

Dr. Yehia E. El Mogahzy

WestPoint Stevens Distinguished Professor

**Professor of Textile Engineering
Professor of Statistics & Quality Control
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Positions Held Since 1986:

- 2000-Present: WestPoint Distinguished Professor (Auburn University)
- 1992-Present: Professor of Statistics and Quality Engineering (College of Engineering-Auburn University)
- 1996-Present: Professor of Textile Engineering (Auburn University)
- 1999-2002: Technical Editor of the Journal of Cotton Science (<http://journal.cotton.org/>)
- 1992-2001 Technical Advisor of Quality Tech Co. Atlanta, U.S.A. (qualitytech_2002@yahoo.com)
- 2002-2003: Site-Director of the National Textile Center (<http://www.ntcresearch.org>)
- 1992-1996: Associate Professor of Textile Engineering (Auburn University)
- 1986-1992: Assistant Professor of Textile Engineering (Auburn University)
- 1980-1986: Research Associate of Fiber & Polymer Science (North Carolina State University)
- 1978-1980: Assistant Teacher of Textile Engineering (Alexandria University, Egypt)
- 1975-1978: Research & Teaching demonstrator (Alexandria University, Egypt)

EDUCATION:

- Ph.D., Fiber & Polymer Science, NCSU, College of Textiles, Raleigh, N.C., U.S.A, 1986
- Certified Trainer & Educator ISO 9000 & Six-Sigma: Quality Tech Academy of Statistics, 1998
- MS, Textile Engineering, Alexandria University College of Engineering, Alexandria, Egypt, 1978
- BS, Textile Engineering, Alexandria University College of Engineering, Alexandria, Egypt, 1975

ACADEMIC & INDUSTRIAL ACCOMPLISHMENTS:

- Author of the Book: "Statistics and Quality Control for Engineers and Manufacturers: From Basic to Advanced Topics" Published by Quality Press. 1st & 2nd Editions. This book sold a record of 3100 copies and was adopted by Professors of four U.S. Universities for teaching Statistics and Quality Control since 2000
- Co-author of the Book "Cotton Fiber To Yarn Manufacturing Technology" with Mr. Charles Chewning, Jr. (Vice President of Cotton Incorporated) as a co-author. Published by Cotton Incorporated (cottoninc.com)
- Author of 5 book chapters
- Author of 44 refereed papers in top scientific journals
- Author of numerous conference presentations and proceedings
- Pioneer of the concept and theory of "Superiority Competitive Quality Triangle" implemented in many global competitive strategies around the world
- Pioneer of the concept of "Unified Comfort Index-A-Ratio), which translate the complex subjective human judgment of comfort into quantitative and objective measure
- Pioneer of the Loss/Quality Control Chart
- Developer of QT-Mix Optimization Software Program
- Developer of "Business Exponential-Smoothing/Judgmental Forecasting" Software Program
- Co-Inventor of the patented "Magnetic Ring Spinning"-International PCT Patent, PCT/US03/30317, filling date: September 23, 2003. With Dr. F. Hady, co-inventor.

RESEARCH ACTIVITIES:

SELECTED RECEIVED GRANTS AND CONTRACTS AS A PRINCIPAL INVESTIGATOR

- **2000-2003:** "Developing Design-Oriented Comfort Model"-Leader of a team of four universities Sponsor: National Textile Center (NTC)-\$863,000 (<http://www.ntcresearch.org>)
- **2000-2003:** "Design of Pioneer Magnetic Spinning"National Textile Center (NTC)-\$684,000 (<http://www.ntcresearch.org>)
- 1997-2000:"An Integrated Approach to Added-Value Reclamation of Solid Waste"NSF/EPSCoR, 5 Universities involved. Total grant \$3.2 million
- **1996-1999:** "Finger-Printing & Quality Backward Projection"National Textile Center (NTC) Leader of a team of three universities-\$1.2 million (<http://www.ntcresearch.org>)
- **1994-1997:**"The Use of Continuously Monitored Data in Product Improvement.Phase I & II.National Textile Center (NTC)-\$687,000
- **1993-1996:**"Cotton Fiber Quality: Characterization, Selection, and Optimization" National Textile Center (NTC), \$923,000 (<http://www.ntcresearch.org>)
- **1993-1994:** "The Use of Instrumental Analysis to Determine the Quality Characteristics and Processing Performance of Reclaimed Fiber Mixtures"National Textile Center (NTC), \$75,000
- **1993-1994:** "The Use of Continuously Monitored Data in Product Improvement. Phase I. National Textile Center (NTC) \$220,000
- **1990-1992:** "Surface Properties of Cotton Fibers" Cotton Inc. (<http://www.cottoninc.com>) \$50,000
- 1990-1991: "Dynamic Analysis of Balloon Configuration in Ring Spinning"USDA-ARS-SRRC. USDA-58-6435-1-132, \$25,000
- **1987-1990:** "Semi-Automated Regression Methodology" Cotton Inc. CTN INC-90-694-91 (<http://www.cottoninc.com>) \$85,000
- More Projects can be seen in (<http://www.eng.auburn.edu/~yehiae/>)

SELECTED PUBLICATIONS:

BOOK CHAPTERS:

1. "Cotton Fibers-Developmental Biology, Quality Improvement, and Textile Processing"-Chapter 12: Fiber-to-Fabric Engineering: Optimization of Cotton Fiber Quality"-Book Edited by Amarjit S. Basra, and Published by Haworth Press, Inc., NY, Oxford, 1999
2. "Wellington Sears Handbook of Industrial Textiles"-Chapter 3/Section 3.3: "Manufacturing of Staple Yarns" Wellington Sears Handbook of Industrial Textiles. Published by Technomic Publishing Co., Inc., Lancaster. Basel, 1995
3. "Ergonomics of Hybrid Automated Systems I". Chapter IX. Factory Automation: Ergonomics and Occupational Health Issues: Implementation of On-Line Fiber Analysis in the Textile Industry. Edited by W. Karwowski, H.R. Parsaei, and M.R. Wilhelm. Published by Elsevier Science Publishers B. V. [Amsterdam, Oxford, New York, Tokyo], 1988 with Dr. Morton Reed and Dr. W. K. Lynch as co-authors.

REFEREED PAPERS:

1. El Mogahzy, Y., "An Integrated Approach to the Analysis of the Nature of Multi-Component Fiber Blending. Part I: Theory of Multi-Component Blending", Accepted for publication by Textile Research Journal, Expected Date October 2004
2. El Mogahzy, Y., Farag, R., Abdelhady, F., Mohamed, A., An Integrated Approach to the Analysis of the Nature of Multi-Component Fiber Blending. Part II: Evaluation of Structural and Attributive Blending of Cotton/Polyester Blends, Accepted for publication by Textile Research Journal, Expected Date November 2004
3. EL Mogahzy, Y.E., Broughton, R., Guo, H., and Taylor, R. A., Evaluating Staple Fiber Processing Propensity, Part I: Processing Propensity of Cotton Fibers, Textile Res. J., 68(11), 835-840, 1998.
4. EL Mogahzy, Y.E., Broughton, R., Guo, H., and Rollins, C., Evaluating Staple Fiber Processing Propensity, Part II: Processing Propensity of Cotton/Polyester Blends, Textile Res. J., 68(12), 907-912, 1998.
5. Theory and Practice of Cotton Fiber Selection, Part I: Fiber Selection Techniques and Bale Picking Algorithms. Textile Research Journal, Vol. 64, No. 2, 32-40 (1995)/Yasser Gawayed Co-author.
6. Theory and Practice of Cotton Fiber Selection, Part II: Sources of Cotton Mix Variability and Critical Factors Affecting it. Textile Research Journal, Vol. 65, No. 2, 75-84 (1995)/Yasser Gawayed Co-author.
7. The Friction Profile of Cotton Fibers and its Importance in Determining Fiber Performance in the Nonwoven Process. Part I: Fundamental Aspects of Fiber Friction and Lubrication. International Nonwoven Journal, Vol. 6, No. 4, pp 35-42, 1995/Qin Wang and Roy Broughton Co-authors.
8. The Friction Profile of Cotton Fibers and its Importance in Determining Fiber Performance in the Nonwoven Process. Part II: Experimental Observations. International Nonwoven Journal, Vol. 7, No. 1, pp 26-33, 1995/Qin Wang and Roy Broughton Co-authors.
9. The Frictional Behavior of Nonwoven Geotextiles in Granular Soils. International Nonwoven Journal, Vol. 6, No. 4, pp 66-71, 1995/Y. Gawayed & Lyndi Mayo Co-authors.
10. Preparatory Processing Performance and Blending Efficiency of Cotton Fibers. Melliand Textiles (English/German Edition), Vol. 4, pp E52-E55, G212-G218, 1995/Roy Broughton Co-author.
11. Theory of Soil/Geotextile Interaction. Textile Research Journal, Vol. 64, No. 12, 744-754 (1995)/Yasser Gawayed and David Elton Co-authors.

12. A New Approach for Evaluating the Frictional Behavior of Cotton Fibers. Part I: Fundamental Aspects and Measuring Techniques. Textile Research Journal, Vol. 63, No. 8, 465-475 (1993)/Roy Broughton Co-author.
13. Friction in Fibrous Materials, Part II: Experimental Study of the Effects of Structural and Morphological Factors, Textile Research Journal, Vol. 63, No. 4, 219-230 (1993)/B.S. Gupta Co-author.
14. The Measurement of Fiber Friction and its Importance in Manufacturing Cotton Nonwovens. Tappi Journal, Vol. 76, No.2, 178- 182(1993)/Roy Broughton Co-author.
15. Optimization of Cost of Cotton Blend with Respect to Quality Using HVI Fiber Properties and Linear Programming. Part I: Fundamentals and Advanced Analyses of Linear Programming. Textile Research Journal, Vol. 62, No. 1, 1-8 (1992)
16. Optimization of Cost of Cotton Blend with Respect to Quality Using HVI Fiber Properties and Linear Programming. Part II: Combined Effects of Fiber Properties and Inclusion of Variability Constraints. Textile Research Journal, Vol. 62, No. 2, 108-114 (1992)
17. On the Mechanics of Yarn Failure, Textile Research Journal, Vol.62, No. 3, 131-134 (1992). Co-author with Roy Broughton and David Hall.
18. Regressional Observations of HVI Fiber Properties, Yarn Quality, and Processing Performance of Medium Staple Cotton, Part I: HVI Fiber Parameters. Textile Research Journal, Vol. 62, No. 4, 218-226 (1992). Roy Broughton co-author.
19. Effect of Creep-Related Overdrying in Sizing on Warp Characteristics and Weaving Performance. Textile Research Journal, Vol. 62, No. 6, 317-324 (1992). Co-author Warren Perkins.
20. Using Off-Line Quality Engineering in Textile Processing. Part I: Concepts and Theories. Textile Research Journal, Vol. 62, No. 5, 266-274 (1992).
21. Friction in Fibrous Materials. Part I: Structural Model. Textile Research Journal, Vol. 61, No. 9, 547-555 (1991). Co-author with B.S. Gupta.
22. A Statistical Approach for Determining the Technological Value of Cotton Using HVI Fiber Properties. Textile Research Journal, Vol. 60, No. 9, pp 495-500. Sept. 1990, with Broughton and Lynch co-authors.
23. Diagnostic Procedures for Multi-collinearity Between HVI Cotton Fiber Properties. Textile Research Journal, Vol. 59, No. 8, pp 440-447. August 1989, with Broughton co-author.
24. More Effective Utilization of Cotton Fiber Inventories and Related Findings. Journal of the Textile Institute, London, England. Vol. 56, No. 14, pp 1-7, September 1989. Co-author with Broughton and Lynch.
25. The Effect of Hot-Wet Draw Ratio on the Coefficient of Friction of Wet-Spun Acrylic Yarns. Journal of Applied Polymer Science. Vol. 38, 899-905 (1989). Co-author with Selivansky and Gupta.
26. Selecting Cotton Fiber Properties for Fitting Reliable Equations to HVI Data. Textile Research Journal, Vol. 58, No. 7, 392-397 (1988).

SELECTED PROCEEDINGS AND CONFERENCES ARTICLES

- El Mogahzy, Y., Making the Best Cotton Mixes: The Role of New Technology, EFS System Conference, Cotton Inc., April 2000.
- El Mogahzy, Y., How the Machine Maker Deals with the Issue of Short-Fiber Content (ITMA 99 Perspective), Cotton Beltwide Conference, San Antonio, TX, January 2000.
- El Mogahzy, Y., Cotton Blending: How the EFS System Can Help in Producing Optimum Yarn Quality, Eleventh Annual Engineer Fiber Selection® System Conference, <http://www.cottoninc.com>, June 8, 9, 10, 1998.
- El Mogahzy, Y. E., Production of Fabric Comfort by Design, Poster Presentation in the 9th NTC Annual Conference, Martyle Beach, SC., 2000.
- El Mogahzy, Y., Variability-In/Variability-Out, A paper presented in the 11th Annual EFS® Research Forum, Cotton Inc. U.S.A., Raleigh, NC, 1998.

- El Mogahzy, Y., "The Theory and the Practice of Understanding Fabric Comfort", Proceedings of Textile Science, 98 Conference, Technical University of Liberec, Czech Republic, 1998.
- El Mogahzy, Y. Edwards, J., Isaac, N., and Robert, S. An International Survey of Consumer Needs and Wants, Report submitted to the Global Cycle Consultant (GCC) Group, Washington D.C., 1998.
- El Mogahzy, Y. E., Thoughts on the Variability Conservation Law, A paper presented in ITT BI-Annual Meeting, Charlottesville, VA, 1996.
- El Mogahzy, Y., Fiber-to-Yarn Engineering in the Era of Information Technology, A Presentation to Zellweger Uster Engineering Group, Knoxville, TN, U.S.A., July 1996.
- Fiber Selection: Theory & Practice. Proceedings of EFS 8th Research Forum, Raleigh Nc., Nov. 1995.
- Fiber Profile Through Processing. Proceedings Beltwide Cotton Conference, presented in January, 10, 1995.
- Fiber/machine Interaction. Proceedings Beltwide Cotton Conference, presented in January, 14, 1994.
- El Mogahzy, Y. E., Utilization of Cotton/Micro-Denier Polyester Blends in Air-Jet Spinning, Paper presented in Textile World Microdenier Fibers Conference, Greenville, SC, June 1-2, 1994.
- Quality Engineering in Cotton Textile Processing, Proceedings Beltwide Cotton Conference, presented in January, 14, 1993.
- Analysis of Continuously Monitored Data. Part II. Proceedings of Fifth Annual Fiber-Yarn-Fabric Forecasting Research Forum. presented in November, 1993.
- El Mogahzy, Y., and Pigg, J., Comparison of Yarn Diameters Produced on Ring, open-end, and Air-Jet Spinning, Paper presented in the Technology Update Conference, Auburn university Hotel and Conference Center, 1993.
- El Mogahzy, Y., Handling of On-Line Signals During Textile Processing, Proceedings of the 5th EFS® Research Forum, pp 119-167, 1992.
- Analysis of Continuously Monitored Data. Part I. Proceedings of Fourth Annual Fiber-Yarn-Fabric Forecasting Research Forum. presented in November, 1992.
- The Role of Fiber Friction in the Analysis of Yarn Quality, Proceedings Beltwide Cotton Conference, Volume 1, pp 889-894, 1991. Broughton co-author.
- Fiber-Yarn-Fabric Data Base Construction. Proceedings of the Third Annual Engineered Fiber Selection, 1990.
- Fiber Yarn Modeling: The Theory and the Practice. Proceedings of Second Fiber-Yarn-Fabric Forecasting Research. Vol. 2, PP 102-116. Nov. 1989.
- Selection of Cotton Fiber Properties for Use in Models of Yarn Strength. Proceedings of Industrial Fabric Association International. Vol. 76, pp 145-152, November 1988. with Broughton and Lynch co-authors.
- Visualization of relationships among cotton fiber properties. Proceedings of Cotton Textile Council, No. 79, October 1988 with Broughton, Lynch, and Meddera co-authors.

PH.D. THESIS COMPLETED UNDER DR. EL MOGAHZY'S SUPERVISION (SINCE 2000):

- Samy, A., "Developing Judgmental Business Forecasting System" Auburn University, 2004.
- Kilinc, F. "Developing Design Oriented Comfort Model" Auburn University, 2004.
- Hassan, M., "Surface Characterization of Fabrics", Channel-System, Al Mansourah University, Egypt, 2004
- Kamel, A., Pioneering Organizational Competitive Quality Strategy through the Use of "Quality Superiority Triangle", Auburn University, 2001.

- Mohamed, A., A Study of the Nature of Multiple-Component Fiber Blending, A Ph.D. dissertation under the supervision of Dr. El Mogahzy, Auburn University, 2002.

TEACHING ACTIVITIES

COURSES TAUGHT BY EL MOGAHZY:

- Statistics for Engineering & Scientists
- Statistical Quality Control
- Integrated Quality Control from Fibers to Apparels
- Fiber-to-Yarn Engineering
- Yarn Forming Systems: Part I
- Yarn Forming Systems: Part II

VIDEO-BASED COURSES: (PRODUCED BY QUALITY TECH AND TAUGHT BY EL MOGAHZY)

1. Integrated Competitive Quality Program (10 hour-Video Course)
2. Quality Control: From Statistical Process Control to Six-Sigma (15 hour-video course)
3. Testing of Materials-Analytical Thoughts and Practical Ideas (12 hour-video course)
4. Fundamentals of Textiles (10 hour-video course)
5. Fiber-To-Fabric Engineering (20 hour-video course)

SIGNIFICANT HONORS AND AWARDS

- “WestPoint Distinguished Professor Award” (\$30,000 Award and Chair Professorship, 2000)-Auburn University, U.S.A.
- “Birdsong Endowment Distinguished Engineering Professor” (\$6000 Award, 1999)-Auburn University, U.S.A.
- “Tessili Distinguished Research Award” (\$15000 Award, 1988, The Italian Trade Commission, Italy)
- “Outstanding Teacher of the Year Award”, Auburn University, College of Engineering, 1996-2000

INTERNATIONAL ACTIVITIES & MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- International Recognition around the world (<http://www.eng.auburn.edu/~yehiae/>)
- Member of Fiber Society, U.S.A.
- Member of Textile Institute, England
- Member of Statistics Academy, U.S.A.
- Consultant for Companies in Italy, Mexico, Pakistan, Colombia, and Japan
- Member of the executive committee of the Textile Engineering Division of the American Society of Mechanical Engineering (ASME).
- Member of the American Society for Quality Control (ASQC)
- Member of the Textile Quality Control Association
- In 1993, El Mogahzy presented a paper on Quality Engineering in the Textile Process in the second International Textile Conference in the Technical University Liberec, Czech Republic.
- In 1995, Dr. El Mogahzy was invited to present a paper on Fiber Friction and Lubrication in China Textile University (CTU).
- Consultant to SENA Textile Organization. Colombia, South America, 1995-1996

- Consultant to the Italian Trade Commission for a study on the impact of world economy on yarn technology (1989).
- Consultant to the United Nation in a project concerning establishing a program of textile education and training for under-developing countries May-August, 1987.