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## Curriculum Vitae

Eunyoung Shim, Ph. D.

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### Educations

- 2001 Ph. D. in Fiber and Polymer Science, North Carolina State University, Raleigh, NC  
Thesis topic: A study of spin finish application on fibers
- 1996 M. S. in Clothing and Textiles, Seoul National University, Seoul, Korea  
Thesis topic: The effect of softening finish of cellulase on BTCA treated cotton fabrics
- 1994 B. S. in Clothing and Textiles, Seoul National University, Seoul, Korea  
Thesis topic: Comparing the performance of commercial hosiery

### Professional Experiences

- 01/2001 - present Research Associate, North Carolina State University, Raleigh, NC
- Conducting researches and preparing research proposals. Research topics are biopolishing of fibers and nonwoven fabrics, Electro-textiles, Finishes and surface characteristics, Opacity of nonwoven fabrics, Wipes, and Filters.
  - Managing Surface Science & Image Analysis Lab
  - Managing Laser Scanning Confocal Microscopy Lab
  - Assisting, training and supervising graduate students
  - Test and analysis for textile industries
- 10/1/2002 - 10/4/2002 Instructor, Quantitative Microscopy & Image Analysis NCRC Workshop, Raleigh, NC
- Lecture topics:
    - Light and Lenses
    - Light Microscopy
    - Fluorescence Microscopy
    - Principles and applications of Laser Scanning Microscope in Textiles
    - Contact Angle Analysis of Drops on Fibers
- 01/1998 - 12/2000 Research Assistant, North Carolina State University, Raleigh, NC
- Research Topic: A study of spin finish application on fibers
  - Management of the Laser scanning confocal microscope
- 01/1996 - 06/1997 Academic Program Assistant, Department of Clothing and Textiles, Seoul National University, Seoul, Korea
- Assisting student academic affairs
  - Lecture undergraduate classes when requested by supervisor (Topics: Introductory Textile Science, Textile Testing)

- 03/1994 - 02/1995      Teaching Assistant, Department of Clothing and Textiles, Seoul National University, Seoul, Korea
- Responsible courses: Textile Fabrics, Textile Fibers, Fiber Science Laboratory, Textile Testing, and Dyes and Dyeing Laboratory
  - Management of Textile Science Lab
- 01/1995 - 02/1995      Internship program, KITEC, Suwon, Korea
- Evaluation of the mechanical properties of interlining fabrics with Kawabata system and FAST system
- 07/1998                  Internship program, Korea Industrial Properties Office, Kwachun, Korea
- Standard testing method of physical properties of textiles
  - Application of dye and finish on textile goods

### Grant & Projects

*Grant awarded (Co PI with Dr. B. Pourdeyhim):*

06/2003 - present	P&G	Enzymatic fiber modifications
01/2002 - present	Novozyme	Biopolishing hydroentangled nonwoven fabrics

*Projects worked:*

05/2003 - present	P&G	Optical properties of nonwoven fabrics
03/2003	P&G	Technology review- Enzyme use in textile and pulp industry
01/2001 - 12/2002	DARPA	Electro-textiles: Textile batteries & Fuel Cell, Circuit printing, Interconnect, and Conductive fibers
01/1998 - 05/2001	NCRC	A fundamental study of finish application

### Awards, honor and Professional Membership

- Student award for original research paper submitted in the year 2000, The Fiber Society
- A member of The Fiber Society
- A member of The Honor Society of Phi Kappa Phi

### Research Interests

- Textile finish applications
- Applications of textiles in electronic devices
- Wetting properties and surface science
- Fiber coating
- Material characterization with optical methods
- Nonwoven product development

### Conference Presentations and Proceedings

1. E. Shim, M. Srinivasarao, and B. Pourdeyhim, Spin finish application on fibers, Fiber Society Fall Meeting, Oct. 14-16, 2003 in Raleigh, NC

2. E. Shim, B. Pourdeyhimi, and T. J. Little, Luminance and mechanical properties of photoluminescent core bicomponent fibers, Oct. 14-16, 2003 in Raleigh, NC
3. E. Shim, M. Srinivasarao, and B. Pourdeyhimi, Rayleigh instability development in fiber finishing, International Nonwovens Technical Conference (INTC) Conference Proceedings, 2001
4. E. Shim, M. Srinivasarao, and B. Pourdeyhimi, A study of spin finish application on fiber, Fiber Society Spring Meeting, May 23-25, 2001 in Raleigh, NC
5. E. Shim, M. Srinivasarao, and B. Pourdeyhimi, On the measurement of contact angle of droplets on fibers, Fiber Society Spring Meeting, May 23-25, 2001 in Raleigh, NC
6. E. Shim, M. Srinivasarao, J. O. Park, Forced wetting on the curved surfaces, Material Research Society Fall Conference, November 27-31, 2000 in Boston, MA
7. E. Shim and M. Srinivasarao, Uniform coating of fibers: Film formation and its stability, Gordon Research Conference on Fiber Science, July 4-9, 1999 in New London, NH
8. E. Shim, M. Srinivasarao, Use of laser scanning confocal microscopy in the study of finish application, Fiber Society International Meeting, July 5-10, 1998, in Ashville, NC
9. E. Shim & H. S. Ryu, The softening effect of cellulase on BTCA treated cotton fabrics, The 213<sup>th</sup> National Meeting of American Chemical Society, April 16, 1997 in San Francisco, CA

### Publications in Peer-Reviewed Journal

1. E. Shim, B. Pourdeyhimi, and T. Little, Luminant and mechanical properties of photoluminescent core bicomponent fibers, accepted, Textile Research Journal
2. B. Pourdeyhimi, O. B. Berkalp, and E. Shim, A note on jet streaks in hydroentangled nonwovens, in preparation.
3. E. Shim and M. Srinivasarao, Fiber coating with non-wetting fluid, in preparation.
4. E. Shim, M. Srinivasarao, and B. Pourdeyhimi, The contact angle measurement on fibers, in preparation.
5. E. Shim, M. Srinivasarao and J. O. Park, Basic aspects of fiber coating, in preparation.

### Technical Reports

1. E. Shim and B. Pourdeyhimi, Opacity of Nonwoven Fabrics, Progress report 2: Measurement Methods, Prepared for P&G, 2003
2. E. Shim and B. Pourdeyhimi, Opacity of Nonwoven Fabrics, Progress report 1: Opacity Fundamentals, Prepared for P&G, 2003
3. E. Shim and B. Pourdeyhimi, Biopolishing Review, Prepared for P&G, 2003
4. B. Pourdeyhimi, W. Oxenham, P. Fedkiw, E. Shim and N. Dani, Flexible textile fuel cell development, Prepared for DARPA, 2002
5. B. Pourdeyhimi, W. Oxenham, P. Fedkiw, E. Shim and N. Dani, Textile Battery, Prepared for DARPA, 2002
6. M. Srinivasarao, E. Shim, and T. Profitt, A fundamental study of finish application, NCRC IAB Annual Report, 1998
7. E. Shim, M. Srinivasarao, J. O. Park, B. Pourdeyhimi and T. Profitt, A fundamental study of finish application, NCRC IAB Annual Report, 1999
8. E. Shim, M. Srinivasarao, B. Pourdeyhimi and T. Profitt, A fundamental study of finish application, NCRC IAB Annual Report, 2000

## Others

### *Invention disclosure:*

1. B. Pourdeyhimi and E. Shim, Illumination system for imaging droplets on fibers for the correct measurement of contact angle
2. B. Porudeyhim, W. Oxenham, P. S. Fedkiw, E. Shim, and N. Dani, Process for manufacturing yarn fuel cell
3. B. Porudeyhimi, W. Oxenham, P. S. Fedkiw, E. Shim, and N. Dani, Process for manufacturing flexible fuel cells by laminating
4. B. Porudeyhimi, W. Oxenham, T. J. Little, A. M. Seyam, E. Shim, and N. Dani, Electric current producing non-woven structures
5. B. Porudeyhimi, W. Oxenham, T. J. Little, A. M. Seyam , E. Shim, and N. Dani,, Three dimensional textile structure capable of producing electrical signals
6. B. Porudeyhimi, W. Oxenham, T. Little, A. M. Seyam, E. Shim, and N. Dani,, Textile Yarn structure capable of producing electric current