



MD EMAN TALUKDER

Guest Research Fellow

Machine learning approach for wastewater treatment, molecules and gas separation by membrane
Institute on Membrane Technology, CNR, University of Calabria, Rende, CS, 87036 Cosenza
(Italy)

Bangladeshi (+39) 3509759581 Date of birth: 01/03/1992: emant92@gmail.com

Interests

- New material and particles synthesis (MOFs), Catalysis, application, and Nanomaterials
- Fabrication of sustainable fiber materials and application in the textile sector. UV Protection dyeing and synthesis of natural dyes, Eco-friendly Dyeing.
- Fabrication and improvement of the nanofiber membrane performance for surgical masks, energy storage and wastewater treatment.

Education background

(2022- April, 2023) Research Fellow (six months)
Machine learning approach for wastewater treatment, molecules and gas separation by
membrane
Institute on membrane Technology, CNR (Italy). Supervisor **Dr. Alberto Figoli**

2018-2022 **Doctor of Philosophy in Physical Chemistry (Discipline nanofiber membrane materials and macromolecules separation)**
CAS-TWAS President's Fellowship Programme, by Shenzhen Institute of Advanced
Technology, CAS (China), Institute on Membrane Technology, CNR (Italy).
Recognition: CGPA-3.94 out of 4.00
Project-Fabrication and improvement of the flat and nanofiber membrane performance
for wastewater filtration, water purification, macromolecules separation, biomedical
applications and heavy metal adsorption.

2015-2017 **M.Sc. In Textile Engineering (Discipline Textile Chemistry)**
College of Chemistry and Chemical Engineering, Wuhan Textile University,
Wuhan (430200), Hubei, P. R. China
Recognitions: CGPA-3.88 out of 4.00
Project- Novel approach to rejoin the carbon fiber tow by fiber splicing equipment,
and Preparation of layer-by-layer electrospun membrane-based wound dressing for skin
injuries treatment.

2010-2013 B.Sc. In Textile Engineering (Wet Processing Technology)
Southeast University, Dhaka, Bangladesh.
Recognitions: CGPA-3.81 out of 4.00
Project- Causes behind Batch to Batch Shade Variation and their Remedies (Knit & Yarn
Dyeing) and Research on process control parameters for different fabrics in Dyeing.

Cover Courses: Chemistry; Dyestuff Chemistry; Modern Textile Dyeing and Finishing Process;
(Dyeing) Dyeing and Finishing Auxiliaries and their Application; Fiber Chemistry and Physics;
Functional Fiber and Textiles; Wet Processing Technology- I, II, III, IV (dyeing);
Environmental Pollution & Its Control; Textile Physics- I, II

Employment History – General

Position	Trainee Officer (Internship).
Organization	Knit Concern Group. 100% Export Oriented Composite Knitwear Industry. 62, Water Works Road, Godnail, Narayangonj-1400, Bangladesh.
Duration	1 st Oct 2013 to 31 st Dec 2013
Project name	Analysis of dyeing Batch to batch shade variation and their remedies.

Job Responsibilities

- To assist in product sample coordination, organization, and maintenance.
- To learn how to communicate with the buyer and production floor staff.
- To learn how to purchase garments accessories.

- To learn how to issue dyes and chemicals and check out it
- To learn the fabric finishing process.
- To learn how to make a plan for making complete garments.

Position Production & Planning Executive (Print section).
Organization Masco printing & Embroidery ltd (Factory: 15/4 M.I Khan Bhaban, Tongi, Gazipur).
Duration 10th April 2014 to 30th Sept 2015

Job Responsibilities

- To supervise and monitor the production floor.
- To plan, execute, and follow up the production activities and control the production quality. Overall supervision of the Dyeing and printing floor..
- At last, the production officer reports the production activities to the senior production officer.
- To check the water quality in the effluent treatment plant (ETP).

Position International Fabric and Chemical Sourcing, and Domestic Marketing Manager
Organization Relationtrade International ltd. Dhaka, Bangladesh, 1229.
Duration: March 2020 to Sept 2021

Job Responsibilities

- Contacted international fabric supplier.
- Supply chain maintenance and volume change service.
- Product verification, Price negotiation, Quality assurance, Lead-time calculation, Product supplication, Quality approval from the buyer, Factory production management according to lead time, Bulk sample approval from the customer, waiting for customer feedback, Delivery, Payment assurance checked.

Academic activities

2015-2017 Volunteer work, Department of International Cooperation & Development and International Student's Affairs Office at Wuhan Textile University
2016 Member of the Textile Institute, UK. Member no: 3068.
2016 Member, English Language Club, Wuhan Textile University, China.
2010 Member, Textile Club, Southeast University, Bangladesh
2011 Member, Southeast University Alumni Association, Bangladesh.

Specialized training

2014 Bangladesh Fire Service and Civil Defence Directorate, Masco Printing and Embroidery Ltd. SI No: 137022, Group No: 3630.
2010 Workshop practice tutorial course training, Southeast University.

Honors and Awards

03/7/2023 International Excellent graduate award from Chinese Academy of Sciences, China.
06/7/2022 International Excellent student award from Chinese Academy of Sciences, China.
14/1/2022 Excellent student award from Guangzhou institute of Advanced Technology, China.
2018-2022 CAS-TWAS President's Fellowship Programme by Chinese Academy of Sciences (China) and The World Academy of Sciences (Italy).
2016 Hubei Provincial Government Scholarship for Excellent International students (Ministry of Education, China Scholarship Council).
2015 Wuhan Textile University President Scholarship 2015 (Master's Program).
2010-2013 Merit based Tuition Waiver Scholarship, Southeast University.

Honors Society CELP (Certificate in English Language Proficiency), Good Award-2010
Award SI No: 3824, ID No: 2010000400106. Southeast University.

Computer skills Windows & Mac, Microsoft Office- Word, Excel Worksheet, PowerPoint, Cam draw 3D, Endnote, Origin Pro, Minilab, minitab, AutoCAD, Photoshop, Matlab, Guassian 6.0.

Language Proficiency

Bengali (Native), English (Proficient), Mandarin/Chinese (Intermediate), Hindi and Urdu (Proficient), and Italian (Basic).

Professional skills Efficient in strong documentation, writing & technical reporting. Articulated teamwork with excellent leadership capabilities

Communication skills

Excellent communication ability with both native & international persons gained through my academic & professional experience

Employment History – Assistantship and Researcher

2021-2022 Guest Research Assistant (**Dr. Alberto Figoli**)
Institute on Membrane Technology, CNR, Italy
New material and particles synthesis (MOFs), Catalysis, membrane application

Medium of Instruction

My under and post-graduation study medium of instruction and examination is English.

Publications and Patents

Google Scholar <https://scholar.google.com/citations?hl=en&user=x7VNgYsAAAAJ>
ORCID ID [https://orcid.org/\(0000-0003-4755-5639\)](https://orcid.org/(0000-0003-4755-5639))
ResearcherID <https://www.researchgate.net/profile/Md-Eman-Talukder>

Declaration

I hereby declare to the best of my knowledge and belief that this CV correctly describes my qualifications, experiences, and me.

References

- **Professor Hongchen Song (Doctoral Program professor)**
Guangzhou Institute of Advanced Technology, SIAT, CAS (China)
Cell: +86-15989160106 and Email: hc.song@giat.ac.cn
- **Dr. Alberto Figoli**
Institute on Membrane Technology, CNR, Italy
Email: a.figoli@itm.cnr.it, Cell: +393458191054
- Dr. Mohammad Mahbubul Hassan
Professor
Fashion, Textiles and Technology Institute, University of the Arts London, 20 John Prince's Street, London W1G 0BJ, UK
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Date: 28/09/2023



Signature

PUBLICATIONS

1. Pervez, M.N., Jahid, M.A., Mishu, M.M.R., **Talukder, M.E.**, Buonerba, A., Jiang, T., Liang, Y., Tang, S., Zhao, Y., Dotto, G.L. and Cai, Y., 2023. Tuning the surface functionality of polyethylene glycol-modified graphene oxide/chitosan composite for efficient removal of dye. *Scientific Reports*, 13(1), p.13460.
2. Pervez, M.N., Yeo, W.S., Mishu, M., Rahman, M., **Talukder, M.E.**, Roy, H., Islam, M.S., Zhao, Y., Cai, Y., Stylios, G.K. and Naddeo, V., 2023. Electrospun nanofiber membrane diameter prediction using a combined response surface methodology and machine learning approach. *Scientific Reports*, 13(1), pp.1-14.
3. **Talukder M. E.**, Alam, F., Talukder R. R., Mishu, M., Rahman, Pervez, M.N., Song, H., Russo F., Galiaono F., Jiabao L., Stylios, G.K., Figoli, A., Naddeo, V., Fabrication of

polyethersulfone/polyethyleneimine porous membrane for sustainable separation of protein in a water media, **Environmental Science: Water Research & Technology**, May, 2023, <https://doi.org/10.1039/D3EW00108C>

4. Juthi, A.Z., Li, F., Wang, B., Alam, M.M., **Talukder, M.E.** and Qiu, B., 2023. pH-Responsive Super-Porous Hybrid Hydrogels for Gastroretentive Controlled-Release Drug Delivery. **Pharmaceutics**, 15(3), p.816. <https://doi.org/10.3390/pharmaceutics15030816>
5. Waseem Iqbal, **Md Eman Talukder**, Electrical properties of TiO₂/CO₃O₄ core/shell nanoparticles synthesized by sol-gel method, **Journal of Nanoparticles and Biostructures**, 18(1) 2023. DOI: [10.15251/DJNB.2023.181.403](https://doi.org/10.15251/DJNB.2023.181.403)
6. Hasan, K.M., Pervez, M., **Talukder, M.E.**, Sultana, M., Mahmud, S., Meraz, M., Bansal, V. and Genyang, C., 2019. A novel coloration of polyester fabric through green silver nanoparticles (G-AgNPs@ PET). **Nanomaterials**, 9(4), p.569. <https://doi.org/10.3390/nano9040569>
7. **Talukder, M. E.**, Pervez, M. N., Jianming, W., Stylios, G. K., Hassan, M. M., Song, H., Naddeo, V., Figoli, A., Ag nanoparticles immobilized sulfonated polyethersulfone/polyethersulfone electrospun nanofiber membrane for the removal of heavy metals, **Scientific Reports**, 12 (2022) 5814. <https://doi.org/10.1038/s41598-022-09802-9>
8. **Talukder, M.E.**, Pervez, M.N., Jianming, W., Gao, Z., Stylios, G.K., Hassan, M.M., Song, H., and Naddeo, V., 2021. Chitosan-functionalized sodium alginate-based electrospun nanofiber membrane for As (III) removal from aqueous solution. **Journal of Environmental Chemical Engineering**, 9(6), p.106693. <https://doi.org/10.1016/j.jece.2021.106693>
9. **Talukder, M.E.**, Alam, F., Mishu, M., Rahman, M., Pervez, M., Song, H., Russo, F., Galiano, F., Stylios, G.K., Figoli, A. and Naddeo, V., 2022. Sustainable Membrane Technologies for By-Product Separation of Non-Pharmaceutical Common Compounds. **Water**, 14(24), p.4072. <https://doi.org/10.3390/w14244072>
10. Pervez, M.N.#, **Talukder, M.E.#**, Mishu, M.R., Buonerba, A., Del Gaudio, P., Stylios, G.K., Hasan, S.W., Zhao, Y., Cai, Y., Figoli, A. and Zarra, T., 2022. Fabrication of polyethersulfone/polyacrylonitrile electrospun nanofiber membrane for food industry wastewater treatment. **Journal of Water Process Engineering**, 47, p.102838. <https://doi.org/10.1016/j.jwpe.2022.102838>
11. Pervez, M.N.#, **Talukder, M.E.#**, Mishu, M.R., Buonerba, A., Del Gaudio, P., Stylios, G.K., Hasan, S.W., Zhao, Y., Cai, Y., Figoli, A. and Zarra, T., 2022. One-step fabrication of novel polyethersulfone-based composite electrospun nanofiber membranes for food industry wastewater treatment. **Membranes**, 12(4), p.413. <https://doi.org/10.3390/membranes12040413>
12. Pervez, M., Mishu, M.R., **Talukder, M.E.**, Stylios, G.K., Buonerba, A., Hasan, S.W., Cai, Y., Zhao, Y., Figoli, A., Zarra, T. and Belgiorno, V., 2022. Electrospun nanofiber membranes for the control of micro/nanoplastics in the environment. **Water Emerging Contaminants & Nanoplastics**, 1(2), p.10. <https://oaepublish.com/wecn/article/view/4960>
13. **Md Eman Talukder**, Mst. Monira Rahman Mishu, Md. Nahid Pervez, Alessia Giannattasio, Md. Yeasin Pabel, Antonio Buonerba, Alfonso Grassi, Md. Mominul Islam, Rocco Di Girolamo, Hongchen Song, Alberto Figoli, Vincenzo Naddeo, Ag nanoparticles immobilized polyethersulfone-polyvinylpyrrolidone composite electrospun nanofiber membrane for highly efficient wastewater treatment, submitted
14. Wang, J., Song, H., Ren, L., **Talukder, M.E.**, Chen, S. and Shao, J., 2022. Study on the Preparation of Cellulose Acetate Separation Membrane and New Adjusting Method of Pore Size. **Membranes**, 12(1), p.9. <https://doi.org/10.3390/membranes12010009>
15. **Talukder ME**, Hasan KF, Wang J, Yao J, Li C, Song H. Novel fibrin functionalized multilayered electrospun nanofiber membrane for burn wound treatment. **Journal of Materials Science**. 2021 May 3:1-21. <https://doi.org/10.1007/s10853-021-06123-6>

16. **Talukder, M. E.**, Alam, F., Pervez, M. N., Jiangming, W., Hassan, F., Stylios, G. K., & Song, H. (2022). New generation washable PES membrane face mask for virus filtration. **Nanocomposites**, 8(1), 13-23. <https://doi.org/10.1080/20550324.2021.2008209>
17. **Talukder, M.E.**, Pervez, M.N., Mishu, M.M.R., Hasan, K.F., Shafiq, F., Zhao, Y., Cai, Y., Song, H., Mondal, M.I.H., Stylios, G.K. and Naddeo, V., 2023. Sustainable and eco-friendly treatment of pharmaceuticals wastewater. **In The Treatment of Pharmaceutical Wastewater** (pp. 329-346). Elsevier.
18. Datta, M.K., **Talukder, M.E.**, Md Faisal, A., Sarker, A. and Jiang, H., 2021. The Sustainable Coloration of Wool Fabric Using Naturally Extracted Dyes from Sappan Heartwood. **Journal of Natural Fibers**, pp.1-15. <https://doi.org/10.1080/15440478.2021.1982825>
19. Pervez M. Stylios G. Buonerba A. Hasan S. Cai Y Zhao Y. **Talukder M. E.** Song H. Zarra T, 2021, Electrospun nanofiber membrane, green chemistry, clean water, Fenton-like, methylene blue, **7 International conferences on environmental science and technology**, 4 Sep 2021.
20. **Md. Eman Talukder***, Md. Kamruzzaman, MithonMajumder, Md. Shakhawat Hossain Rony, Monoroma Hossain, Santanu Das, Effects of Salt Concentration on the Dyeing of Various Cotton Fabrics with Reactive Dyes, **International Journal of Textile Science**, 2017,6(1), P: 7-14. [doi:10.5923/j.textile.20170601.02](https://doi.org/10.5923/j.textile.20170601.02)
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22. Sudip Kumar Lahiri, Md. Kamruzzaman, **Md. Eman Talukder**, Md. Nahid Pervez, Prof. Quan Heng, Synthesis of a novel PE-3030 based WPUA hybrid binding substance for pigment printing, **Oriental Journal of Chemistry**, Vol:33, 2017. DOI : <http://dx.doi.org/10.13005/ojc/330501>
23. Mohammad A H, Ashraful Isalm, Md. Z R, Md. Hasan, **Md. Eman Talukder**, Kamrul H, A comprehensive analysis of the efficacy of antimicrobial textiles, **International Journal of Textile Science**, 2015,4(6). <http://article.sapub.org/10.5923.j.textile.20150406.02.html>
24. Md. Kamruzzaman, **Md. Eman Talukder***, Manikandan N, Md. F H, Asaduzzaman, Muhammad Usman, Optimum concentration of cross-linking agent for crease-resistant finishing using DMDHEU on knit and woven fabric in the field of ease care durable press, **International Journal of Textile Science**, 2016, 5(4): 74-81. <http://article.sapub.org/10.5923.j.textile.20160504.02.html>
25. Md. Kamruzzaman, K. M. Faridul H, Md. **Eman Talukdar***, M N, Implementation of a Quality Diagnosis and Developing a Database for Dyeing Problems, **International Journal of Polymer and Textile Engineering**, 2016, 3(4), 1-11. <http://www.internationaljournalsrsg.org/IJPTE/V3I4P101.html>
26. Md. Kamruzzaman, **Md. Eman Talukder***, M N, Md. Forhad H, Asaduzzaman¹, Dr. Engr. Md. Zulhash U, Cost efficiency process of reactive Dyeing in the utilization cotton material of the dyeing production, **International Journal of Scientific Engineering and Research**, Vol 7(7) July-2016.<http://www.ijser.org/onlineResearchPaperViewer.aspx?Cost-Efficiency-Process-of-Reactive-Dyeing-in-the-Utilization-Cotton-Material-of-the-Dyeing-Production.pdf>
27. Md. Kamruzzaman, **Md. Eman Talukder**, Muhammad Usman, Mazharul Islam, MstZakia Sultana. Optimization of time, water, and energy through using a regulator with hydrogen peroxide in the exhaust bleaching process. **American Journal of Energy and Environment**, 2016, Vol 1 (1), 17-24<http://www.ivyunion.org/index.php/energy/article/view/1009/0>
28. *Md. Forhad Hossain, Md. Asaduzzaman, kamruzzaman Md., **Md. Eman Talukder**, Mohammad Raza Miah, HengQuan, Application of New Synthetic Fifth Generation Thickeners for Printing Cotton Fabric Cotton Reactive Dyes*, **American Journal of polymer science and Engineering**, 2016, Vol 4(1), 123-132. http://ivyunion.org/index.php/ajpse/article/view/1033/pdf_32

UNDER REVIEW AND ACCEPTED

1. **Md Eman Talukder**, Hongchen Song, Francesca Russo, Francesco Galiano, Alberto Figoli, Hydrolyzed Chitosan/polyvinyl Alcohol immobilized polyethersulfone Membrane with Green solvent for Enhancement of the Hydrophilic and Antifouling Properties. **Euro membrane conference 2022.**

CONFERENCE PAPER

1. Md. Kamruzzaman, **Md. Eman Talukder**, Md. Nahid Pervez, Asif Kamal, YingjieCai, (2016), "A Novel approach to rejoin the carbon fiber tow by fiber splicing equipment". **3rd International Conference on Material Engineering and Application (ICMEA 2016), Atlantis Press, Vol (103), P. 391-5**
2. Md. Kamruzzaman, Md. Nahid Pervez, **Md. Eman Talukder**, Asif Kamal, YingjieCai, (2016), "Design a new machine to improve the quality of conductive yarns for smart textile". **3rd International Conference on Material Engineering and Application (ICMEA 2016), Atlantis Press, Vol (103), P. 396-401**
3. Md. Nahid Pervez, Umarsharif Y. Inamdar, **Md. Eman Talukder**, Sakil Mahmud, Md. Ahsan Habib, Md. Kamruzzaman and Yingjie Cai: Eco-friendly coloration of linen to ameliorate its practical approach. *MATEC Web of Conferences* 108, 03002 (2017).
4. Md. Nahid Pervez, **Md. Eman Talukder**, ManojKantiDatta, MdShipan Mia, Ashaduzzaman, Meer MdRasel Khan, YingjieCai, Lina Lin, The Influence of Annealing Process on Crystallinity and Structural Properties of Cotton/Spandex Fabric, *The International Conference on Composite Material, Polymer Science and Engineering (CMPSE2017)*, **Volume 130**, 2017.
5. Md. Nahid Pervez, Umarsharif Y. Inamdar, **Md. Eman Talukder**, Md. Ziaur Rahman, Mst. MuneraKhatun, Mst. Zakia Sultana, YingjieCai and Lina Lin, Discussion on Avoidance of Staining Problem in Cotton/CDPET Dyeing, *The International Conference on Composite Material, Polymer Science and Engineering (CMPSE2017)*, **Volume 130**, 2017
6. M N Pervez, **M E Talukder**, F Shafiq, K M F Hasan, M A Taher, M Meraz, Y Cai, and Lina Lin, Effect of heat-setting on UV protection and antibacterial properties of cotton/spandex fabric *Materials Science and Engineering* 284 (2017), DOI:10.1088/1757-899X/284/1/012010
7. Mr. Md. Nahid Pervez, Prof. George K Stylios, Dr. Antonio Buonerba, Prof. Shadi Wajih Hasan, Prof. Yingjie Cai, Prof. Yaping Zhao, Mr. **Md. Eman Talukder**, Prof. Hongchen Song, Prof. Tiziano Zarra, Prof. Vincenzo Naddeo, Ultrasound-assisted Fenton-like degradation of methylene blue using electrospun nanofibrous membranes, *Advanced Oxidation Processes*, 17 International Conference on Environmental Science and Technology, 2021

BOOK CHAPTER

1. Md Nahid Pervez, K.M. Faridul Hasan, **Md Eman Talukder**, Prof Yingjie; Cai Handloom Sustainability and Culture (Vol: product development, design, and environmental aspects); *International Journal of Fashion Studies*, Springer.
2. Pervez, M.N., Hossain, M.Y., **Talukder, M.E.**, Faisal, A.M., Hasan, K.F., Islam, M., Ahmed, F., Cai, Y., Stylios, G.K., Naddeo, V. and Mondal, M.I.H., 2022. Nanomaterial-based smart and sustainable protective textiles. In *Protective Textiles from Natural Resources* (pp. 75-111). Woodhead Publishing.