Tobacco Industry.</b> <u>Clausen Ely, Jr.</u> ; Covington and Burling, LLP, Washington D. C.
9:45 AM	2	<b>Low Ignition Propensity Regulation: History and Implications.</b> <u>Joseph Wanna</u> ; Schweitzer Mauduit International, Alpharetta, GA
10:15 AM		BREAK
10:45 AM	3	<b>Low Ignition Propensity Regulation: The Role of Cigarette Papers, Tobacco and Circumference.</b> <u>Paul Case</u> , Steven Coburn, Virginie Cotte, Leonardo Nappi, and Matthew Hesford; British American Tobacco, Group R&D Centre, Southampton, UK
11:15 AM	4	<b>Three Waves of Tobacco Science: Analysis, Biomarkers and Beyond - Where is the Science Heading?</b> <u>Kevin Reinert</u> , Jack Reid, and Dan Heck; Lorillard Tobacco Company, Greensboro, NC
11:45 PM		ADJOURN

**Poster Session with Authors**

- 5 **Post Manufacture Automatic Track Identification of Mixed Populations of Rods from a Dual Track Making Machine.** I. Tindall and H. Jose, Cerulean, Milton Keynes, UK
- 6 **Determination of Plasticizer Profile in Mono Acetate Filters Using the Microwave Method.** James Vincent and Ian Tindall; Cerulean, Milton Keynes, UK
- 7 **A Rigorous Extraction Methodology for Snus: Application of ISO 10993-12 Guideline to Permit Thorough *In Vitro* Toxicology Testing.** Mark Ballantyne, Mel Lloyd, and Vicky Stone; Covance Laboratories Ltd., Harrogate, North Yorkshire, UK
- 8 **Analysis of Pesticides in Smokeless Tobacco Extracts by Comprehensive Multi-Dimensional Gas Chromatography-Time of Flight Mass Spectroscopy (GC X GC-TOFMS).** Joe Binkley and Scott Pugh; LECO Corporation, Saint Joseph, MI
- 9 **Determination of Nicotine Trapping Efficiency of Cambridge Filters Pads Using Products With Different Levels of 'Tar' Smoked at Various Smoking Regimens.** Karen B. Kilby and Tanya J. Collins; R. J. Reynolds Tobacco Company, Winston-Salem, NC
- 10 **TSNA Method Comparison Using UHPLC-MS/MS.** John A. Mathis and Po Ying Yeung; Global Laboratory Services, Wilson, NC
- 11 **A Highly Specific Analytical Procedure for the Determination of Nicotine and Cotinine in Human Serum to Support the Pharmacokinetic Evaluation of Nicotine Uptake from Non-Combustible Tobacco Products.** Brian Bailey, Jane Spink, and David Bakes; Covance Laboratories Ltd., Harrogate, North Yorkshire, UK
- 12 **A Comparison of Radioactive Elements in US and Swedish Smokeless Tobacco Products.** Michele Mola<sup>1</sup>, Arif Faizi<sup>1</sup>, Kevin Mcadam<sup>1</sup>, Brad Rodu<sup>2</sup>, Roger Benzing<sup>3</sup>, Gary Prior<sup>3</sup>; <sup>1</sup>British American Tobacco, Group R&D, Southampton, UK; <sup>2</sup>University of Louisville, James Graham Brown Cancer Centre, Louisville, KY; <sup>3</sup>Scientific Limited, Harwell Science and Innovation Campus, Didcot, UK
- 13 **Comparative Quantification of Oxygen and Nitrogen Free Radicals Induced by Cigarette Smoke in Human Lung Cells *In Vitro*.** M. BENNETT; Lorillard Tobacco Co., Greensboro, NC
- 14 **Determination of Water and Nicotine in Tobacco Smoke by Gas Chromatography Using Capillary Columns Instead of Packed Columns.** Jacques Dumont; Imperial Tobacco Canada Limited, Montreal, Quebec, Canada
- 15 **Special Functional Mesoporous Silica Materials for Eliminating Nitrosamines in Smoke.** Ying Wang, Yu Zhou, Hong Ji Wang, Jing Yang, and Jian Hua Zhu; College of Chemistry and Chemical Engineering, Nanjing University, Nanjing, China
- 16 **Routine Analysis of Benzo(A)Pyrene in Cigarette Smoke by a Modified MDGC/MS System.** Shi Jiaqin, Liu Baizhan, and Xie Wenyan; Technical Center, Shanghai Tobacco Group Corp., Shanghai, China

- 17 **Puff-Profile Monitoring Equipment and Test Setting Both Influence Human Yield-In-Use Measures.** Paul Nelson, J.A. Bodnar, M.F. Borgerding, S.A. Bowman, K.M. Harger, E.K. Round, T.J. Steichen, M.F. Stiles, and J.H. Robinson; R.J. Reynolds Tobacco Co., Winston-Salem, NC
- 18 **Mainstream Smoke Chemical and Biological Analyses for 3R4F Kentucky Reference Cigarette.** C. Williard and R. Leverette; Lorillard Tobacco Co., Greensboro, NC
- 19 **Development of In-Vivo Mouse Model for Smoking-Induced Cardiovascular Disease.** M.A. El-Mahdy, W. Johnson, C. Hemann, A. Tewari, H.M.A. Talukder, and J.L. Zweier; Center for Environmental and Smoking Induced Diseases, Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH
- 20 **Mainstream Tobacco Smoke Exposure of APO-J-MICE. Gene Expression Analyses of the Thoracic Aorta.** Brian K. Nordskog, G.M. Curtin, J.E. Brown, and B.R. Bombick; R.J. Reynolds, Winston-Salem, NC
- 21 **Comparison of In Vitro Micronucleus Assay Among Four Procedures.** Hiroshi Fukudomi<sup>1</sup>, Maiko Ogura<sup>2</sup>, Toshiro Fukushima<sup>1</sup>, and Toru Tsujimoto<sup>1</sup>; <sup>1</sup>Japan Tobacco Inc., Tobacco Science Research Center, Yokohama, Japan; <sup>2</sup>Japan Tobacco Inc., Product Science Division, Tokyo, Japan
- 22 **Comparison of the Sensitivity of Human Bronchial Epithelial Cells to Cigarette Smoke-Induced Inflammatory Responses.** Ji-Hye Yoo, Han-Jae Shin, Hyung-Ok Sohn, Chul-Hoon Park, Hyeong-Seok Lee, and Chung-HO Lee; KT&G Central Research Institute, Daejeon, Korea
- 23 **Analysis and Improvement of the Smoke Delivery System for Automated Cigarette Smoke Inhalation Exposure.** Vladimir B. Mikheev<sup>1</sup>, Alec K. Hitchman<sup>1</sup>, Bruce R. Westerberg<sup>1</sup>, and David J. Hesse<sup>2</sup>; <sup>1</sup>Battelle Toxicology Northwest, Richland, WA; <sup>2</sup>Battelle, Columbus, OH
- 24 **Determination of Agrochemical Residues in Tobacco Combining Solid-Phase Microextraction and Gas Chromatography-Tandem Mass Spectrometry.** Jeong-Min Lee, Gi-Chul Jang, Jang-Mi Lee, Hyo-Keun Kim, and Keon-Joong Hwang; KT&G Central Research Institute, Daejeon, Korea
- 25 **UP-Regulation of the 4-Hydroxybenzoate Polyprenyl Transferase Gene in Cultivated Tobacco and Its Effect on Coenzyme Q<sub>10</sub> Levels and the Response to Oxidative Stress.** Michael R. Stiff, David Danehower, and Arthur Weissinger; Department of Crop Science, North Carolina State University, Raleigh, NC
- 26 **Rapid Method for the Quantification of Imidacloprid Residues in Tobacco and Cigarette Filler by HPLC.** Sharad K. Mehta, S.V. Dhalewadekar, and B.J. Rajesh; ITC R&D Centre, ITC Ltd., Bangalore, India
- 27 **Modification of Alkaloid Accumulation in *Nicotina Tobaccum* Through Genetical Engineering.** Bingwu Wang, Ray Long, Ramsey Lewis, and Rongda Qu; Department of Crop Science, North Carolina State University, Raleigh, NC
- 28 **Research on Content Change of Furfural and 5-Methyl Furfural of Flue-Cured Tobacco From Different Regions During its Pyrolysis and Combustion.** Peng Xin-Hui, Yi Jian-Hua, Sun Zai-Jun, Pu Wen-Xuan, Dai Yuan-Gang, Wang Yao-Fu, and Peng Yu, Technology Research & Development Center, China Tobacco Hunan Industrial Corp., LTD., Changsha, Hunan, China
- 29 **Effect of Cigarette Smoke Exposure on the Human Metabolome.** J. Reid, Lorillard Tobacco Co., Greensboro, NC

**Monday, September 28, 2009 - Afternoon, Session A**

Session Chair: Dan Heck

Time	Abstract	Title
2:20 PM	30	<b>The Influence of Cigarette Base Paper Physical Properties on Their Measured CO<sub>2</sub> Diffusivities and the Resultant Effects on ISO Smoking Yields.</b> <u>Matthew Hesford</u> and Paul Case. British American Tobacco, Group R&D Centre, Southampton, UK
2:40 PM	31	<b>Influence of Potassium on the Formation of Benzo[A]pyrene in Tobacco Pyrolysis.</b> <u>Yoji Uwano</u> and Shinya Yoshida, Japan Tobacco Co., Yokohama, Japan
3:00 PM	32	<b>Comparison of the Effectiveness of Tape and Simple Holder Based Vent Blocking Devices When Used in Intensive Smoking Regimes.</b> <u>I. Tindall</u> , and T. Mason Cerulean, Milton Keynes, UK, and L. Dutertre, Laboratoire National de Metrologie et d'Essais, Trappes, France
3:20 PM		BREAK
3:50 PM	33	<b>Modulating Effects of Fe(II), Fe (III) and Quinone/Hydroquinone on Tobacco Smoke-Mediated Hydrogen Peroxide Formation.</b> <u>E.A. Robinson</u> and M. Misra, Lorillard Tobacco Company, Greensboro, NC
4:10 PM	34	<b>On-Line Detection of Tobacco Smoke Constituent by Single Photon Ionisation Time -of-Flight Mass Spectrometry for On-Line Analysis of Tobacco Smoke: Applications and Determination of the Photo Ionisation Cross-Sections of Relevant Compounds.</b> <u>Ralf Zimmermann</u> , Markus Eschner, Matthias Bente, Christian Deuerling, and Mohammed Saraji, Univeristy of Rostock, Germany
4:30 PM	35	<b>Modeling Biofiltration Deodorization of Exhaust Air From Burley Tobacco Processing Plant.</b> <u>Shu Ming</u> <sup>1</sup> , Cen Pei-Lin <sup>2</sup> , Yang Wei-Pin <sup>1</sup> , Feng Feng <sup>1</sup> , Xu Wei-Min <sup>1</sup> ; <sup>1</sup> China Tobacco Zhejiang Industrial Co. Hangzhou, Zhejiang Province, China; <sup>2</sup> Department of Chemical and Biochemical Engineering, Zhejiang Unversity, Hangzhou, Zhejiang Province, China
4:50 PM	36	<b>Biodegradation of Nicotine in Aqueous Extract From Tobacco by <i>Pseudomonas</i> sp. ZUTSKD.</b> <u>Shu Ming</u> <sup>1</sup> , Yang Jun <sup>1</sup> , Zhu Chen-Jing <sup>2</sup> , and Zhong Wei-Hong <sup>2</sup> ; <sup>1</sup> China Tobacco Zhejiang Industrial Co. Hangzhou, Zhejiang Province, China; <sup>2</sup> College of Biological and Environmental Engineering, Zhejiang Unversity, Hangzhou, Zhejiang Province, China
5:10 PM	37	<b>Evaluation of the Effect of Phytol on the Formation of PAHs in Cigarette Smoke.</b> <u>Serban Moldoveanu</u> , William Coleman III, and Niraj P. Kulshreshtha; R. J. Reynolds Tobacco Company, Winston-Salem, NC
5:30 PM		ADJOURN

Time	Abstract	Title
2:20 PM	38	<b>Development of Technical Regulations of Tar, Nicotine and Carbon Monoxide for Tobacco Products in the European Union in the Last Decade Till Today with Special Focus on Cigarettes.</b> <u>Juergen Hahn</u> , Chemisches Und Veterinaruntersuchungsamt Sigmaringen, Sigmaringen, Germany
2:40 PM	39	<b>The Submission of Available Toxicological Information on the Ingredients in Tobacco Products in the European Union.</b> <u>Anja Thielen</u> <sup>1</sup> , Gerhard Scherer <sup>2</sup> , Wolf-Dieter Heller <sup>1,1</sup> Deutscher Zigarettenverband, Berlin, Germany, <sup>2</sup> Analytical-Biologisches Forschungslabor GmbH, Munchen, Germany
3:00 PM	40	<b>Establishment of Functional Relationships for Predicting Mainstream Smoke Constituent Yields for Conventional Cigarettes from Japanese Market.</b> <u>Masahiro Fujiwara</u> , Takatsugu Hyodo, and Kazue Minagawa, Japan Tobacco Inc., Yokohama, Japan
3:20 PM		BREAK
3:50 PM	41	<b>Comparative Analysis of Gene Expression Profile of Tobacco Trichome in Different Ecological Regions.</b> <u>Cui Hong</u> and Ji Hao, National Tobacco Cultivate Physiology and Chemistry Research Center, He Nan Agricultural University, He Nan, Zhengzhou, China
4:10 PM	42	<b>Cloning and Expression of Calcium-Dependent Protein Kinase Gene Family from <i>Nicotiana Tabacum</i>.</b> <u>Guanshan Liu</u> <sup>1,2</sup> , Yuhe Sun <sup>2</sup> , Shuaishuai Tai <sup>2</sup> , Weifeng Wang <sup>2</sup> , and Jia Chen <sup>3</sup> <sup>1</sup> Key Laboratory for Tobacco Quality Control, Ministry of Agriculture, China, <sup>2</sup> Tobacco Research Institute of CAAS, Qingdao, Shandong, China, <sup>3</sup> State Key Laboratory of Plant Physiology and Biochemistry, Beijing, China
4:30 PM	43	<b>Cloning, Structural Features, and Expression Analysis of Resistance Gene Analogs in Tobacco.</b> <u>Gao Yu-Long</u> , Xu Zhao-Li, Jiao Fang-Chan, Yu Hai-Qin, Xiao Bing-Guang, Li Yong-Ping, Lu Xiu-Ping, Yunnan Institute of Tobacco Science, Yuxi, China
4:50 PM	44	<b>Genetic Analysis and Molecular Marking for Resistance of Tobacco Cucumber Mosaic Virus.</b> <u>Yuanying Wang</u> , Jingyuan Fan, Caihong Jiang, Wansheng Chen, Min Ren, and Haizhou Hu, Tobacco Research Institute of Chinese Academy of Agricultural Sciences, Qingdao, China
5:10 PM	45	<b>Identification and SSR Marking of Resistance Gene to Tobacco Cucumber Mosaic Virus.</b> <u>Jingyuan Fan</u> , Yuanying Wang, Caihong Jiang, Wansheng Chen, Min Ren, and Haizhou Hu, Key Laboratory for Tobacco Quality Control, Ministry of Agriculture, China, Tobacco Research Institute of China Academy of Agricultural Sciences, Qingdao, Shandong, China
5:30 PM		ADJOURN

Time	Abstract	Title
8:30 AM	46	<b>Formation of Radicals From Cigarettes Under Different Smoking Conditions.</b> <u>E.A. Robinson</u> and A.J. Dyakonov, Lorillard Tobacco Company, Greensboro, NC
8:50 AM	47	<b>Identification of Gas-Phase Free Radicals by Tandem Mass Spectrometry (MSMS).</b> <u>E.A. Robinson</u> and J.D. Johnson, Lorillard Tobacco Company, Greensboro, NC
9:10 AM	48	<b>Detection of Reactive Oxygen Species by DMPO Spin-Trapping Method in Aqueous Extract of Cigarette Smoke and Comparison with Model Reaction Systems.</b> <u>Yuichiro Takanami</u> , Japan Tobacco Inc., Yokohama, Kanagawa, Japan
9:30 AM	49	<b>Analysis of Hydrogen Sulfide, Carbonyl Sulfide, Methanethiol, Carbon Disulfide, Methyl Thiocyanate and Methyl Disulfide in Mainstream Vapor Phase Cigarette Smoke.</b> <u>Ji-Zhou Dong</u> and S. M. DeBusk, R. J. Reynolds Tobacco, Winston-Salem, NC
9:50 AM		BREAK
10:20 AM	50	<b>A New High Performance Liquid Chromatography - Fluorescence Detection Method for the Determination of Phenolic Compounds in Cigarette Smoke and Smokeless Tobacco Products.</b> <u>Jingcun Wu</u> and Bill Rickert, Labstat International ULC, Kitchener, Ontario, Canada
10:40 AM	51	<b>New Methodologies for Qualitative and Semi-Quantitative Determination of Carbon-Centered Free Radicals in Cigarette Smoke Using Liquid Chromatography-Tandem Mass Spectrometry and Gas Chromatography-Mass Selective Detection.</b> <u>Anthony Gerardi</u> and William Coleman, III, R. J. Reynolds Tobacco, Winston-Salem, NC
11:00 AM	52	<b>Qualitative and Relative Quantitative Determination of Carbon-Centered Free Radicals in Whole Smoke From Various Cigarette Types.</b> <u>Anthony Gerardi</u> and William Coleman, III, R. J. Reynolds Tobacco, Winston-Salem, NC
11:20 AM	53	<b>Development of an Analytical Method for the Simultaneous Determination of Trace Metals and Mercury in Mainstream Cigarette Smoke by ICP-MS.</b> <u>Yutaka Kuroki</u> , Shinya Yokoyama, Hisayuki Takahashi, and Masahiro Fujiwara, Japan Tobacco Inc., Yokohama, Kanagawa, Japan
11:40 AM	54	<b>Reducing the Nitrosamines Level of Smoke by Zeolites.</b> <u>Jian Hua Zhu</u> , Ying Wang, Ling Gao, Yang Xu, and Yi Cao, College of Chemistry and Chemical Engineering, Nanjing University, Nanjing, China
12:00 PM		ADJOURN

Time	Abstract	Title
8:30 AM	55	<b>Comparison of the Mutagenicity of Different Smoke Preparations and Whole Smoke Exposures in the AMES Assay.</b> <u>R. Leverette</u> , Lorillard Tobacco Co., Greensboro, NC
8:50 AM	56	<b>In Vitro Effects of Menthol on Cytochrome P450 Enzymes, Cytotoxicity and Genotoxicity Endpoints.</b> <u>R. Leverette</u> , Lorillard Tobacco Co., Greensboro, NC
9:10 AM	57	<b>Proteomic Analysis of Cigarette Smoke-Exposed Rat Lung Tissues in a Short-Term Study.</b> <u>C.A. Carter</u> and M. Misra, Lorillard Tobacco Company, Greensboro, NC
9:30 AM	58	<b>High Content Screening Analysis of Smoke Toxicity in Human Lung A 549 Cells Reveals Biomarkers of Oxidative Stress and Damage.</b> <u>M. Misra</u> , C.A. Carter, and R.D. Leverette, Lorillard Tobacco Company, Greensboro, NC
9:50 AM		BREAK
10:20 AM	59	<b>Cigarette Smoke Exposure Results in Hypertension, Leukocyte-Specific Reactive Oxygen Species (ROS) Generation, Endothelial Dysfunction, and Cardiac Hypertrophy in Mice.</b> <u>J.L. Zweier</u> , M.A. Hassan Talukder, W. Johnson, S. Varadharaj, J. Lian, P. Kearns, L. Druhan, X. Liu, and M.A. El-Mahdy, Center fo Environmental and Smoking Induced Diseases, Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH
10:40 AM	60	<b>Cigarette Smoke Exposure Dose-Dependently Alters the Activity, Coupling, Phosphorylation, and Expression of Endothelial Nitric Oxide Synthase in Endothelial Cells.</b> <u>J.L. Zweier</u> , Tse-Yao Wang, Lawrence J. Druhan, and Chun-An Chen, Center fo Environmental and Smoking Induced Diseases, Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH
11:00 AM	61	<b>Proteomic Analysis of Biomarkers for Smoking Induced Diseases in a Mouse Model.</b> <u>Arun K. Tewari</u> , Mohamed A. El-Mahdy, and Jay L. Zweier, Center fo Environmental and Smoking Induced Diseases, Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH
11:20 AM	62	<b>Effect of Temperature and Atmosphere on the Mutagenicity and Cytotoxicity of Smoke Condensate in Tobacco Pyrolysis.</b> <u>Yasunari Otsu</u> , Yoshimi Nishio, and Shinya Yoshida, Japan Tobacco Inc., Research Center, Yokohama, Kanagawa, Japan
11:40 AM		ADJOURN

Time	Abstract	Title
1:30 PM	63	<b>An improved Method for Vapor Phase Analysis Using ATD GC/MS.</b> <u>Jeremy K. Steach</u> , Eastman Chemical Co., Kingsport, TN
1:50 PM	64	<b>Accuracy of Tar Yield Determination and Intense Smoking Regimes.</b> <u>France Cote</u> and Jules Verreault, Imperial Tobacco Canada Limited, Montreal, Canada and F. Kelley St. Charles, St. Charles Consultancy, Winston-Salem, NC
2:10 PM	65	<b>The Performance of Superslims Carbon Filters at Different Smoking Regimes.</b> <u>Tony McCormack</u> and Mike Taylor, Filtrona Technology Centre, Jarrow, Tyne & Wear UK
2:30 PM	66	<b>Simultaneous Analysis of Twenty Underivatized Free Amino Acids in Tobacco by Liquid Chromatography / Electro spray Ionization Ion Trap Tandem Mass Spectrometry.</b> <u>Yi-Fei Huang</u> , Feng Li, and Jing Hu, China Tobacco Guangdong Industrial Co. Ltd., Guangzhou, China
2:50 PM		BREAK
3:20 PM	67	<b>A Novel Method for Analyzing Solanesyl Esters in Tobacco Leaves Using Atmospheric Pressure Chemical Ionization / Mass Spectrometry Detector (APC/MSD).</b> <u>Naoyuki Ishida</u> and Michinori Yokoi, Japan Tobacco, Inc., Yokohama, Kanagawa, Japan
3:40PM	68	<b>Estimation of Gas-Particle Partitioning of Menthol in Mainstream Cigarette Smoke Under Several Different Smoking Conditions.</b> <u>John Lauterbach</u> , Lauterbach & Associates, LLC, Macon, GA
4:00 PM	69	<b>Study on Characterization of Cut Tobacco Particle Size Distribution.</b> <u>Shen Xiao-Feng</u> <sup>1,2</sup> , Du Jin-Song <sup>2</sup> , Li Yue-Feng <sup>3</sup> , Li Hua-Jie <sup>3</sup> , Li Shan-Lian <sup>2</sup> , and Luo Deng-Shan <sup>2</sup> : <sup>1</sup> Hongyunhonghe Tobacco Group Co. Ltd. Kunming, China; <sup>2</sup> Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, China; <sup>3</sup> Technology Center of China Tobacco Fujian Industrial Corporation, Fujian, China
4:20 PM	70	<b>Characterization of a Novel Nicotine-Degrading Bacterium <i>Rhodococcus</i> sp. Y22 and its Metabolic Pathway.</b> <u>Duan Yangqing</u> <sup>1</sup> , Zeng Xiaoying <sup>1</sup> , Zhe Wei <sup>1</sup> , Gong Xiaowei <sup>2</sup> , Yang Jinkui <sup>2</sup> , and Li Qinghua <sup>1</sup> : <sup>1</sup> Technology Center, Hongyun Honghe Tobacco Co., LTD., Kunming, China; <sup>2</sup> Laboratory for Conservation and Utilization of Bio-Resources, Yunnan University, China
4:40 PM		ADJOURN

Time	Abstract	Title
1:30 PM	71	<b>Quantification of Nitrogen Content of Tobacco by Combustion (DUMAS) as an Improvement Over the Digestion (Kjeldahl) Methodology.</b> <u>N.J. Gale</u> , Group R&D, British American Tobacco, Southampton, UK
1:50 PM	72	<b>Enantiomer Composition of Nicotine Determined by Nicotine Demethylation.</b> <u>Bin Cai</u> , F. Fannin, A. Jack and L.P. Bush, Department of Plant and Soil Sciences, University of Kentucky, Lexington, KY
2:10 PM	73	<b>The Effect of a Green Burley Genotype on TSNA Accumulation.</b> <u>Anne Jack</u> <sup>1</sup> , Ramsey Lewis <sup>2</sup> , Carol Wilkinson <sup>3</sup> , Richard Hensley <sup>4</sup> , Xiaolong Li <sup>1</sup> , Neil Fannin <sup>1</sup> and Lowell Bush <sup>1</sup> ; <sup>1</sup> University of Kentucky, Lexington, KY; <sup>2</sup> North Carolina State University, Raleigh, NC; <sup>3</sup> Virginia Polytechnic Institute, Blacksburg, VA; <sup>4</sup> University of Tennessee, Greeneville, TN
2:30 PM	74	<b>AFLP Analysis of Genetic Diversity of Tobacco Germplasms.</b> <u>Du Chuanjin</u> , Han Zhizhong, Yang Xuliang, Wang Xigong, Zhou Jian: Shandong Weifang Tobacco Corporation, Weifang Shandong, China; Tian Jichun, State Key Laboratory of Crop Biology, Shan Dong Agricultural University, Tai'an Shandong, China; Liu Hongxiang, Qingzhou Tobacco Research Institute of China National Tobacco Corporation, Qingdao, Shandong, China
2:50 PM		BREAK
3:20 PM	75	<b>Sequence Characterization and Basic Expression Analysis of Gras Gene Family in Tobacco Using NTL5 Gene.</b> <u>Shuaishuai Tai</u> , Yuhe Sun, Guanshan Liu, Weifeng Wang, and Daping Gong: Key Laboratory for Tobacco Quality Control Ministry of Agriculture, China; Tobacco Research Institute, Chinese Academy of Agricultural Sciences, Qingdao, Shandong, China
3:40PM	76	<b>Cluster Analysis of Flue-Cured Tobacco Leaves from Different Production Regions According to the Chemical Components Correlating with Aroma Types.</b> <u>Chang Aixia</u> <sup>1</sup> , Zhang Jianping <sup>2</sup> , Du Yongmei <sup>1</sup> , Wang Shusheng <sup>1</sup> , Jia Xinghua <sup>1</sup> , Fu Qiujuan <sup>1</sup> , Zhang Jun <sup>2</sup> , Liu Hongxian <sup>1</sup> : <sup>1</sup> Tobacco Research Institute of CAAS, Qingdao, China; <sup>2</sup> Shanghai Tobacco Corporation, Shanghai, China
4:00 PM	77	<b>Responses of Antioxidation Enzymes to Chilling Stress in Tobacco Seedlings.</b> <u>Yong-Ping Li</u> , Yun-Ye Zheng, and Wen-Guang Ma, Yunnan Tobacco Research Institute, Yunnan, Yuxi, China
4:20 PM	78	<b>Study of influencing Factors on Heavy Metals in Tobacco Planting Soil and Flue-Cured Tobacco.</b> <u>Yang Jie</u> <sup>1</sup> , Chen Jiang-Hua <sup>2</sup> , and Li Jin-Ping <sup>3</sup> , Zhang Yan-Ling <sup>1</sup> , Zhang Shi-Xiang <sup>1</sup> , <sup>1</sup> Zhengzhou Tobacco Research Institute of CNTC, Henan, China; <sup>2</sup> China National Leaf Tobacco Corporation; <sup>3</sup> Hubei Tobacco Science Institute
4:40 PM	79	<b>Genetic Dissection of Important Traits in Burley Tobacco.</b> <u>Changchun Cai</u> , Liguang Chai, Yi Wang, Fangsen Xu, and Guoping Lin, Burley Tobacco Experimental Station of CNTC, Hubei Tobacco Research Institute, Wuhan, Hubei Province, China
5:00 PM		ADJOURN

## Wednesday, September 30, 2009 - Morning, Combined Session

Session Chair: Balazs Siminsky

Time	Abstract	Title
8:30 AM	80	<b>Development of a Method for the Mass Spectrometric Analysis of 4-Hydroxy-1-(3-Pyridyl)-1-Butanone (HPB) in Various Cell Lines.</b> <u>J.E. Tarrant</u> , D. Skinner, and A. Flores, Lorillard Tobacco Co., Greensboro, NC
8:50 AM	81	<b>Characterization of Reference and Commercial Moist Snuff Samples by Use of Two GC-MS Scan Techniques.</b> <u>John H. Lauterbach</u> , Lauterbach & Associates, LLC, Macon, GA and Deborah A. Grimm, Coordinated Instrumentation Facility, Tulane University, New Orleans, LA
9:10 AM	82	<b>Influence of Puff Volume on Adsorption Efficiency of Activated Carbon for Volatile Organic Compounds in Cigarette Smoke.</b> <u>Noritoshi Fujita</u> and Ken-Ichi Itabashi, Japan Tobacco Co., Yokohama, Kanagawa, Japan
9:30 AM	83	<b>Determination of Pressure Drop Response from Triacetin Plasticizer Application on Cellulose Acetate Filters.</b> <u>Kevin Norfleet</u> , Celanese Acetate LLC, Narrows, VA
9:50 AM		BREAK
10:20 AM	84	<b>Switching from Usual Brand Cigarettes to a Tobacco Heating Cigarette or Snus - A Multi-Center Evaluation of Biomarkers of Exposure and Harm.</b> <u>M.W. Ogden</u> , M.F. Stiles, B.A. Jones, T.J. Steichen, and W.T. Morgan, R.J. Reynolds, Winston-Salem, NC
10:40 AM	85	<b>Studies on Post-Synthesized Amine-Functionalized Material for Reducing Volatile Carbonyl Compounds in Cigarette Smoke.</b> <u>Cong Nie</u> <sup>1</sup> , Le Zhao <sup>1</sup> , Bin Peng <sup>1</sup> , Xuehui Sun <sup>1</sup> , Huimin Liu <sup>1</sup> , and Xuewu Yan <sup>2</sup> , <sup>1</sup> Zhengzhou Tobacco Research Institute of China National Tobacco Corporation, Zhengzhou, China; <sup>2</sup> Nanjing University of Science and Technology, Nanjing, China
11:00AM	86	<b>Rapid Resolution Liquid Chromatography as Second Dimension in a Comprehensive Two-Dimensional System for Analyzing Tobacco Extracts.</b> <u>Li Ding</u> <sup>1</sup> , Fuwei Xie <sup>1</sup> , Degke Hou <sup>1,2</sup> , Huimin Liu <sup>1</sup> , Shusheng Zhang <sup>2</sup> , <sup>1</sup> Zhengzhou Tobacco Research Institute of China National Tobacco Corporation, Zhengzhou, China; <sup>2</sup> Chemistry Department of Zhengzhou University, Zhengzhou, China
11:20 AM	87	<b>Complete Nucleotide Sequence and Genome Organization of Tobacco Vein Distorting Virus.</b> <u>Mo Xiaohan</u> <sup>1</sup> and Chen Jianping <sup>2</sup> , <sup>1</sup> Yunnan Tobacco Science Institute, Yuxi, Yunnan, China <sup>2</sup> Institute of Virology and Biotechnology, Zhejiang Academy of Agricultural Sciences, Hangzhou, China
11:40 AM		ADJOURN