

**Academic History**

Name: Suraj Sharma  
Present Rank: Professor,  
Department of Textiles, Merchandising, and Interiors (TMI),  
College of Family and Consumer Sciences (FACS),  
University of Georgia (UGA)  
Academic Degrees: Ph.D. Materials Science and Engineering, 2008, Clemson University  
M.S. Textile Engineering, IIT Delhi, India, 1996  
B.E. Textile Technology, University of Rajasthan, India, 1994  
Web: <https://www.fcs.uga.edu/tmi/innovative-materials-research-team>

**Academic Positions and Other Professional Employment:**

- Professor of Polymer, Fiber and Textile Sciences, University of Georgia, August 2020 – present
- Associate Professor of Polymer, Fiber and Textile Sciences, University of Georgia, July 2015 – July 2020
- Graduate Coordinator, Department of Textiles, Merchandising & Interiors, University of Georgia, August 2016 –
- Undergraduate Coordinator, Department of Textiles, Merchandising & interiors, University of Georgia, August 2015 – July 2016
- Graduate Faculty, Department of Textiles, Merchandising & Interiors, University of Georgia, August 2009 – present
- Program Coordinator, (Bioenergy Systems Research Institute), University of Georgia, 2015 – 2016
- Member, New Materials Institute, University of Georgia, 2016 – present
- Assistant Professor of Polymer, Fiber and Textile Sciences, University of Georgia, July 2008 – June 2015
- Graduate Research Assistant, Department of Materials Science and Engineering, Clemson University, July 2004 – July 2008
- Instructor, Department of Materials Science and Engineering, Clemson University, August 2006 – December 2006
- Graduate Teaching Assistant, Department of Materials Science and Engineering, Clemson University, August 2004 – July 2006
- Lecturer, Institute of Technology for Textile, Garment & Fashion Design, Bahirdar University, Bahirdar, Ethiopia, September 2000 – December 2003
- Manager (Quality Assurance), Winsome Yarns Limited, India, Jan 2004 – May 2004
- Executive (Research & Development), Cheema Spintex Limited, India, Sept 1998 – Sept 2000
- Officer (Research & Development), Aarti International Limited, India, June 1997 – Aug 1998

**Editorial Board:**

Editorial Board member, ASTM Journal of Testing and Evaluation, 2018- present

**Publications****Book Chapters**

1. Uddin, M. M.; Dip, T. M.; Sharma, S. Wearable Nanogenerators. In Nanogenerators, CRC Press, 2022.
2. Rani, G. U.; Sharma, S. Biopolymers, Bioplastics and Biodegradability: An Introduction. In Reference Module in Materials Science and Materials Engineering, Elsevier, 2021.

3. Sharma, S., Jones, A., Mani, S. (2019). A life cycle assessment of protein-based bioplastics for food packaging applications. *Industrial Applications of Biopolymers and their Environmental Impact*. Mamun, A. and Chen, J. (Editors). CRC press.
4. Sharma, S., Mandal, A., Wang, K. (2016). Modification of protein rich algal-biomass to form bio-plastics and odor removal. *Waste-derived proteins: Transformation from environmental burden into value-added products*. Dhillon, Ed. Elsevier Publisher.
5. Sharma, S. and Dhandapani, R. (2014) Environmentally benign pretreatments for producing microfibrillated cellulose fibers from hemp. Yang, Y. (Ed., University of Nebraska): ACS Book: "Lightweight Materials from Biopolymers and Biofibers." Published by the American Chemical Society.
6. Sharma, S., Ayton, E., Zeller, M.A., Hunt, R., and Jones, A. (2014). Biodegradable polymeric materials from algae. Book Chapter. Chu, C.- (Ed., Cornell University): *Biodegradable polymers: New developments*. Nova Science Publishers.
7. Sharma, S., Hodges, J.N., Fehime, V., and Luzinov, I. (2012). Biodegradable polymer materials from proteins produced by animal co-products industry: Bloodmeal. Book Chapter. Hinostroza, Netravali (Eds., Cornell University): *Cellulose based composites. New green nanomaterials*. Wiley-VCH Verlag GmbH & Co. ISBN 978-3-527-32719-5.

### Journal Articles

1. Dip, T. M.; Arin, M. R. A.; Anik, H. R.; Uddin, M. M.; Tushar, S. I.; Sayam, A.; Sharma, S. Triboelectric Nanogenerators for Marine Applications: Recent Advances in Energy Harvesting, Monitoring, and Self-Powered Equipment. *Adv. Mater. Technol.* 2023. DOI: 10.1002/admt.2023008.
2. Tushar, S. I.; Sayam, A.; Uddin, M. M.; Dip, T. M.; Anik, H. R.; Aktar Arin, M. R.; Sharma, S. Triboelectric nanogenerator assisted synthesis and detection of chemical compounds. *J. Mater. Chem. A* 2023, 11 (36), 19244-19280. DOI: 10.1039/d3ta03572g (accessed 2023-10-12T17:49:14).
3. Uddin, M. M.; Yadavalli, N. S.; Nguyen, T. D.; Minko, S.; Sharma, S. Melt coated flexible stainless-steel thread based co-axial triboelectric yarn nanogenerators. *Materials Technology* 2022, 1-15. DOI: 10.1080/10667857.2022.2038769.
4. Uddin, M. M.; Blevins, B.; Yadavalli, N. S.; Pham, M. T.; Nguyen, T. D.; Minko, S.; Sharma, S. Highly flexible and conductive stainless-steel thread based piezoelectric coaxial yarn nanogenerators via solution coating and touch-spun nanofibers coating methods. *Smart Mater. Struct.* 2022, 31 (3), 035028. DOI: 10.1088/1361-665x/ac5015.
5. Ponnusamy, P. B.; Sharma, S.; Mani, S. Cotton noil based cellulose microfibers reinforced polylactic acid composite films for improved water vapor and UV barrier properties. *J. Appl. Polym. Sci.* 2022.
6. Rai, S.; Saremi, R.; Sharma, S.; Minko, S. Environment-friendly nanocellulose-indigo dyeing of textiles. *Green Chemistry* 2021, 23 (20). DOI: 10.1039/d1gc02043a.
7. Nandy, A.; Saremi, R.; Lee, E.; Sharma, S. Stability and Applicability of Retinyl Palmitate Loaded Beeswax Microcapsules for Cosmetic Use. *Johnson Matthey Technology Review* 2021. DOI: 10.1595/205651322x16225611489810.

8. Liyanapathiranage, A., Pena, M. J., Sharma, S., & Minko, S. (2020). Nanocellulose-Based Sustainable Dyeing of Cotton Textiles with Minimized Water Pollution. *ACS OMEGA*, 5(16), 9196-9203. doi:[10.1021/acsomega.9b04498](https://doi.org/10.1021/acsomega.9b04498)
9. Nandy, A., Lee, E., Mandal, A., Saremi, R., & Sharma, S. (2020). Microencapsulation of retinyl palmitate by melt dispersion for cosmetic application. *Journal of Microencapsulation*, 37(3), 205-219. doi:[10.1080/02652048.2020.1720029](https://doi.org/10.1080/02652048.2020.1720029)
10. Saremi, R., Borodinov, N., Laradji, A. M., Sharma, S., Luzinov, I., & Minko, S. (2020). Adhesion and Stability of Nanocellulose Coatings on Flat Polymer Films and Textiles. *Molecules*, 25(14), 18 pages. doi:[10.3390/molecules25143238](https://doi.org/10.3390/molecules25143238)
11. Gao, H., Asheghali, D., Yadavalli, N. S., Minh, T. P., Tho, D. N., Minko, S., & Sharma, S. (2019). Fabrication of core-sheath nanoyarn via touchspinning and its application in wearable piezoelectric nanogenerator. *Journal of The Textile Institute*, 111(6), 906-915. doi:[10.1080/00405000.2019.1678558](https://doi.org/10.1080/00405000.2019.1678558)
12. Lee, B. J., Daubenmire, S., Lee, E., Saremi, R., Smriti, R., Sriram, T., . . . Sharma, S. (2019). The optimization of novel nanocellulose gel-reactive dye coating for textile applications. *Colourage*, 66, 32-41.
13. Gao, H., Minh, P. H., Wang, H., Minko, S., Locklin, J., Nguyen, T., Sharma, S. (2018). High-performance flexible yarn for wearable piezoelectric nanogenerators. *Smart Materials and Structure*, 27(9).. <https://doi.org/10.1088/1361-665X/aad718>.
14. Morgan, C.J. and Sharma, S. (2018). Peltier effect in cotton fabric treated with doped nanocellulose. *AATCC Journal of Research*, 5(4): 1-6.
15. Jones, A., Pant, J., Lee, E., Goudie, M.J., Gruzd, A., Mansfield, J., Mandal, A., Handa, H., Sharma, S. (2018). Nitric oxide-releasing antibacterial albumin plastic for biomedical applications. *Journal of Biomedical Materials Research Part A*, 106(6): 1535-1542.
16. Kim, Y., McCoy, L.T., Lee, E., Lee, H., Saremi, R., Feit, C. Hardin, I.R., Sharma, S. Mani, S., Minko, S. (2017). Environmentally sound textile dyeing technology with nanofibrillated cellulose. *Green Chem.*, 19(17): 4031-4035.
17. Jones, A., Mandal, A., and Sharma, S. (2017). Antibacterial and drug Elution Performance of Thermoplastic Blends. *Journal of Polymers and the Environment*, 26(1): 132-144.
18. Jones, A. and Sharma, S. (2017). Surface and degradation properties of thermoplastic blends from albumin and zein-based plastics. *Journal of Applied Polymer Science*, 134(13), 44646.
19. Jones, A. and Sharma, S. (2016). Thermoplastic blends from albumin and zein: plastic formation and mechanical properties including modeling. *Journal of Polymers and the Environment*, 24(4): 309-317.
20. Banerjee, A., Singh, M., Das, K., and Sharma, S. (2016). Study of biodegradable polyesters from algal sources for use in future textile fiber applications. *AATCC Journal of Research*, 3(1): 1-6 01.
21. Jones, A., Mandal, A., and Sharma, S. (2015). Protein based bioplastics and their antibacterial potential. *Journal of Applied Polymer Science*, 132(18), 41931.
22. Ronda, S. R., Parapudi, P. L.C., Vemula, S., Tumma, S., Botlagunta, Settaluri, V.S., Lele, S., Sharma, S., and Kandala, C. (2014). Optimization of medium components using orthogonal array for  $\gamma$ -linolenic acid production by *Spirulina platensis*. *The Korean Journal of Chemical Engineering*, 31(10), 1839-1844.
23. Ronda, S. R., Kethineni, C., Parupudi, L.C.P., Thunuguntla, V.B.S.C, Vemula, S., Settaluri, V.S., Allu, P.R., Grande, S.K., Sharma, S., and Kandala, C.V. (2014). A growth inhibitory model with SO<sub>x</sub> influenced effective growth rate for estimation of algal biomass concentration under flue gas atmosphere. *Bioresource Technology*, 152, 283-291.

23. Sharma, S., and Luzinov, I. (2013). Whey based binary bioplastics. *Journal of Food Engineering*, 119(3), 404-410.
24. Sharma, S., Zeller, M. A., Hunt, R.W., and Jones, A. (2013). Bioplastics and their thermoplastic blends from Spirulina and Chlorella microalgae. *Journal of Applied Polymer Science*, 130(5), 3263-3275.
25. White, E.V., Seppala, J.E., Rushworth, P.M., Ritchie, B.W., Sharma, S., and Locklin, J. (2013). Switching the adhesive state of catecholic hydrogels using phototitration. *Macromolecules*, 46(22), 8882-8887.
26. Sharma, S., Zeller, M.A., and Jones, A. (2013). Thermal, mechanical, and moisture absorption properties of egg white protein bioplastics with natural rubber and glycerol. *Progress in Biomaterials*, doi: 10.1186/2194-0517-2-12.
27. Sharma, S. and Cao, J. (2013). Near-Infrared Spectroscopy for anti-counterfeiting innovative fibers. *ISRN Textiles*, <http://dx.doi.org/10.1155/2013/649407>.
28. Sharma, S., Sivasankari, V., Pattathil, S., and Kandemkavil, S. (2013). Analyses of cell wall glycans using glycome profiling in two commercially important lignocellulosic fiber raw materials. *Journal of Textile Science and Engineering*, doi: 10.4172/2165-8064.S1-001.
29. Sharma, S., Zeller, M.A., and Hunt, R.W. (2013). Sustainable bioderived polymeric materials and thermoplastic blends made from floating aquatic macrophytes such as “Duckweed.” *Journal of Applied Polymer Science*, 127(1), 375-386.
30. Sharma, S., and Luzinov, I. (2012). Water aided fabrication of whey and albumin plastics. *Journal of Polymers and the Environment*, 20(3), 681-689.
31. Sharma, S., and Kim J.R. (2012). The development and comparison of bio-thermoset plastics from epoxidized plant oils. *Industrial Crops and Products*, 36(1), 485-499.
32. Sharma, S., and Cao, J. (2011). In vitro study of synthetic prosthetic meshes for inguinal hernia repair. *AATCC Review Journal*, 11(6), 52-59.
33. Sharma, S., and Kim, J.R. (2011). Acaricidal activities of clove bud oil and red thyme oil using microencapsulation against house dust mites. *Journal of Microencapsulation*, 29(1), 82-91.
34. Sharma, S., and Luzinov, I. (2011). Ultrasonic curing of one-part epoxy system. *Journal of Composite Materials*, 45(21), 2217-2224.
35. Sharma, S., Hodges, J.N., and Luzinov, I. (2008). Biodegradable plastics from animal protein co-products: Feathermeal, *Journal of Applied Polymer Science*, 110(1), 459-467.

## Patents

1. Sharma, S.; Asheghali, D.; Minko, S.; Yadav, S. K.; Gao, H. Methods and devices for multi-layer nanofibers. 11,136,695 B2, 2021.
2. Kim, Y., Sharma, S., Minko, S. Launderable conductive fabric with nanocellulose protective coating. (2017). US Provisional Patent application No. 62/375,981.
3. Minko, S., Sharma, S., Hardin, I., Luzinov, I., Daubenmire, S. W., Zakharchenko, A., . . . Kim, Y. S. (2016). Textile dyeing using nanocellulosic fibers. (US Patent Application # US 20160010275 A1). <https://www.google.com/patents/US20160010275>.
4. Sharma, S., Mandal, A., Jones, A. (2016). Protein-based bioplastics and methods of use. (US Patent Application # US20160289449 A1). <https://www.google.com/patents/US20160289449>.
5. Sharma, S., Zeller, M.A., and Hunt, R.W. Macrophyte-based bioplastic. (US Patent Application # US13/594,680, and the PCT Application # PCT/US12/52380).

<https://www.google.com/patents/US20130220173?dq=suraj+sharma&ei=JfypUrqYG5TNkAfv04GIDw&cl=en>.

6. Whatley, B.R., Wen, X., Luzinov, I., Sharma, S. Protein based materials, plastic albumin devices and related methods. (US Patent Application # US13/905,726).

<https://www.google.com/patents/US20130325121?dq=ininventor:%22Suraj+Sharma%22&hl=en&sa=X&ei=Fv6pUv2bM8bdkQeOwIGwAw&ved=0CGMQ6AEwBg>.

### **Theses/dissertations and Post Doc direction (Chair or Co-chair)**

<b>Student</b>	<b>Program of Study</b>	<b>Thesis/Dissertation Title</b>	<b>Status</b>
Talulder, A.	Ph.D.	Yarn Nanogenerators	In-progress
Mohaka, V.	Ph.D.	Polymer Drug Conjugates	In-progress
Absalan, Y.	Ph.D.	Photocatalytic degradation of dyes	In-progress
Uddin, M.	Ph.D.	Sustainable Packaging	In-progress
Rai, S.	Ph.D	Nanocellulose-based Dyeing of Cotton-Rich Textiles: A Sustainable Solution for the Textile Industry	Graduated (2023)
Uddin, M.	M.S.	Yarn-based electroactive nanogenerators	Graduated (2021)
Liyanapathiranaage, A.	Ph.D.	Nanocellulose based technology	Graduated (2022)
Nandi, A.	M.S.	Microencapsulation of antioxidants	Graduated (2019)
Kim, Y.	Post Doc	Innovative and environmentally friendly textile dyeing technology using nanocellulosic fibers	(2015-17)
Gao, H.	M.S.	High-performance piezoelectric energy harvesting textiles	Graduated (2018)
Saremi, R.	Ph.D.	Enzymatic treatments of functional nanocellulose coatings for sustainable textile dyeing	Graduated (2017)
Jones, A.	Ph.D.	Protein-based plastics and their potential use in medical and food packaging applications	Graduated (2015)
McCoy, L. T.	M.S.	Pretreatment, processing, and production of hydrogels using nano-sized biomass	Graduated (2017)

Wang, K.	M.S.	Bioplastic Potential of Spirulina Microalgae	Graduated (2014)
Kim, J. R.	M.S.	Microencapsulation Technology Using Essential Oil to Produce Acaricides against House Dust Mites	Graduated (2010)
Cao, J.	M.S.	In Vitro Study of Synthetic Prosthetic Meshes for Inguinal Hernia Repair	Graduated (2010)

### **Professional/ Scholarly presentations**

- Dona, A. N. K. L., Sharma, S., & Minko, S. (2019). Colloidal chemistry of NFC based sustainable textile dyeing technology and factors affecting dye performance. In ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY Vol. 257 (pp. 2 pages). Orlando, FL: AMER CHEMICAL SOC. Retrieved from <http://gateway.webofknowledge.com/>
- Ghezghapan, S. M. S., Savchak, M., Dona, A. N. K. L., Sharma, S., Minko, S., & Luzinov, I. (2019). Fabric modification with nanocellulosic fibers as functional carriers. In ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY Vol. 257 (pp. 1 page). Orlando, FL: AMER CHEMICAL SOC. Retrieved from <http://gateway.webofknowledge.com/>
- Nandy, A., Lee, E., Sharma, S. (2019). "Microencapsulation of Retinyl Palmitate by Melt Dispersion for cosmetic application of textiles," Techtexil North America Conference, Raleigh, NC.
- Nandy, A., Lee, E., Sharma, S. (2019). "Microencapsulation of Retinyl Palmitate by Melt Dispersion for cosmetic application of textiles," AATCC International Conference, Fort Worth, TX.
- Rai, S., Sharma, S. (2019). "Natural Indigo Dye based Nanocellulose Gel Dyeing of Cotton Textiles," Techtexil North America, Raleigh, NC.
- Liyanapathirana, A., Sharma, S., Minko, S. (2019) "Colloidal chemistry of NFC based sustainable textile dyeing technology and factors affecting dye performance," American Chemical Society-Spring National Meeting, Orlando, FL.
- Liyanapathirana, A., Sharma, S., Minko, S. (2019). "Commercial and Environmental Benefits of NFC Based Sustainable Textile Dyeing," Tech Talks-Techttextil North America, Raleigh, NC.
- Liyanapathirana, A., Sharma, S., Minko, S. (2019) "Environmentally sustainable and industrially reliable textile dyeing technology from fibrillated nanocellulose," AATCC International Conference, Fort Worth, TX.
- Liyanapathirana, A., Kim, Y., McCoy, L., ..., Mani, S., Hardin, I. R., Sharma, S., Minko, S. (2018) "Potential Applications of Fibrillated Nanocellulose for a Sustainable Textile Coating Technology," Southern Textile Research Conference, Myrtle Beach, SC. (Invited)
- Sharma, S., Gao, H., Nguyen, Minko, S. (2018). "Flexible Piezoelectric Textiles for Energy Harvesting," TMI Graduate Seminar, Athens, GA.
- Sharma, S., Gao, H. (2018). "Preparation and characterization of flexible piezoelectric textiles for energy harvesting," American Association of Textile Chemists and Colorists (AATCC) International Conference, Greenville, SC.
- Liyanapathirana, A., Kim, Y., McCoy, L., ..., Mani, S., Hardin, I. R., Sharma, S., Minko, S. (2018). "Environmentally Sound Textile Dyeing and Finishing Technology from Nanocellulose," National Science Foundation, Industry-University Cooperative Research Centers Program (NSF-IUCRC), Athens, GA.
- Sharma, S. (2018). "New polymers from camelina oils for applications in packaging coatings NSF-IUCRC planning meeting (Athens) as an oral presenter," National Science Foundation, Industry-University Cooperative Research Centers Program (NSF-IUCRC), Athens, GA.

- Liyanapathirana, A., Kim, Y., McCoy, L., . . . , Mani, S., Hardin, I. R., Sharma, S., Minko, S. (2018). "Nanocellulose Based Sustainable and Environmentally Sound Textile Dyeing and Finishing Technology," Tech Talks-Techtextil North America, Atlanta, GA.
- Liyanapathirana, A., Kim, Y., . . . , Luzinov, I., Mani, S., Hardin, I. R., Sharma, S., Minko, S. (2018) "Sustainable Novel Industrial Applications of Fibrillated Nanocellulose," International Symposium on Materials from Renewables (ISMR), Fargo, ND.
- Sharma, S., Gao, H. (2018) Flexible Piezoelectric Textiles for Energy Harvesting. texProcess Americas/techtextile North America Symposium, Atlanta, GA. (Invited)
- Rai, S., Sharma, S. (2018). "Nanocellulose based Dyeing for Cotton/ Polyester Blend Fabrics," Texprocess Americas Tech Talks, Atlanta, GA.
- Sharma, S., Gao, H. (2018). "Wearable Piezoelectric Nanogenerator for Energy Harvesting," Synthetic yarn and Fabric Association (SYFA) Conference, Charlotte, NC. (Invited)
- Kim, Y., McCoy, L., Lee, E., Lee, H., Saremi, R., Feit, C., Hardin, I., Sharma, S., Mani, S., Minko, S. (2018). "Environmentally sound textile dyeing technology with nanofibrillated cellulose," 255th National Meeting and Exposition of the American-Chemical-Society (ACS) - Nexus of Food, Energy, and Water, New Orleans, LA.
- Gao, H., Asheghali, D., Kim, Y., Sharma, S., Minko, S. (2018). "Wearable sensors utilizing nanofiber technology 255th National Meeting and Exposition of the American-Chemical-Society (ACS) - Nexus of Food, Energy, and Water, New Orleans, LA.
- Hughes, E., Lee, E., Sharma, S. (2017). New Polymer Resin from Camelina Oil for Packaging Application. The Fiber Society, Athens, GA.
- Sharma, S., Banerjee, A. (2017). "A Novel Approach for Preparation of Continuous Biodegradable Polyester based Nano Sheath-Core Yarn for Biomedical Application," Fall Conference of The Fiber Society, Athens, GA.
- Rai, S., Zilinskas, R. A., Minko, S., Mandal, A., Sharma, S. (2017). "Natural indigo based nanocellulose gel dyeing of cotton textiles," Fall Conference of The Fiber Society, Athens, GA.
- Gao, H., Sharma, S. (2017). "PVDF Nanofibers with High Piezoelectric Performance via Touch Spinning Process," Fall Conference of The Fiber Society, Athens, GA.
- Minko, S., Kim, Y., Sharma, S. (2016). "Nanocellulose-based Textile Coatings for Smart Textiles," Spring Conference of The Fiber Society, Mulhouse, France.
- Banerjee, A., Sharma, S. (2016). "Preparation and Characterization of Biodegradable Electrospun core-sheath yarn for Bio-medical purposes," Poster session presented at the meeting of American Association of Textile Chemists and Colorists (AATCC) International Conference at Williamsburg, VA
- Kim, Y., McCoy, L., Lee, E., Saremi, R., Lee, H., Feit, C., Sharma, S., Minko, S. (2016). "Efficient, sustainable, and scalable textile dyeing technology using nanocellulosic fibers," Poster session presented at the meeting of Green & Sustainable Chemistry Challenge by Elsevier Foundation, Berlin, Germany
- Kim, Y., McCoy, L., Lee, E., Saremi, R., Lee, H., Feit, C., Sharma, S., Minko, S. (2016). "Nanocellulose based dyeing: a more sustainable way to dye textiles," Poster session presented at the meeting of American Apparel & Footwear Association Environmental Committee Meeting, Austin, TX
- Kim, Y., McCoy, L., Lee, E., Saremi, R., Lee, H., Feit, C., Sharma, S., Minko, S. (2016). "Efficient, Sustainable, and Scalable Textile Dyeing Technology Using Nanocellulosic Fibers," Poster session presented at the meeting of the Textile Innovation meeting in Walmart U.S. Manufacturing Summit, Bentonville, AR
- Kim, Y., McCoy, L., Lee, E., Saremi, R., Lee, H., Feit, C., . . . Sharma, S., Minko, S. (2016). "Nanocellulose hydrogels for sustainable textile dyeing," In 1<sup>st</sup> International Symposium on Materials from Renewables, Fargo, ND
- Banerjee, A., & Sharma, S. (2016). "Polyhydroxybutyrate (PHB) based Nano-yarn and its Applications in Bio-Textiles," In South East Graduate Consortium, Athens, GA

- Banerjee, A., & Sharma, S. (2016). "Polyhydroxyalkanoate based Nano fibrous structures and their application in the Biomedical field," Poster presentation in Advanced Functional Fabrics of America (AFFOA) Industry Day, Athens, GA
- Saremi, R., Kim, Y., Sharma, S., Hardin, I. R., Minko, S. (2016). "Surface Modification of Nanofibrillated Cellulose and Nanocrystalline Cellulose for Textile Coating and Dyeing," Fiber Society Fall Conference, Cornell University, Ithaca, New York.
- Saremi, R., Kim, Y., Hardin, I. R., Sharma, S., Minko, S. (2016). "Surface Modification of Nanofibrillated Cellulose and Nanocrystalline Cellulose," Poster presentation in Advanced Functional Fabrics of America Industry Day, Athens, GA
- Saremi, R., Kim, Y., Sharma, S., Minko, S. (2016). "Nanocellulose - Surface Modification, Coating and Textile Dyeing," 6th Annual GSPS Research Day, University of Georgia, Athens, GA.
- McCoy, L., Kim, Y., Feit, C., Gruzd, A., Lee, E., Minko, S, Sharma, S. (2016). "Nanocellulose Hydrogels for Functional Coating Materials in Textile Applications," Poster presentation in Advanced Functional Fabrics of America (AFFOA) Industry Day, Athens, GA
- Kim, Y., Tolbert, L., Lee, E., Saremi, R., Sharma, S., Hardin, I. R., Minko, S. (2016). "Sustainable Textile Dyeing Based on Nanocellulose Hydrogels and Reactive Dyes," Poster presentation in Advanced Functional Fabrics of America (AFFOA) Industry Day, Athens, GA.
- Minko, S., Kim; McCoy, L., Lee, E., Saremi, R., Lee, H., Feit, C., Sharma, S. (2016). "Efficient, sustainable, and scalable textile dyeing technology using nanocellulosic fibers," 1st Green and Sustainable Chemistry Conference, Berlin, Germany.
- Banerjee, A. and Sharma, S. (2015). "Study of Biocompatibility and Cell proliferation on Microalgal Polyhydroxy Butyrate (PHB) Fibrous Structures for Wound Healing Applications," Graduate Student Oral Paper Competition, AATCC International Conference, Savannah, GA.
- Kim, Y., Lee, E., Tolbert, L., Saremi, R., Hardin, I. R., Sharma, S., Minko, S. (2015). Nanocellulose for Functional Surface Modification and Coatings on Textile Fabrics. The Fiber Society Fall Technical Conference, Raleigh, NC.
- Jones, A., Sharma, S. (2015). The Modification of Albumin-based Bioplastics with Magnetized Silver Nanocomposites. Poster session presented at the meeting of Magnetically stimulated soft materials, International Conference, Athens, GA.
- Tolbert, L., Kim, Y., Lee, E., Savchak, M., Luzinov, I., Minko, S., Sharma, S. (2015). Development, Processing, and Novel Applications of Sustainable Nanocellulose Gel. Poster session presented at the meeting of the BSRI Poster Competition, Athens, GA.
- Banerjee, A., Sharma, S. (2015). Cyanobacterial Polyhydroxyalkanoates: A Biosynthesis and Industrial Economics Perspective. Poster session presented at the meeting of the BSRI Poster Competition, Athens, GA.
- White, E. M., Seppala, J. E., Rushworth, P. M., Sharma, S., Locklin, J. (2014). Switching the adhesive state of catecholic hydrogels using phototitration. Abstracts of Papers of the American Chemical Society.
- Sharma, S., Daubenmire, S., and Tolbert, L. (2014) Effects of antimicrobial activities of peppermint and rosemary oils incorporated into textiles. American Association of Textile Chemists and Colorists (AATCC) International Conference, Asheville, NC.
- Sharma, S., Jones, A., Ayton, E., Hunt, R., and Zeller, M.A. (2013). Bioplastics and thermoplastic blends made from Spirulina and Chlorella Microalgae species. Proceedings of Global Plastics Environmental Conference (GPEC).
- Dhandapani, R., Wang, K., Jones, A., Hunt, R., Zeller, M.A., and Sharma, S. (2013). Bioremediation and sustainable materials from aquatic macrophytes such as "Duckweed." Proceedings of SEC Symposium, 82.
- Sharma, S., Dhandapani, R., and Zeller, M.A. (2012). Microfibrillated cellulose fibers and biocomposites from aquatic Duckweed macrophyte. American Association of Textile Chemists and Colorists (AATCC) International Conference, 256.
- Kim, J.R., and Sharma, S. (2011). Microencapsulation technology using essential oils to produce durable textile functionalities. Proceedings of Beltwide Cotton Conferences. (CD).

- Vatansever, F., Zdyrko, B., Sharma, S., Li, X.W., Wen, X.J. and Luzinov, I. (2010). Coating from human albumin plastic on titanium orthopedic implants. *Proceedings of American Chemical Society*, 240, 169-COLL.
- Sharma, S. (2010). Polymer blends and composites derived from biopolymers. *Proceedings of American Chemical Society*, 237, 247-CELL.
- Sharma, S. (2009). Polymer blends and composites derived from biopolymers. *Proceedings of the Fiber Society*, 75.
- Sharma, S., Hodges, J., and Luzinov, I. (2008). Biodegradable plastics from animal coproduct proteins and blends. *Proceedings of American Chemical Society*, 235, 519-POLY.
- Hodges, J., Sharma, S., and Luzinov, I. (2008). Composite materials from proteins produced by animal coproduct industry and their chemical modification. *Proceedings of American Chemical Society*, 235, 730-CHED.
- Sharma, S., and Luzinov, I. (2007) Plastics from proteins produced by animal coproduct industry. *Proceedings of American Chemical Society*, 233, 182-CELL.
- Sharma, S., and Luzinov, I. (2006). Ultrasonic curing of one-part epoxy resin. *Proceedings of American Chemical Society*, 231, 277-PMSE.

### **Full Papers in Refereed Conference Proceeding**

- Sharma, S., Hunt, R., Cao, J, and Zeller, M. A. (2011). Bioplastics from algae biomass. *Technical Papers, Global Plastics Environmental Conference (GPEC)*. (CD, BB16 pp.).
- Sharma, S. (2010). Polymer blends and composites derived from biopolymers. *Technical Papers, Global Plastics Environmental Conference (GPEC)*. (CD, BB12 pp.).
- Sharma, S., and Luzinov, I. (2006). Ultrasonic curing of one-part epoxy resin. *Polymeric Materials: Science and Engineering (PMSE)*. Preprints. 94, 452, American Chemical Society (ACS).

## **FUNDED PROJECTS/GRANTS**

### **External Grants**

- Sharma, S. (PI), Minko, S. (Co-PI) (2023-24). DNY Innova Textile Consult Services LLC. (Industry sponsor). Sustainable Indigo Dyeing of Cotton with Indigo (natural or synthetic) and NFC (Nanofibrillated cellulose) Formulation (\$110,257).
- Sharma, S. (PI) (2017-2023). Mission Products Holding, Inc. (Industry sponsor). Cooling towel technology—phase I-IX. (\$58,598)
- Sharma, S. (PI), Mani, S. (Co-PI), 2023. NSF-CB2. Bio-based coatings for high-performance paper packaging application and improved understanding of their water barrier properties (\$65,557)
- Sharma, S. (PI), Mani, S. (Co-PI), 2022. NSF-CB2. Bio-based coatings for high-performance flexible paper packaging application (\$56,040)
- Sharma, S. (PI), 2019. NSF-I-Corps. EcoaTEX - Eco-Friendly Textile Coatings (\$50,000)
- Sharma, S. (PI) (2020). Mission Products Holding, Inc. (Industry sponsor). Droplet Disbursement Testing of Mission Fabrics (\$10,000)
- Minko, S. (PI), Sharma, S. (Co-PI) (2019). Mission Products Holding, Inc. (Industry sponsor). The thermal resistance characterization of textile samples (\$15,000)
- Minko, S. (PI), Sharma, S. (Co-PI) (2019). Royal TenCate (USA), INC. (Industry sponsor). Piezoelectric Geotextile (\$14,966)
- Minko, S. (PI), Sharma, S. (Co-PI) (2019). Clemson University. Textile dyeing with nanocellulosic fibers. (\$10,000)

Minko, S. (PI), Sharma, S. (Co-PI), Kim, Y., Luzinov, I., Lickfield, G. (2018). Cotton Incorporated. Green and Efficient Textile Dyeing and Finishing Technology Using Nanocellulosic Fibers. (\$59,771)

Sharma, S. (2018) (PI). Cotton Incorporated. Sustainability is Not Expensive. (\$16,021)

Rai, S. and Sharma, S. (2018). Nanocellulose based Dyeing with Chitosan for Cotton/Polyester Blend Fabrics. AATCC Foundation. (\$500)

Nandy, A. and Sharma, S. (2018). Microencapsulation of vitamin A Palmitate by melt dispersion for cosmetic application of textiles. AATCC Foundation. (\$500)

Liyanapathirana, A. and Sharma, S. (2018). Chemical crosslinking post-treatments from Polycarboxylic acids for nanocellulose based textile dyeing to improve dye performance and reduce water pollution. AATCC Foundation. (\$700)

Minko, S. (PI), Sharma, S. (Co-PI), Shchukin, D. (Liverpool) (2017). NATO grant. Energy efficient coating materials for heating/cooling applications as well as functional textiles. (EUR 370,000)

Sharma, S. (PI) (2017). ANISA International (Industry sponsor). Infused PBT Brush Fibers. (\$13,121)

Sharma, S. (PI) (2016-2020). USDA- Agricultural Experiment Stations (AES) Hatch Project. New Polymers from Camelina Oils for Applications in Packaging Coatings and Floor Covering Products. (\$217,000).

Gao, H. and Sharma, S. (2017). High-performance wearable energy harvester. AATCC Foundation. (\$900).

Sharma, S. (PI) (2016). Awarded industry-sponsored proposal; title: “Textile Accessory Development: Functional Glove”; \$13,734.

Kim, Y, Minko, S. and Sharma, S. (Co-PI) (2016). The proposal titled “Sustainable Textile Dyeing Using Nanocellulosic Fibers” submitted to the Elsevier’s Green and Sustainable Chemistry Challenge. It was one of the Top 5 proposals out of the almost 500 proposals received. Awarded the First price of EUR 50,000.

Banerjee, A. and Sharma, S. (2016). Integrated continuous electrospinning nano-core sheath yarn production using biodegradable polymers. AATCC Foundation. (\$500)

Hunt-Hurst, P.K. (PI), Blalock, E., Gomez-Lanier, L., Sharma, S., Zenti, S. (2015). Cotton Incorporated. Cotton for Healthy Living. (\$36,800)

Minko, S. (PI), Sharma, S. (Co-PI) (2016). UGA-Liverpool University seed grant. Energizing smart coatings and textiles. (\$4,500)

Sharma, S. (PI) (2016). Wear Bumi Industry contract testing. Antimicrobial and water repellency test. (\$1,586)

Minko, S. (PI), Sharma, S. (Co-PI), and Hardin, I.R. (2014). Walmart U.S. Manufacturing Innovation Fund. Novel, sustainable and cost-effective, textile dyeing techniques using nano-cellulosic fibers. (\$171,371).

Sharma, S. (PI) and ALGIX, LLC (2011, 2012, 2013). Venture Lab Phase I (A and B) and phase II (A) proposal. Georgia Research Alliance (GRA). The production of algal bioplastics using a protein-based thermomechanical approach. (\$100,000).

Hunt-Hurst, P.K. (PI), Kim, S., Seock, Y. K., Sharma, S. (Co-PI) and Lee, M. (2010). Cotton Incorporated. Cotton is our everyday. (\$28,200).

Sharma, S. (PI). (2009-2013). USDA- Agricultural Experiment Stations (AES) Hatch Project. Microencapsulation technology using essential oils to produce smart textile functionalities that improve human health. (\$89,250).

### **Internal Grants (UGA)**

Rai, S. and Sharma, S. (2019). Optimization of Coating Yarns with Nanocellulose–Indigo based gel for Denim. IIRG, UGA. (\$2,000).

Gao, H. and Sharma, S. (2017). Flexible piezoelectric textile used for energy harvester. IIRG, UGA. (\$2,321).

- Sharma, S. (2017). LEAD 21 project: Providing Clothing and Textile Support to County Extension Agents. Director of Extension/College of Agriculture and Environmental Sciences. (\$19,000).
- Sharma, S. (2016). Incorporating 3D Printing and the Flipped Classroom into Textile Education. Center for Teaching and Learning (UGA). (\$22,208)
- Sharma, S. (2016). Received MRR renovation funds of \$163,000 for Room 104 Dawson Research lab, UGA.
- Sharma, S. (2016). To incorporate 3D printing into the Textiles, Merchandising, and Interiors curriculum. Sweaney Innovation Fund, UGA (\$5,000).

### **Professional Service and Professional Development Activities**

- Ad hoc Reviewer for the following refereed journals: Food Science and Technology, Composite Science and Technology, Journal of Applied Polymer Science, Clothing Science and Technology, Journal of Biomedical Materials Research: Part A, American Association of Textile Chemists and Colorists Review Journal, Industrial and Engineering Chemistry Research, Clothing and Textiles Research Journal, Journal of Food Engineering, Macromolecular Materials and Engineering, Journal of Fashion Technology and Textile Engineering, Macromolecules Cellulose, Plant Medica. Journal of Bioactive and Compatible Polymers, green Chemistry, Journal of Polymers and the Environment, ACS Sustainable Chemistry & Engineering, ACS Applied Materials & Interfaces, Journal of Family Ecology and Consumer Sciences, Journal of the Science of Food and Agriculture, Industrial Crops and Products, European Polymer Journal, Colloids and Surfaces B: Biointerfaces, MRS Communications
- Attended AFFOA Members Only Workshop; Summer 2018, MIT, Boston.
- Member of organizing committee as well as session chair of science symposium of Graduate Student Consortium at UGA, 2017
- Member of the organizing committee for Fall 2017 The Fiber Society's Fall international conference as well as session chair of nanocellulose and Chair of the Graduate Student Paper and Poster competitions.
- Member of the organizing committee for Fall 2016 Advanced Functional Fabric of America (AFFOA) Industry Day at UGA. The conference with a broad representation of textile companies and universities of South-East region on the topics related to the development of AFFOA manufacturing institute.
- Plastics engineering and polymer science books at Elsevier: Anonymous peer review of book proposal titled "Algae-Based Polymers, Blends, and Composites" 2015.
- Expert reviewer, Research Grants Council (RGC) of Hong Kong, Hong Kong (2016). Reviewed two scientific proposals.
- Expert reviewer for the US-Egypt Science and Technology Joint Fund, National Academics of Sciences, Engineering and Medicine (2017).
- Panel reviewer for American Association for the Advancement of Science (AAAS)-- King Abdulaziz City for Science and Technology (KACST) Chemistry-Biomaterials block proposals (2017).
- Peer review of research proposals from Nebraska Corn Board (2018, 2019).
- Sustainability across the Curriculum Faculty Development Workshop, 2015
- Chair, Multi-State Research Project, S1054: Biobased Fibrous Materials and Cleaner Technologies for a Sustainable and Environmentally Responsible Textile Industry, 2016.
- Chair, Multi-State Research Project, S1026: Textile Materials and Technologies Addressing Energy, Health and Other National Security Issues, 2011.
- Secretary, S1026 Multi-State Research Project: Textile Materials and Technologies Addressing Energy, Health and Other National Security Issues. 2010.
- Reviewer for the International Textile and Apparel Association (ITAA) Student Paper Competition. 2009.

- Investigator of the Life Skills Literacy (LSL) interdepartmental project to investigate the indoor-air-quality. My research lab tested samples from houses for various allergens (e.g., dust mites, pet dander) and microorganisms (e.g., fungi, bacteria).
- Indoor Air Quality/ Industrial Hygiene Sampling Workshop; EMSL Analytical, Inc., Atlanta, GA; June 24; 2010.
- Grant Proposal Writing Workshop; Grant Writer's Seminars and Workshop, LLC; hosted by the University of Georgia. May 18, 2009; Participant.
- USDA Competitive Grants Workshop: January 25-26, 2011. Participant. This workshop provided an overview of the competitive opportunities at the National Institute of Food and Agriculture (NIFA), presented tools and tips to write outstanding grant applications to the NIFA competitive funding opportunities and helped in developing a better understanding of coordination, planning, and management of grants—specifically large multidisciplinary and multi-institutional grants.

### **Service Activity in University, College and Department**

#### *University Level*

- UGA PFAC, 2022-25
- UGA PRAC, 2023-
- University council member, 2014-2017
- Program committee, Bioenergy Systems Research Institute (BSRI), 2013-present
- Judge for Students Poster Presentations, Bioenergy Systems Research Institute (BSRI) Annual Retreat, 2013
- Young Dawgs Internship: Young Dawgs Program at UGA provides research opportunities to high school students. Fall 2010, Spring 2011, Summer 2012.
- Reader (Engineering, Technology) for Georgia Junior Science and Humanities Symposium, February 2009

#### *College Level*

- FACS P&T committee, 2021-present
- FACS Scholarship committee, 2015- present
- FACS curriculum committee, 2015- present
- Faculty Advisory Committee, 2012- 2015
- Guest speaker at FACS Summer College, 2010
- FACS Leadership Retreat at Camp Kiwanis; Fall 2009
- Special Award Judge for FACS at Georgia Science and Engineering Fair 2010. Reviewed the nominated projects of juniors and seniors in Natural, Social and Behavioral Sciences
- Guest speaker for FACS 2000 class; Fall 2009, Spring 2013
- Georgia Soft Goods Education Board Faculty trustee, 2009-present

#### *Department Level*

- Third-year review committee: Assistant Professor, Dr. Vladimir Reukov, 2022
- Third-year review committee: Assistant Professor, Dr. Monica Sklar, 2019.
- Search committee member for the Assistant Professor Polymer, Fiber and Textile, 2018
- Promotion and Tenure committee of Assistant Professor, Dr. Lilia Gomez, 2018.
- Chair of Search committee member for the Research Technician III, 2018
- Search committee member for the Assistant Professor Merchandising, 2017

- Search committee member for the TMI's Administrative Specialist I, 2017
- Search committee member for the TMI Head, 2015
- Chair of search committee Georgia Soft Goods Education Foundation Distinguished Professor, 2015
- Promotion and tenure revision committee, 2015
- Developed proposal for the presidential cluster hiring initiative, 2014
- Development of a joint interdisciplinary faculty position proposal between FACS and College of Engineering, 2014 (awarded)
- Learning Outcomes Committee, 2013
- Fashion Merchandising curriculum committee for American Apparel and Footwear Association (AAFA) competencies review committee, 2010 -2013
- Textile Science Ph.D. program name change and curriculum committee, 2013
- Fiber, Polymer and Textile Science Professor Search Committee, 2012
- Textile Science Curriculum Committee, 2008- present
- Graduate Faculty Member, 2009- present
- South Campus Tailgate Committee, 2008- 2010 (Chair in 2010)
- Committee for Formulating Strategic Plan for Textile Science area, 2010
- Moderator for Southeast Graduate Student Consortium, 2010
- TMI Hosting of Southeast Graduate Student Consortium Committee, 2010
- Committee for revising the focused areas of M.S. and Ph.D. program in Textile Science
- Committee for formulating criteria to award assistantships to graduate students from Fall 2009 onward
- Guest speaker for TXMI 8050, Research Methodology class; Spring 2009-2013
- AATCC Student Chapter Faculty Advisor; Fall 2013- present