

Dr. SUKUMAR ROY

PERMANENT ADDRESS

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OBJECTIVE:

To work in a challenging position of an organization where I can make proper use of my knowledge, skill, experience and at the same time I get opportunities to learn more new things.

Keywords: *Yarn and fabric manufacturing; Polymeric composite; Textile filter; Antibacterial textiles; Electrospinning; Melt spinning; Comfort index; Data analysis; Testing instruments*

ACADEMIC DETAILS:

<u>Year</u>	<u>Degree/Exam</u>	<u>Board/Institute</u>	<u>% Marks/CGPA</u>
2020	PhD in Textile Engineering	NIT, Jalandhar	Awarded
2011	M.Tech in Textile Engineering	I.I.T. Delhi	71
2008	B. Tech in Textile Engineering	W.B.U. T	73
2003	Higher Secondary	W.B.C.H.S. E	68
2001	Secondary	W.B.B.S. E	70.

WORK EXPERIENCES:

Organization	Designation	Time Period
IIT Delhi	Institute Post-Doctoral Fellow	March-2021- March 2023
Man Made Textiles Research Association	Senior Scientific Officer	March 2020- March 2021
NIT Jalandhar, Punjab	Guest faculty	Sept 2018- December 2019
NIT Jalandhar, Punjab	Assistant Professor (contract)	July 2011-August 2013
Raymond Uco Denim Private Limited	Graduate Engineer Trainee	July 2008-April 2009

PUBLICATIONS:

1. Joshi, M., Roy, S., Ayeshvaryaa, T. V. (2023). Polyurethane/Halloysite Nano Tubes/Sericin based Electrospun Nanocomposite for Sustained Drug Release. *Advances in Natural Sciences: Nanoscience and Nanotechnology*, Accepted. [**I.F-2.37**]
2. Joshi, M., Roy, S., Venugopal, V. (2022). Polyurethane/ Drug loaded Halloysite Nanotubes based Electrospun Nanocomposite for Sustained Drug Release. *Advances in Natural Sciences: Nanoscience and Nanotechnology*. Accepted. [**I.F-2.37**]

3. Roy, S., Banerjee, S., Joshi, M., Naik, S N., Rajendran, S & Ali, Z. (2022). In vitro antibacterial and antioxidant activities of cotton fabrics treated with bael fruit shell extract. *Indian Journal of Fibre & Textile Research*, 47, 116-124. [I.F-0.84]
4. Roy, S. (2020). Effect of antibacterial finish on zeta potential of textile materials. *Man Made Textile Research Association*, 14(8), 6-8.
5. Roy, S. (2020). Effect of fiber parameters on zeta potential. *Man Made Textile Research Association*, 14(7), 5-7.
6. Ghosh, S., Roy, S., Singh, K. (20220). Effect of pH on antibacterial activity of textile fibres. *Journal of The Institution of Engineers (India): E series*. 102, 97-104. [I.F-1.11]
7. Roy, S., Ghosh, S., and Bhowmick, N. (2020). Modeling of textile filter media based on the fiber orientation in liquid filter media. *Journal of The Institution of Engineers (India): E series*. <https://doi.org/10.1007/s40034-020-00159-0>. [I.F-1.11]
8. Roy, S., Ghosh, S., and Bhowmick, N. (2019). Scientific design of potable scientific design of potable water filters for rural masses. *Applied Innovative Research*, 1(3), 178-183. [I.F-0.84]
9. Roy, S., Ghosh, S., and Bhowmick, N. (2019). Mechanism of colloidal attachment on textile fibrous media. *Tekstilec*, 62(2), 101-109. [I.F-1.32]
10. Roy, S., Ghosh, S., and Bhowmick, N. (2018). Mechanism of bacterial attachment on textile fibrous media. *Journal of the Textile Institute*, 110(6), 916-923. 10.1080/00405000.2018.1533442. [I.F-1.88]
11. Roy, S., Ghosh, S., and Bhowmick, N. (2018). Application of colloidal filtration theory to the bacteria attachment in textile fibrous media. *Tekstilec*, 61(3), 171-178. [I.F-1.32]
12. Roy, S., Ghosh, S., Bhowmick, N., and Roychoudhury, P.K. (2018). Role of Physicochemical Factors on Bacterial attachment in Textile fibrous Media. *Water and Environment Journal*, 33, 21-30. DOI: 10.1111/wej.12365. [I.F-2.07]
13. Roy, S., Ghosh, S., and Bhowmick, N. (2018). Application of colloidal filtration theory on textile fibrous media: Effect of fiber orientation on bacterial removal efficiency and attachment. *Journal of The Institution of Engineers (India): E series*. 99 (1), 111-117. <https://doi.org/10.1007/s40034-018-0120-9>. [I.F-1.11]
14. Roy, S., Ghosh, S., Bhowmick, N. and Roychoudhury, P.K. (2016). Study the effect of denier and fiber cut length on Zeta Potential of Nylon and Polyester fibers for Sustainable Dyeing Process. *Journal of Environmental Research and Development*, 11(02), 392-297. [I.F-0.45]

15. Das A, Majumdar A, Roy S., (2016). Prediction of fabric hand characteristics using extraction principle. *Indian journal of fibre & Textile Research*. 41(1), 33-39. [**I.F-0.84**]
16. Ghosh S, Charry P, Roy S., (2014). Development of Warp Yarn Tension during Shedding: A Theoretical Approach, *Journal of the Institution of Engineers (India): Series E*, 96(2), 107-124. [**I.F-1.11**]

BOOK CHAPTERS

1. Sukumar Roy, Subrata Ghosh, S Wazed Ali (2023), “Textile Fibrous Media for Liquid Filtration” In the book of “Functional and Technical textiles”, Elsevier, ISBN:9780323915939.
2. Sukumar Roy, S Wazed Ali (2023), “Use of piezoelectric polymers for smart textiles”, in the book of “Functional and Technical textiles”, Elsevier, ISBN:9780323915939.
3. Subrata Ghosh, Roopam Chouhan, Sukumar Roy, and (2022). “Mechanics of formation in plain weft knitting machinery” in the book of “Advanced knitting Technology”, Elsevier, ISBN: 9780323855341.
4. Shubhankar maity, Sukumar Roy, Ashish Banerjee, (2022), “Nanotechnology in textiles” in the book of “Science and Application of Nano particles” Jenny Stanford Publishing. ISBN 978-9814267342.
5. Sukumar Roy, Syamal Maiti, (2021), “Advancement in Denim Dyeing” in the book of “Textile Dyes and Pigments: A Green Chemistry Approach”, Wiley –Scrivener, USA. ISBN:9781119904915

CONFERENCE AND POSTER PRESENTATIONS

1. Roy, S., Chowdhury, A., Ali, W., Joshi, M. (2023). “Studies on electroactive properties of PVDF/PEI blend films for energy harvesting” International Conference on Polymer for Advanced Technology, Goa, 23-25 February 2023.
2. Roy, S., Ali, W., Joshi, M. (2021), “Design of water filter using textile fibrous media” International Conference on Sustainable Growth in Textiles, Uttar Pradesh Textile Technology Institute, India, Kanpur, 19 -21 August 2021.
3. Roy, S., Ghosh, S., and Bhowmick, N. (2019). “Contribution of solution chemistry on bacterial attachment in textile filters media during liquid filtration”. 2nd International conference on Emerging Trends in Traditional and Technical Textiles, 1st to 3rd November.
4. Roy, S., Ghosh, S., and Bhowmick, N. (2018) “Scientific design of potable water filter for the rural Masses (using textile fibrous media)” in Rural Innovators Startup Conclave (RISC-2018) on 30th -31st August, Hyderabad.

5. Roy S, (2016). “Effect of fiber parameter on electro-kinetic properties in aqueous medium” International conference on redefining textiles cutting edge technology of future, April 8-10, 2016. NIT Jalandhar.

WORKSHOP/ SEMINAR ATTENDED

1. Short Term course on “Clothing Comfort” from 2nd November to 6th November 2019, NIT Jalandhar
2. Workshop on “Entrepreneurship and skill development” on 3rd May 2019, NIT, Jalandhar. Workshop on “Filter media characterization and technology transfer events”, December 15, 2014, NIT Jalandhar.
3. Workshop on “Filter media characterization and technology transfer events”, December 15, 2014, NIT Jalandhar.
4. Workshop on “Modeling and simulation of physical system”, April 22nd- 25th, 2013, NIT Jalandhar
5. National seminar on “Nonwovens and Technical Textiles”, October 5th -6th, 2012, NIT Jalandhar.
6. Workshop on” Air pollution control in industries”, February 24, 2012, NIT Jalandhar.

PhD RESEARCH WORK:

Title: Design of portable water filter to improve water quality for the rural masses

Supervisors: Dr. Subrata Ghosh & Dr. Niranjana Bhowmick

Description: Surface water collected from different sources are treated in designed filter media and it is observed that water quality like turbidity, colour, pH, and total dissolved solid and bacterial content in water come down within the permissible limit after the filtration. So, designed filter media may be used for the improvement of surface water quality close to the level of drinking water.

M.Tech THESIS

Title: Evaluation of Fabric Handle Value by Nozzle Extraction Method.

Supervisors: Dr. Apurba Das & Dr. Abhijit Majumdar

Description: Objective of the project is to study the handle characterizes of different type of fabrics by nozzle extraction method and to correlate with the various low stress mechanical properties (like bending, compression, thickness, roughness, friction) using the artificial neural network.

QUALIFYING EXAM:

- **GATE Rank: 49**

SCHOLASTIC ACHIEVEMENTS:

- **M. Tech Assistantship from MHRD** in Department of Textile Technology, IIT, Delhi.
- **Merit cum Means scholarships** during B. Tech, Govt. of West Bengal.

B. Tech PROJECTS

Study the thermal conductivity of cotton/polyester blend and find out the correlation between the blend ratio and thermal conductivity.

TECHNICAL SKILLS:

- Operating systems : Windows 10,
- Application software known : MS Office, Design Expert, Systat, Sigma Plot, Minitab, Origin.
- Languages known : Basic, C

LANGUAGE KNOWN

English, Hindi, Bengali

OTHER INTERESTS:

- Playing and watching cricket, football etc.

PERSONAL DETAILS:

Father's name	:	Mr. Deba Roy
Mother's name	:	Mrs. Ashima Roy
Date of Birth	:	7 th May, 1986
Nationality	:	Indian
Marital status	:	Married

I hereby declare that the above written particulars are true to the best of my knowledge and belief.

With best regards

(SUKUMAR ROY)

Place: Delhi