

ICAR-National Institute of Research on Jute & Allied Fibre Technology
12, Regent Park, Kolkata-700040

राष्ट्रीय पटसन एवं समवर्गी रेशा प्रौद्योगिकी अनुसंधान संस्थान
12, रीजेन्ट पार्क, कोलकाता - 700040

Profile

1. **Full Name:** Dr. Kartick Kumar Samanta
2. **Educational Qualification:** B.Tech. (Textile Technology, C.U.);
M. Tech. (Fibre Science & Tech., IIT-Delhi);
Ph.D. (Fibre Science & Tech., IIT-Delhi)
3. **Designation:** Scientist
4. **ARS Discipline:** Textile Chemistry
5. **Date of joining in ICAR:** 20-04-2010
6. **Date of Joining in ICAR-NINFET:** 25-11-2014
7. **Working experiences (in years)**
 - a. **Research:** 12 years
 - b. **Teaching:** Nil
 - c. **Industry:** Nil
8. **Area of work (Five areas only)**
 - a. Use of banana plant waste for textile colouration and finishing
 - b. Development of paper/ paper-board from different fibre and plant wastes
 - c. Softening finishing different natural fibre-based textile
 - d. Chemical pre-treatment of fibre to improve processability/ value addition
 - e. Sustainable textile chemical processing
9. **Contact details**
 - a. **Mobile No:** 033-24212115/16/17
 - b. **Email (Including ICAR email):** karticksamanta15@gmail.com OR
kartick.samanta@icar.gov.in
10. **Number of project completed (As PI)**
 - a. **04 as PI**
 - b. **07 as Co-PI**
11. **Professional Achievements (Awards / Best Papers/Appreciation)**
 - a. K. K. Samanta, Fellow of Textile Institute (Chartered Member of The Textile Institute), Manchester, UK (CText FTI)
 - b. K. K. Samanta received the P. B. Sarkar Award for Best Scientific Worker for 2021 (scientist category) by ICAR-NINFET, Kolkata



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- c. S. N. Chattopadhyay, N. C. Pan, A. N. Roy, K. K. Samanta, Best Paper Award in the Textile Engineering Division in 35th Indian Engineering Congress (Centenary Year in 2020), The Institution of Engineers (India), December 18-20, 2020.
- d. K. K. Samanta, Best Oral Talk Award in International Conference on Natural Fibres, 1-3rd August, 2014, Kolkata, India.
- e. K. K. Samanta, Best Oral Talk Award in Crop Improvement in First International Conference on "Bio-resource and Stress Management", 6-9th February, 2013, Kolkata, India.
- f. K. K. Samanta, Best Poster Award in 100th Indian Science Congress in Material Science, 3-7th January, 2013, Kolkata, India.

12. List of publication (Numbers only)

Research papers in National journal (NAAS rated) : 9

Research papers in International journal (NAAS rated): 21

Popular articles: 11

Book Chapter: 18

Books Edited: 04

Seminar Papers: 22

Bulletin: 01

13. Seminar presentation (numbers only)

a) Invited papers: 05

b) Research papers: 18

14. Patents Applied (Numbers only): 04

15. Patents Granted (Details): Nil

16. Technology Commercialised (five with details) : Nil

17. List the five major achievements in the career

- a. Fire retardant finishing of natural fibre-based textile using plant extract
- b. Development of paper and paper board-based products for alternative use of plastic/metals
- c. Development of jute/banana fibres blended home textile
- d. Modification of plant fibre better processing/making value added products
- e. Low temperature bleaching of jute fabric using peracetic acid (PAA).

18. List the 10 best publications in the whole career (Details)

- a) Samanta, K.K., I. Mustafa, Sayandeep Debnath, E. Das, G. Basu and S. K. Ghosh, "Study the Thermal Insulation Performance of Layered Jute Non-woven: A Sustainable Material", *Journal of Natural Fibres*, <https://doi.org/10.1080/15440478.2020.1856274>.
- b) Samanta, K.K., Roy, A.N., Baite, H., Debnath, S., Ammayappan, L., Nayak, L. K., Singha, A., and Kundu, T.K., 2021. Applications of Nettle Fibre in Textile: A Brief Review, *International Journal of Bioresource Science*, 8 (1): 39-45.
- c) Bhowmick, M., S. Basak and Kartick K Samanta, Ramie degum liquor: Wastage bio-macromolecule for making thermally stable functionalize polyester fabric, *Polymer Degradation and Stability* 200 (2022) 109959
- d) S. N. Chattopadhyay, N. C. Pan, A. N. Roy, Kartick K. Samanta, "Low Temperature Bleaching of Jute using Peracetic Acid: A Novel Process", *AATCC Journal of Research*, 9(2) 2022, 98-105.
- e) Teli, M.D., Pandit, P., Samanta, K. K., Basak, S., and Gayatri, T.N., 2021. Salt-free and low temperature colouration of silk using He-N₂ nonthermal plasma irradiation, *Journal of Cleaner Production* 296: 126576.
- f) S. N. Chattopadhyay, N. C. Pan, A. N. Roy, K. K. Samanta and A. Khan, "Hybrid bleaching of jute yarn using hydrogen peroxide and peracetic acid", *Indian Journal of Fibre & Textile Research*, 46, 2021, 78-82.
- g) S. N. Chattopadhyay, N. C. Pan, A. N. Roy, Kartick K. Samanta, and A. Khan, "Two-Step Bleaching of Jute Yarn and Fabric Using Hydrogen Peroxide and Peracetic Acid", *Journal of Natural Fibers*, 2022, 19 (3), 2022, 1159–1167
- h) Samanta, K.K., Joshi, A. G., Jassal, M., and Agrawal, A.K., 2021. Hydrophobic functionalization of cellulosic substrate by tetrafluoroethane dielectric barrier discharge plasma at atmospheric pressure, *Carbohydrate polymers*, 253: 117272
- i) S. N. Chattopadhyay, N. C. Pan, A. N. Roy and K. K. Samanta, "Pretreatment of jute and banana fibre – its effect on blended yarn and fabric", *Journal of Natural Fibres*, 17(1), 2020, 75-83.
- j) S. Basak and Kartick K. Samanta, "Thermal behaviour and the cone calorimetric analysis of the jute fabric treated in different pH condition", *Journal of Thermal Analysis and Calorimetry*, 135 (6), 2019, 3095-3105.

19. Training program attended (Numbers only): 7

20. Training program organized (Numbers only): 05

21. Professional Affiliations (Details)

Life member in following Professional Societies

- (i) Association of Carbohydrate Chemist & Technologist (India)
- (ii) The Institution of Engineers (India)
- (iii) The Indian Natural Fibre Society
- (iv) The Textile Association (India)
- (v) The Indian Science Congress Association (ISCA) – Life Membership
- (vi) Asian Polymer Association (APA) – Life Member