Dr Amal Kanti Deb
Associate Professor
Institute of Leather Engineering and Technology
University of Dhaka, Dhaka-1209, Bangladesh.
Email: debak.ilet@du.ac.bd, debak.707@gmail.com
Phone: +88 018194709393 (M)

PROFESSIONAL STATEMENT

- As a dedicated and versatile researcher, professional and academician with over 23 years of academic and 15 years of active research experience specializing in Environmental and Materials Science and Engineering, devoted to develop nano-functional materials for sustainable environmental remediation.

- Published 42 research items including journal articles, book chapter, conference presentations, proceedings, and three thesis on exploring and modification of natural clay minerals, innovative materials synehsis including clay nanocomposites, engineered biochar, hydrogel and aerogels, wastewater treatment, solid waste managment, waste to resource, organic pollutants and trace elements contamination, remediation, contaminant-microbe interactions, occupational health and safety (OHS), GHGs remediation, life cycle assessment (LCA) and carbon footprint.

- My doctoral research on "**Halloysite Templated Nano Functional Materials for the Remediation of Pollutants from Wastewater**" has gained significant global attention, being cited by many international high impact journals. I published eight (08) research articles in high impact Q1 journals from my PhD research.

- Contributed as a postdoctoral research associate in a research grant worth AU $473,268 with a partner organization CRC CARE Pty Ltd, Australia and the University of Newcastle, Australia.

- Contributed as a short term national consultant in a project of Government of Bangladesh worth $87.64 million USD for tannery relocation including common effluent treatment plant (CETP) and solid waste managment.

- Throughout academic and professional journey, my outstanding track record has been recognised by several achievements including:

  1) Appointment as a Postdoctoral Research Associate at The University of Newcastle, Australia.
  2) Prestigious Research Grant Award from the Clay Minerals Society (CMS), USA.
  3) PhD Scolarship (4 years) offered by Science and Technology Fellowship Trust, Bangladesh, based on merit and outstanding academic achievement.
  4) Two CMS, USA full conference grants to attend CMS internaltional conferences in USA and Turkey.
  5) Two international conference scholarships, offered by Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Pty Ltd, Australia.
  6) Professor Nurul Afsar Khan post graduate research fellowship from Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh.
  7) Scholarship from Ministry of Education, Bangladesh for diploma study in Chennai, India.
  8) Scholarship from ITC Jeneva for Research Instrumentation Training in Mumbai, India.
  9) Scholarship from Ministry of Education, Bangladesh for post graduate training in Chennai, India.
  10) Academic promotions from Lecturer to Associate Professor at the Institute of Leather Engineering and Technology (ILET), University of Dhaka (DU), Bangladesh.
  11) Research Excellence Award by the University of Dhaka, Bangladesh in May 2025.

EDUCATIONAL QUALIFICATIONS

- **Doctor of Philosophy (PhD)** in Environmental Remediation, The University of Newcastle, Australia**,** November 2022.

  Thesis Title: **Halloysite Templated Nano Functional Materials for the Remediation of Pollutants from Wastewater** (https://www.researchgate.net/publication/392840377).

- **Master of Philosophy (MPhil)** in Applied Chemistry and Chemical Engineering, Univerrsity of Dhaka, Dhaka-1000, Bangladesh, January 2015.

  Thesis Title: **Treatment of tannery solid wastes of Bangladesh for their potential Utilisation**.

- **Post Graduate Diploma** in Leather Garmanets Manufacture**,** Indian Institute of Leather products, Chennai, India, 2003 (1st class with distinction).

- **Bachelor of Science (B.Sc. Engg.)** in Leather Technology, Institute of Leather Engineering and Technology, University of Dhaka, Dhaka-1000, Bangladesh, January 2001 (1st class 2nd).

AWARDS AND ACHIVEMENTS

- **International Cleanup Conference Scholarships in 2019 & 2022**, For Students and Early Career Researchers (AU$ 1,500 each year), offered by CRC CARE Pty Ltd, Australia.

- **International Clay Minerals Full Conference Grants in 2020 and 2022** for students and early **career** researcher (US $ 2500 each year), offered by CMS USA.

- **ECR Research Grant (**US $ 3700), offred by the Clay Minerals Society (CMS) USA, June 2021.

- **Science and Technology Fellowship** (AU$ 161,840 tuition fee, AU$ 98,322 living allowance, AU$ 14,420, includes visa, medical, health insurance, four way air travell expenses, book, seminar fee, thesis fee) for Doctor of Philosophy offered by The Science and Technology Fellowship Trust, Ministry of Science and Technology, Bangladesh, (August 2018- July 2022).

- **Professor Nurul Afsar Khan Post Graduate Research Fellowship** (US $ 5000), offered by Bangladesh Council of Scientific and Industrial Research (BCSIR), Ministry of Science and Technology, Government of Bangladesh (Ocotober 2013- September 2015).

- **ECR Research Pitch award** from Global Centre for Environmental Remediation, the University of Newcastle, Australia (June 2022).

- **Research Excellence Award** from the University of Dhaka in recognition of publications in Q1 journals (May 2025).

WORK EXPERIENCE

Associate Professor | Institute of leather Engineering and Technology, University of Dhaka, Dhaka-1209, Bangladesh (https://du.ac.bd/faculty/faculty_details/ILET/2304).
June 2023 – to date

Activities

- Conducting theoretical and practical classes at undergraduate and graduate levels
- Supervising research students at graduate and post graduate levels.
- Developing outcome-based education (OBE) curriculum for Diploma, B.Sc. and M.Sc. programs.
- Leading research projects and development activities of ILET.
- Conducting research and skill development training including training of trainers (ToT).
- Advocacy and consultancy for Occupational Health and Safety (OHS), Chemical Management, Effluent Treatment, Waste Management, LCA and Carbon Footprint Measurement.
- Research and Training Advisor, sudent advisor at ILET, University of Dhaka, Bangladesh.

Achievements

- Preparation of nano-functional and activated carbonaceous materials from chrome containing solid wastes for the treatment of tannery dye wastewater: a circular economy based approach (ongoing).
- Synthesis of graphene derivatives and chromic oxide nanoparticles from chrome shaving dusts: A circular economy based approach (ongoing).
- Preparation of bio-fertilizer from tannery solid wastes using enzymatic co-fermentation method (ongoing).
- Preparation of chrome nano-pigment using chrome sludge from chrome recovery plant of common effluent tretament plant (CETP) in Savar tannery estate, Dhaka, Bangladesh (completed).
- Valorisation of tannery solid waste for the treatment of tannery dye wastewater based on circular economy approach (completed).
- Extraction of Natural lac dye for shoe upper leather dyeing (completed).
- Assessment of indoor environmental qualliy of footwear and leather goods industries in Bangladesh (completed).

Research Associate | The University of Newcastle (UoN), Callaghan, NSW 2308, Australia,
8 February 2022 to 3 February 2023

Activities

- Conducting research in collaboration with supervisors and industry partner on exploring the composition of Australian kaolinits clays from seven deposits.
- Developing the protocol for the systematic characteristics analysis of seven clays using advanced analytical isntruments including STEM, FSEM, EDX, XRD, XPS, NMR etc.

- Developing the sysnthesis methodology to fabricate Australian kaolinite clays with nanomaterials to produce clay-nano composites and their complete characterizations.
- Application of clay-nanocomposites for the rmedediation of greenhouse gases at lab scale using Isorb gas adsorption analysis.
- Evaluating the performance of materials in gas sorption including regeneration and reusibility.
- Application of used clay-nanocomposite after gas sorption in clean up of wastewater.
- Data analysis and report preparation, presentation to industry and project partners, and preparation of manuscript for publication.

Assistant Professor | ILET, University of Dhaka, Dhaka-1209, Bangladesh
(https://du.ac.bd/faculty/faculty_details/ILET/2304).
August 2017 – June 2023

Achievements

- Extraction of natural lac dye for leather dyeing and its economic and industrial viability.
- Studies of indoor environmental conditions in the footwear and leather goods industries of Bangladesh.
- Challenges evaluation for adoption of sustainable consumption and prodution (SCP) practices in footwear industry of Bangladesh: a DEMATEL approach.
- Workers' health and workplace condition evaluation (WCE) of the footwear industries in Bangladesh.
- Assessment of noise, temperature, light intensity and their impacts on workers in leather products and footwear industries in Bangladesh.
- Resource addition to leather industry: adhesive from chrome shaving dust.

Lecturer | ILET, University of Dhaka, Dhaka-1209, Bangladesh
(https://du.ac.bd/faculty/faculty_details/ILET/2304).
May 2001 – July 2017

Achievement

- Extraction of polypeptide solution from tannery solid waste (chrome shavings) and its application as poultry feed.
- Fatliquor preparation from karanja seed oil (Pongamia pinnata L.) and its application for leather processing.
- Development of hair-save unhairing method using organic thio compounds in pre-tanning stages of leather production.
- Professional trainer of chemical management, clean technology, waste managmement, good manufacturing process (GMP), sustainable consumption and production (SCP) and OHS.

ACADEMIC EXPERIENCE

Lecturer to Associate Professor | Institute of Leather Engineering and Technlogy, University of Dhaka, Dhaka-1209, Bangladesh (https://du.ac.bd/faculty/faculty_details/ILET/2304).
May 2001 – present

Performance

- Preparing and delivering lectures, tutorials, developing curricula and course material, setting questions, conductiong and grading exams, tests, and assignments.
- Preparing and conducting laboratory sessions for Bachelor and Master degree students.
- Collaborating with other academics and faculty members to improve teaching methods and expand knowledge for contemporary research.
- Conducting research, gathering experimental data and contributing to publications.
- Attending department and faculty meetings, workshops, conferences and seminars.
- Providing guidance, mentoring and supervision to Bechalor, Master and PhD students as required.
- Preparing and presentating research findings to the industry through written and oral platforms.
- Play active role in industry-acdemia collaboration.
- Present research outcomes in national and internation seminars and workshops.
- Serve as a Head of the Department, Department of Footwear Engineering, ILET, DU from 2007-2017.

NOTABLE RESEARCH FUNDING

SL	Title of the project	Role	Duration and Grant	Funding Source
1	Latin Halloysite for Greenhouse Gases (GHGs) Capturing and Utilisation.	Research Associate	2022-2023 AU $ 473,268	CRC CARE Pty Ltd, Australia.
2	Preparation of nano-functional and activated carbonaceous materials from chrome containing solid wastes for the treatment of tannery dye wastewater: a circular economy based approach.	Principal Investigator	Jukly 2023-June 2026 US$ 12,560	Bangladesh Bureau of Educational Information and Statistics (BANBEIS), Ministry of Education, Bangladesh.
3	Synthesis of graphene derivatives and chromic oxide nanoparticles from chrome shaving dusts: a circular economy based approach.	Principal Investigator	September 2024-August 2025 US$ 5,488	University Grants Commission , Bangladesh
4	Valorization of tannery solid waste for the treatment of tannery dye wastewater based on circular economy approach.	Principal Investigator	2023-2024 US$ 2439	University Grants Commission, Bangladesh.
5	Extraction of natural lac dye for leather dyeing and its economic and industrial viability.	Project Director	2017-2018 US$ 3615	Ministry of Science and Technology, Bangladesh

6	Studies of indoor environmental conditions in the footwear industries of Bangladesh.	Principal Investigator	2017-2018 US$ 1000	University Grants Commission, Bangladesh.

PROCESS DEVELOVED

- Development of heat reactivation device for footwear manufacture: a research and development project of Bangladesh Council of Scientific and Industrial Research (BCSIR), the project had been approved by BCSIR, ministry of science and technology on 04.12.2013.

PUBLICATIONS

Journal articles

1. Functionalization of halloysite nanotubes as remediation agents for organic and inorganic contaminants: Insights into synthesis routes, removal techniques, and eco-friendly perspectives, Science of The Total Environment, 989 (2025) 179771, **Amal Kanti Deb***, Masud Hassan, Bhabananda Biswas, Ravi Naidu, Yunfei Xi, Mohammad Mahmudur Rahman.

2. Comparative immobilization of 30 PFAS mixtures onto biochar, clay, nanoparticle, and polymer derived engineered adsorbents: Machine learning insights into carbon chain length and removal mechanism, Journal of Hazardous Materials, 490 (2025) 137742, Masud Hassan, Ravi Naidu, Fangjie Qi, Bing Wang, Liang Wang, Srinivasulu Asadi, **Amal Kanti Deb**, Jianhua, Yanju Liu*.

3. Mesoporous architectural magnetic halloysite-polymer beads for removing toxic streptomycin from water: A sustainable remediation approach, Ground Water for Sustainable Development, June 2024 (26) 101258, **Amal Kanti Deb***, Mohammad Mahmudur Rahman, Bhabananda Biswas, Yunfei Xi, Md. Rashidul Islam, Masud Hassan, Ravi Naidu.

4. Investigation of herbicides sorption-desorption using pristine and organoclays to explore the potential carriers for controlled release formulation, Chemosphere, October 2023,337, 139335, Santosh Kumar Paul, Paul, Yunfei Xi, Peter Sanderson, **Amal Kanti Deb**, Md Rashidul Islam, Ravi Naidu*.

5. Understanding Iron Impurities in Australian Kaolin and Their Effect on Acid and Heat Activation Processes of Clay, ACS OMEGA, 2023, 8, 5533−5544, Bhabananda Biswas* Md. Rashidul Islam, **Amal Kanti Deb**, Anthony Greenaway, Laurence N. Warr,and RaviNaidu.

6. Magnetite Nanoparticles Loaded into Halloysite Nanotubes for Arsenic(V) Removalfrom Water, ACS Applied Nano Materials, 2022, 5, 12063–12076, **Amal Kanti Deb**, Bhabananda Biswas, Mohammad Mahmudur Rahman, Yunfei Xi, Santosh Kumar Paul, and Ravi Naidu*.

7. Mechanistic insights of hexavalent chromium remediation by halloysite-supported copper nanoclusters, Journal of Hazardous Materials 421 (2022) 126812, **Amal Kanti Deb***, Bhabananda Biswas, Ravi Naidu, Mohammad Mahmudur Rahman*.

8. Role of beryllium in the environment: Insights from specific sorption and precipitation studies under different conditions, Science of The Total Environment, 838 (2022) 155698, Md. Rashidul Islam, Peter Sanderson, Timothy E. Payne, **Amal Kanti Deb**, Ravi Naidu.

9. Magnetically separable mesoporous alginate polymer beads assist adequate removal of aqueous methylene blue over broad solution pH, Journal of Cleaner Production 319 (2021) 128694, Masud Hassan, **Amal Kanti Deb**, Fangjie Qi, Yanju Liu*, Jianhua Du, Adam Fahy, Md Ariful Ahsan, Sanjai J. Parikh, Ravi Naidu.

10. Synthesis of environmentally benign ultra-small copper nanoclusters-halloysite composites and their catalytic performance on contrasting azo dyes, Applied Surface Science, 546 (2021) 149122, **Amal Kanti Deb**, Bhabananda Biswas*, Nirmal Goswami, Emily F. Hilder, Ravi Naidu, Mohammad Mahmudur Rahman*.

11. Experimental Study on the Removal of Chromium (III) Ions Using Synthesized Reduced Graphene Oxide (RGO), Textile & Leather Review, October 2023(6),543-558, Forhad Ahammed Bin AZAM, **Amal Kanti DEB**, Md. Delwar HOSSAIN, Manjushree CHOWDHURY*.

12. Modification of Footwear PVC Outsoles into Graphene Oxide-based PVC (PVC/GO) Soling Composites for the Enhancement for Better Physical Properties, Textile andLeather Review, June 2023, Md. Delwar Hossain, **Amal Kanti Deb**, Md. Mokarom Hossain, Forhad Ahammed Bin Azam, Manjushree Chowdhury.

13. Synthesis and Application of Graphene Oxide (GO) for Removal of Cationic Dyes from Tanner Effluents, Textile & Leather review, 2020, 146-157, Md. Israil Hossain, **Amal Kanti Deb**, Md. Zakir Sultan*, A. A. Shaikh, Manjushree Chowdhury*, Md. Rayhan Sarker.

14. Removal of Dye Basic Black 7 (BB7) from Tannery Wastewater Using Convenient Modified Graphene Oxide (MGO), Global Scientific Journals, 7 (2019), Md. Israil Hossain, **Amal Kanti Deb**, Manjushree Chowdhury*, Mehrez El-naggar, Md. Rayhan Sarker.

15. Removal of Toxicants from Leather Industrial Wastewater Using Sawdust Filter Media and Ferric Oxide Coagulant, Oriental Journal of Chemistry 35 (2019), Manjushree Chowdhury*, Md. Israil Hossain, **Amal Kanti Deb**, Tapan Kumar Biswas, Forhad Ahammed Bin Azam and Md. Delwar Hossain.

16. Investigation and evaluation of the quality features related to comfort of casual shoes in Bangladeshi leading retail brands using physical and chemical standard test methods, Leather and Footwear Journal 19 (1), 2019, Md Rayhan Sarker, **Amal Kanti Deb***, Manjushree Chowdhury*, Md Israil Hossain.

17. Reduction of Color Intensity from Textile Dye Wastewater Using Microorganisms: A Review, International Journal of Current Microbiology and Applied Sciences, 8(02), 2019, Md. Rayhan Sarker*, **Amal Kanti Deb,** Manjushree Chowdhury.

18. Assessment of influential factors for purchasing gent's shoes - understanding the basic comfort properties, Leather and Footwear Journal 18 (2018) 1, 13-24, **Amal Kanti Deb***,Md. Aftab Ali Shaikh, Md. Rayhan Sarker, Md. Israil Hossain.

19. Assessment of Noise, Temperature, Light Intensity and Their Impacts on Workers In Footwear And Leather Products Industries of Bangladesh, IOSR Journal of Environmental Science, Toxicology and Food Technology, 12 (2018) 25-31, **Amal Kanti Deb*,** Manjushree Chowdhury, Md. Israil Hossain, Md. Rayhan Sarker.

20. Workers' Health and Workplace Condition Evaluation (WCE) of the Footwear Industries in Bangladesh, IOSR Journal of Environmental Science, Toxicology and FoodTechnology, 12 (2018) 7-19, **Amal Kanti Deb***, Manjushree Chowdhury*, Forhad Ahammed Bin Azam, Md. Israil Hossain.

21. Challenges Evaluation for Adoption of SCP Practices in Footwear Industry of Bangladesh: A DEMATEL Approach, Journal of Operations and Strategic Planning 1(2) (2018) 168–184, Kauser Ali, Md. Abdul Moktadir, Aftab Ali Shaikh, Amal Kanti Deb, Md. Rashed-Ul-Islam.

22. Identifying Barriers for Implementing Green Supply Chain Management (GSCM) In Footwear Industry of Bangladesh: A Delphi Study Approach, Leather And Footwear Journal 18 (2018) 3, Md. Rayhan Sarker1*, Faruk Ahmed, **Amal Kanti Deb**, Manjushree Chowdhury.

23. Resource addition to leather industry: Adhesive from chrome shaving dust, Journal of Scientific and Innovative Research 2017; 6(4): 138-141, Md. Aftab Ali Shaikh, **Amal Kanti Deb**, Eama Akter, Tasnimul Ferdous, Md. Abu Sayid Mia*.

24. Application of Lac Dye in Shoe Upper Leather Dyeing, Leather and Footwear Journal, 17(2):97-106, 2017, **Amal Kanti Deb***, Md. Aftab Ali Shaikh, Md. Zakir Sultan, Md Israil Hossain.

25. Extraction of polypeptide solution from Tannery solid waste (chrome shavings) and its application as Poultry feed, Journal of Applied Chemistry (IOSR-JAC), Vol. 9, Issue 11 Ver. III, Ver. I, PP-32-35, Nov. 2016, e-ISSN: 2278-5736, Ariful Hai Quadery, Md. Tushar Uddin, Md. Murshid Jaman Chowdhury, **Amal Kanti Deb**.

26. Fatliquor preparation from Karanja seed oil (Pongamia pinnata L.) and its application for leather processing, JOSR Journal of Applied Chemistry, 8 (2015) 54-58, Ariful Hai Quadery, Md. Tushar Uddin, Md. Murshid Jaman Chowdhury, **Amal Kanti Deb.**

27. Development of hair-save unhairing method using organic thio compounds for pre-tanning stages of leather production, International Journal of Scientific & Engineering Research, 5 (2014) 376-382, Ariful Hai Quadery, Md. Tushar Uddin, Md. MurshidJaman Chowdhury, Amal Kanti Deb.

28. An Approach to Utilize Crust Leather Scrapes, Dumped into the Land, for the Productionof Environmentally Friendly Leather Composite, Engineering Journal, 17 (2013) 0125- 8281, Shamsun Nahar*, M. A. Khan, R. A. Khan, E. C. B. Abdullah, M. J. H. Khan, R. Islam, F. Karim, M. Rahman, A. Rahman, A. A. Mahmood, **A. K. Deb,** and U. H. B. Nahar.

29. Nutritional Status of Edible Pulses Commonly Consumed in Bangladesh, The Dhaka University Journal of Science, 57 (2009) 1022-2502, Md. Ariful Haque, Md. Shafiqul Alam, **Amal Kanti Deb.**

ARTICLES SUBMITTED

1. Transformation of chrome leather waste into nano-functional composite for the remediation of tannery dye wastewater, ACS Omega, Afrin Rahman Akhi, **Amal Kanti Deb[1*],** Masud Hassan, Santosh Kumar Paul (unde review).

2. Tannery trash into treasure: A sustainable approach to produce biofuel from fleshing waste of leather industry, Md. Al Shaharier, Manjushree Chowdhury, Masud Hassan, **Amal Kanti Deb*** (submitted).

3. Trimetallic nanoparticles and tubular halloysite nanoclay assembled mesoporous alginate beads for efficient removal of multicomponent long and short-chain per- and polyfluoroalkyl substances (PFASs) from PFAS-contaminated groundwater, Masud Hassan, Ravi Naidu, **Amal Kanti Deb**, Fangjie Qi, Bing Wang, Tao Jiang, Jianhua Du, and Yanju Liu*.

4. Chrome sludge to nano pigment: A circular recovery and repurposing of hazardous chrome sludge of CETP into value added Cr_2O_3 nano pigment, Md. Majharul Islam, Moftia Moni, Masud Hassan, **Amal Kanti Deb***.

BOOK CHAPTER

1. Arsenic, Metalloid and contaminants section, Inorganic contaminants and radionuclides, book chapter, Elsevier, November 2023, Md. Aminur Rahmana, **Amal Kanti Deb**, Sepide Abbasi, A.S.M. Fazle Bari, Kh Ashraf Uz Zaman, Mohammad Mahmudur Rahman, Prosun Bhattachary, and Ravi Naidu.

CONFERENCE PAPER/POSTER/PROCEEDINGS

1. Magnetic Halloysite and Its Aerogel for Sustainable Remediation of Contaminants from Water, International CleanUp Conference, September 2024, Adelaid, Australia, **Amal Kanti Deb***, Mohammad Mahmudur Rahman, Bhabananda Biswas, Ravi Naidu.

2. Halloysite Templated Nano Functional Materials: Multifunctional and Biocompatible Nanohybrids for Sustainable Environental Applications, BCSIR International Conference, Dhaka, Bangladesh, March 2024, **Amal Kanti Deb***, Ravi Naidu.

3. Mesoporous Architecture Magnetite Nanoparticles Loaded Halloysite Nanotubes Biopolymer Hydrogel Beads for Efficient Removal of Streptomycin, InternationalClay Conference, CMS, USA, July 2022, **Amal Kanti Deb***, Mohammad Mahmudur Rahman, Bhabananda Biswas, Yunfei Xi, Ravi Naidu.

4. Halloysite Templated Copper Nanoclusters: A Multifunctional Biocompatible Nanohybrid, International CleanUp Conference, September 2022, Adelaid, Australia, **Amal Kanti Deb***, Mohammad Mahmudur Rahman, Bhabananda Biswas, Yunfei Xi, Ravi Naidu.

5. Environmentally Benign CuNPs@HNT Composite and Its Catalytic Performance, 57 Annual Meeting of Clay Mineral Society, October 2020, USA, **Amal Kanti Deb***, Bhabananda Biswas, Ravi Naidu, Mohammad Mahmudur Rahman.

6. In situ formation of magnetite nanoparticles on Halloysite nanotubes: Synthesis and Characterization, International CleanUp Conference, September 2019, Adelaid, Australia, **Amal Kanti Deb***, Bhabananda Biswas, Ravi Naidu, Mohammad Mahmudur Rahman.

COMMUNITY INVOLVMENT

1. ILET Community support – **Student Advisor** of ILET, University of Dhaka, Bangladesh. (October 2024-January 2025).
2. ILET Community support – **Advisor, Badhn** (a blood donating organization) of ILET unit, University of Dhaka, Bangladesh. (2007-2015).
3. ILET Community support – **Advisor**, Yoiuth against hunger (an organization to bild hunger free world), ILET unit (2006 – 2015).
4. UoN Community support – ***Bangladesh Student Association Newcastle University (BSANU)*** and Former Executive Member for 2019-2020.

CONTRIBUTION TO THE PUBLICATION DOMAIN

Reviewer:

1. Environmental Technology and Innovation, Elsevier
2. Environmental Nanotechnology Monitoring and Managment, Elsevier
3. Applied Surface Science, Eklsevier
4. ACS Applied Nano Materials
5. Science of the Total Environment, Elsevier
6. ACS Omega
7. ACS Applied Nano Materials

PROFESSIONAL MEMBERSHIPS

- Member of Newcastle University Alumni Association, Australia.
- Member, Clay Mineral Society (CMS), USA.
- Life Member, Bangladesh Chemical Society, Bangladesh.
- Life Member, Leather Engineers and Technologists Society, Bangladesh (LETSB).
- Member, Alumni Association of Applied Chemistry and Chemical Engineering,University of Dhaka, Bangladesh.

VISTING RESEARCH PROGRAM

Completed a placement as a Visiting Researcher at The University of South Australia (UniSA), Australia from July 2019 to June 2020.

RESEARCH AFFILIATION/COLLABORATION

Organization	Roles	Year
University of Northamptopn, UK, Univiersity of Heartfordshie, UK, University of Auston, UK, Sustaiable Leather Foundation (SLF), UK, Idea Tree Bangladesh and SERA, Bangladesh.	**Lead Researcher** on behalf of Idea Tree Bangladesh: Traceable and Circular Leather Production in Bangladesh. Funded by: Sustaibale Manufacturing and Environmental Pollution Programe (SMEP), UK and UNCTAD (https://smepprogramme.org/project/leathertrace-bangladesh-traceable-and-circular-leather-production-in-bangladesh/).	October2024 – March 2026

Institue of Leather Engineering and Technology, University of Dhaka, Bangladesh and Leather Research Institute (LRI), BCSIR, Ministry of Science and Tecnology, Bangladesh.	**Research Fellow:** Hair saving unharing method and collagen hydrolysate preparation form tannery soild wastes.	October 2013-September 2015

TRAINING RECEIVED

International and National level training received for Engineering teaching and research

Name of Program/Tropic	Duration	Organized by/ Institute
Emergency Preparedness Certification training	10 September 2022	The University of Newcastle, Australia.
Research Integrity Awareness Online	20 April 2022	The University of Newcastle, Australia.
Information Security Awareness & National Security Awareness	25 April 2022	The University of Newcastle, Australia.
Respectful and Collaborative Workplace & Integrity Module	22 May 2022	The University of Newcastle, Australia.
UON Health and Safety Induction	10 August 2022	The University of Newcastle, Australia.
Biosafety 1 - Biosafety principles	18 August 2019	UniSA, Australia.
Biosafety 2 - Gene Technology Regulations	20 August 2019	UniSA, Australia.
Respectful Behaviour Completion	13 June 2019	UniSA, Australia.
Chemical Safety Assessment	8 June 2019	UniSA, Australia.
Environmental Awareness Assessment	7 June 2019	UniSA, Australia.
Chemical Spills Management Assessment	7 June 2019	UniSA, Australia.
Office Ergonomics Assessment	6 June 2019	UniSA, Australia.
The Safe Use of X-ray Analysis Equipment in the Laboratory.	12 March 2019	Conducted by Bartolo Safety Management Service, NSW, Australia.
General Laser Safety for the Laboratory	14 March 2019	Conducted by Bartolo Safety Management Service, NSW, Australia.
ISO 14001:2015 Internal Auditor Course under professional development program on Environment Management System (EMS).	03-06 & 08 October 2016	By QCS at Dhaka, Bangladesh.
Factory Environment, Production Process, Production Planning and Quality Control, Machinery and Equipment Set-up and Maintenance organized.	13–17 May, 2014.	PICARD Bangladesh Limited and Consulting Service International Ltd (CSI).

Determination of Chromium (VI) and Formaldehyde in Leather" using UV-visible Spectrophotometer from	6–10 March, 2010.	Conducted by Footwear Design and Development Institute (FDDI),India.
Advanced training on analytical measurements involving AAS, GC-MS, HPLC, Measurement Uncertainty and Environmental Science.	8–26 July 2008	Gharda Chemicals Ltd. and Gardha Institute of Science and Technology, Mumbai, India.
Application training on "High Performance Thin Layer Chromatography.	29 July 2008	CAMAGSwitzerland recognized Application Research Laboratory in Mumbai, India.
Training on High Performance Thin Layer Chromatography Instrument lab from	23–26 June 2008.	By Anchrom Analytical (I) P. LTD. India at BCLT, Dhaka, Bangladesh.
On hand training on Calibration Procedure for the Equipment and Apparatus of Testing Laboratories.	18–23 May 2008	By Electronics Regional Test Laboratory (East), India.
Internal Audit on the basis of ISO/IEC 17025:2005.	20–21 April 2008	By ITC Geneva at Bangladesh Leather Service Centre, Dhaka, Bangladesh
Measurement Uncertainty – Principle and Practice,.	26-27 November 2007 and 13 February 2008	Conducted by ITC-Geneva in Dhaka, Bangladesh.
ISO 9000:2000 Series Auditor/Lead Auditor Training Course.	6–10 May 2007	Conducted by Nigel Baurer & Associates and Certified by IRCA.
Post graduate training in Pattern Engineering and Assembly (Footwear).	July–September 2005	Indian Institute of Leather Products (IILP), Chennai, India.

TECHNICAL SKILLS

- **Team Work**: Worked with all levels of management including quick-witted industry and business teams.
- **Relationship Management:** Developed, supported and maintained effective relationships with external and internal stakeholders.
- **In-hand experiences:** Develop a comprehensive protocol for research environmental science and engineering, encompassing sustainable emvironmental remdiation, waste management, circular economy, nanotechnology, and water treatment technology. Expertise in utilizing artificial intelligence and modelling with machine learning. EMS, LCA and carbon foot print measurement, greenhouse gas remediation and climate change mitigation through innovative materials development, LCA and carbon footprrint.
- **Materials sciences:** Material-based technology innovation and development for the remediation of soil and wastewater. Material-contaminant interaction, reactive and bio-reactive materials, including clays, nanoclays, biochar, graphene and their modified products are the central play.
- **Materials synthesis and characterization**: Co-precipitation/chemical reduction/hydrothermal synthesis of nanomaterials, understanding, operation and analysis of Transmission/Scanning Electron Microscopy (TEM/SEM), X-ray photoelectron spectroscopy (XPS) and X-ray diffraction (XRD), ICP-OES, ICP-MS/MS, LC-MS/MS.
- **Biosafety Lab Skill:** Experienced at working in Biosafety-1 (PC-1) and Biosafety-2 (PC-2) Labs and microbial interactions of clay nano composite materials.

- **Communication skill:** Demonstrated ability to communicate scientific information to various audiences, including the scientific forum, industry, and farms. My experience extends to collaborating with international organizations and non-government bodies and extension workers.

- **Relevant Knowledge and education:** Proven expertise in cutting-edge technology and image processing. Specialized in examining toxic metal and oganic pollutants in soil and water, contributing to the transition to a circular economy.

- **Research and analysis:** Widespread experience in undertaking experiments in both laboratory and field condition, and summarizing research findings into journal articles.

- **Digital Literacy Skills:** Statistical analysis using Origin Pro Lab, ANOVA, RSM-CCD, SPSS, Visual Basic and Microsoft Office suite.

OTHER KEY QUALIFICATIONS

- Lead Auditor of ISO/IEC 17025:2005 for Laboratory Accreditation.
- Auditor of IS0-1401:2015 for Environment Management System (EMS).

RECENT INVITED SPEAKER

Year	Title
2024	Keynote Speech on Halloysite Templated Nano Functional Materials for Sustainable Environmental Applications in BCSIR Congress-2023, 08-10 March 2024, Dhaka, Bangladesh
2024	Presentation on Green Nano Remediation: Halloysite Based Functional Materials in the Clayminar Series, ECCS Webinar, CMS, USA through Virtual Platform, 24 May 2024

CONSULTANCY EXPERIEMNC

Duration	Location	Company and reference person	Position	Description
October 2024 to till date	Bangladesh	Idea Tree, Md Kowser Ali, Head of Operation, IdeaTree	Lead Researcher	Lead the research work on traceability, LCA and carbon footprint measurement for Bangladesh leather sector under the traceability and circular leather production (TCLP) project Bangladesh funded by Sustainable Manufacturing and Environmental Pollution Programme (SMEP), UK.
March 2024 to April 2025	Bangladesh	Swiss Contact, Markus Ehmmen Team Leader	Senior Consultant	Facilitating improved production processes of Footwear MSMEs of Bhairab in Bangladesh through Technology Upgradation. Provide technical expertise, reporting and supervise the team.
October 2023-	Bangladesh	The Deutsche Gesellschaft für	National Consultant	Developing OHS training and advisory services materials and human capacity

February2024		Internationale Zusammenarbeit (GIZ),Germany Paul WeijersTeam Leader		development for its use by Training and Advisory Service Providers through training of trainers (ToT) and on job coaching in tannery under Project 'Good Working Conditions in Tanneries (GOTAN)
From August 2023-December 2023	Bangladesh	National Skills Development Authority (NSDA), Prime Minister's Office,	Expert	Validation of Competency Standard (CS) and Course Accreditation Document(CAD)
From February 2023-August2023	Bangladesh	Institte of Leather Engineering and Technology, Uniersityof Dhaka	Expert	Expertise in the development of Outcome-Based Education (OBE) Curriculum for undergraduate andgraduate level.
2017	Bangladesh	European Commission BFLLFEA, BTA and LFMEAB	Expert	Worked as an expert reviewer of Sustainable Consumption and Production (SCP) guidelines under ECOLEBAN project funded by European Commission and implemented by BFLLFEA, BTA and LFMEAB
From January 2015-April 2015	Bangladesh	Ministry of Planning, Government of Bangladesh	National consultant	National consultant of IMED, Ministry of Planning, GOB, for the project entitled "TanneryIndustrial Estate Dhaka (TIED)
2015	Bangladesh	Dhaka Ahsania Mission	Reviewer and Translator	Reviewer and Translator of Competency Based Learning Materials (CBLMs) for Footwear and Leather Goods Sector
From July 2010-June 2011	Bangladesh	Head, ILO Bangladesh Office	National consultant	National consultant forthe development of Course Accreditation Document (Competency Based Training-CBT), ILO TVET Reform Project Bangladesh, Component-2
April-July 2010	Bangladesh	Standard and Curriculum Development Committee (CBT)	Member of the Standard and Curriculum Development Committee (CBT)	Worked as a member ofthe Standard and Curriculum DevelopmentCommittee (CBT), ILO TVET Reform Project Bangladesh, Component-2
January 2012-Decmeber 2014	Bangladesh	Technical Education Board (BTEB)	Expert	Worked as an expert for the development curriculum and syllabus for Diploma in Footwear and Leather Goods Engineering under Bangladesh Technical Education Board (BTEB).

ACADEMIC/PROFESSIONAL PROFILE WEB LINKS

- GoogleScholar: https://scholar.google.com.au/citations?hl=en&user=QBJHwmYAAAAJ&view_op=list_works
- ResearchGate: https://www.researchgate.net/profile/Amal-Deb?ev=hdr_xprf
- ORCID ID: *https://orcid.org/0000-0002-1465-0333*
- LinkedIn: https://www.linkedin.com/in/dr-amal-kanti-deb-38a295260/recent-activity/all/

REFERENCES

1. **Laureate Professor Ravi Naidu,** Professor
   Directore, Global Centre for Environmental Remediation (GCER)
   The University of Newcastle, Callaghan NSW 2308, Australia
   CEO CRC CARE Pty Ltd, Callaghan, NSW 2308, Australia
   T: +61 2 4913 8734; Mob: +61 (0) 407 720 257
   Email: ravi.naidu@newcastle.edu.au
   Web: https://www.newcastle.edu.au/profile/ravi-naidu
   Orchd: https://orcid.org/0000-0001-5529-8690
   Google scholar: https://scholar.google.com/citations?user=teicPrYAAAAJ&hl=enku8AAAAJ

2. **Dr. Mohammad Mahmudur Rahman**
   Associaate Professor
   Global Centre for Environmental Remediation (GCER)
   The University of Newcastle, Callaghan NSW 2308, Australia
   Email: mahmud.rahman@newcastle.edu.au
   T: +61 2 4913 8734; Mob: +61 (0) 431 258 509
   Web: https://www.newcastle.edu.au/profile/mahmud-rahman
   Web of Science: https://www.webofscience.com/wos/author/record/J-1110-2019
   Scopus: http://www.scopus.com/authid/detail.url?authorId=55163933600
   Orcid: https://orcid.org/0000-0002-3426-5221
   Google scholar: http://scholar.google.com.au/citations?user=LxbqSwkAAAAJ&hl=en&oi=ao

3. **Dr. Yunfei Xi**
   Associaate Professor
   Faculty of Science, School of Chemistry & PhysicsQueensland
   University of Technology, Australia
   Email: y.xi@qut.edu.au
   T: +61 2 4913 8734; Mob: +61 (0) 731 381 195
   Web: https://www.qut.edu.au/about/our-people/academic-profiles/y.xi
   Orchid: https://orcid.org/0000-0003-2924-9494
   Google scholar: https://scholar.google.com.au/citations?user=yKgZjP4AAAAJ&hl=en