Curriculum Vitae

PERSONAL INFORMATION

Dr. Md. Abdul Khaleque



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Sex: Male | **Date of birth:** 11/11/1989 | **Nationality:** Bangladesh |

WORK EXPERIENCE

06. 2026 – till date **Associate Professor**

Dept. of Applied Chemistry and Chemical Engineering
Gopalganj Science and Technology University (GUST), Gopalganj, Bangladesh.

04. 2021 – 06. 2026 **Assistant Professor**

Dept. of Applied Chemistry and Chemical Engineering
Gopalganj Science and Technology University (GUST), Gopalganj, Bangladesh.

02. 2017 – 04. 2021 **Lecturer**

Dept. of Applied Chemistry and Chemical Engineering
Gopalganj Science and Technology University (GUST), Gopalganj, Bangladesh.

02. 2016 – 02. 2017 **Lecturer (part time)**

Dept. of Applied Chemistry and Chemical Engineering
Gopalganj Science and Technology University (GUST), Gopalganj, Bangladesh.

EDUCATION

12. 2021 – 11. 2025 **Ph.D. in Chemical Engineering (Supercapacitor and Biosensor)**

Jashore University of Science and Technology, Jashore, Bangladesh.

01. 2014 – 06. 2015 **M.Sc. in Applied Chemistry and Chemical Technology**

Rajshshi University, Rajshahi, Bangladesh.

CGPA: 3.76 out of 4.0 (equivalent to EQF level 6)

01. 2009 – 12. 2013 **B.Sc. in Applied Chemistry and Chemical Technology**

Rajshshi University, Rajshahi, Bangladesh.

CGPA: 3.56 out of 4.0 (equivalent to EQF level 6)

PUBLICATIONS

(Q1= 24, Q2= 2, Q3=1 and others = 3)
(total citation = 908)

1. **Md. Abdul Khaleque**, Moumita Rahman Sazza, Selina Akter, Md. Romzan Ali, Syed Imdadul Hossain, Rahman Saidur, Mohamed Aly Saad Aly, Md. Zaved H. Khan, Polypyrrole Functionalized ($Ti_3C_2T_x$-SnO_2 NPs) Nanocomposite-based Hybrid Capacitive Electrode for Electrochemical Detection of *Klebsiella Pneumoniae, RSC Advances,* 15, 32041–32055, 2025. [IF: 4.6] Q1

2. **Md. Abdul Khaleque**, Md. Arifur Rahman, Syed Imdadul Hossain, Md. Romzan Ali, Md. Ruhul Amin, Rahman Saidur, Mohamed Aly Saad Aly, Munawar Sultana, Md. Zaved H. Khan, Polythiophene Functionalized $Ti_3C_2T_x$-TiO_2 Nanorods Composite Based Electrochemical Sensing Platform for the Detection of *Pseudomonas aeruginosa* DMC-27b, *Bioelectrochemistry*, 167, p. 109082, 2026. [IF: 4.5] Q2

3. **M.A. Khaleque**, Hassan, M.H., Ali, M.R., Hossain, M.A., Aly, M.A.S., Alahmad, W., Sultana, M. and Khan, M.Z.H., Gold-Polyaniline Supercapacitive Biosensor for Selective Detection of E. Coli DH 5α. *IEEE Sensors Journal*, *26*(1), pp.41-55, 2025. [IF: 4.5] Q1

4. Amin, M.R., Ali, M.R., **M.A. Khaleque**, Hossain, M.I., Shishir, M.I.H., Hasan, M.R., Aly, M.A.S., Saidur, R., Han, T.K., Zaed, M.A. and Khan, M.Z.H. Enhanced electrochemical sensing of l-Cysteine in human blood serum using Ti3C2Tx/carbon black nanocomposite hybrid structure. *Microchemical Journal*, p.116817, 2026. [IF: 5.1] Q1

5. Ali, M.R., Iqbal, A., Talukder, A.H., **M.A. Khaleque**, Amin, R., Hossain, M.I., Islam, S., Hossain, M.I., Hassan, M.R., Aly, M.A.S. and Khedr, G.E., Facile synthesis of 2D Mo2TiC2@ PDA/MnO2 composite-based electrode material for clean and efficient energy storage. *Energy Conversion and Management: X*, p.101620, 2026. [IF: 7.6] Q1

6. Md Ruhul Amin, Md Romzan Ali, **Md Abdul Khaleque**, Mohamed Aly Saad Aly, Rahman Saidur, Tan Han Kim, Md. Abu Zaed, Md Rafiul Hassan, Md Zaved H Khan, $Ti_3C_2T_x$@poly (L-alanine) nanocomposite-based high-performance electrochemical sensing platform for the sensitive detection of hydroquinone in environmental and cosmetic samples. *Electrochimica Acta*, *539*, p.147081, 2025. [IF: 5.5] Q1

7. Rifat Rayhan, Md. Inzamamul Haque Shishir, **Md. Abdul Khaleque**, Md. Ruhul Amin, Md. Romzan Ali, Mohamed Aly Saad Aly, Shakib Mahmud Ayon, Rahman Saidur, Tan Han Kim, Md. Abu Zaed and Md. Zaved Hossain Khan, A portable smartphone-based electrochemical sensing platform for rapid and sensitive detection of creatinine in blood serum. *RSC advances*, *15*(30), pp.24917-24929, 2025. [IF: 4.6] Q1

8. Tamal K Paul, **Md Abdul Khaleque**, Md Romzan Ali, Mohamed Aly Saad Aly, Md Sadek Bacchu, Saidur Rahman, Md Zaved H Khan. MXenes from MAX phases: synthesis, hybridization, and advances in supercapacitor applications. *RSC advances*, no. *15*(12), pp.8948-8976, 2025. [IF: 4.6] Q1

9. **Md Abdul Khaleque**, Mohamed Aly Saad Aly, Zaved Hossain Khan. "Chemical and electrochemical synthesis of doped conducting polymers and their application in supercapacitors: An overview." *Chemical Engineering Journal*, p.160444, 2025. [IF: 13.2] Q1

10. **Md Abdul Khaleque**, Md Romzan Ali, Mohamed Aly Saad Aly, Md Ikram Hossain, Kim Han Tan, Md Abu Zaed, Rahman Saidur, Md Mahbubur Rahman, Nabisab Mujawar Mubarak, and Md Zaved Hossain Khan. "Highly sensitive electrochemical detection of ciprofloxacin using MXene ($Ti_3C_2T_x$)/poly (rutin) composite as an electrode material." *Diamond and Related Materials* p.111749, 2024. [IF: 4.3] Q2

11. **Md Abdul Khaleque**, Syed Imdadul Hossain, Md Romzan Ali, Mohamed Aly Saad Aly, Hala S. Abuelmakarem, Muhammad Shamim Al Mamun, and Md Zaved Hossain Khan. "Bioreceptor

modified electrochemical biosensors for the detection of life threatning pathogenic bacteria: a review." *RSC advances* 14, no. 3, p.28487-28515, 2024. [IF: 4.6] Q1

12. Md Hasibul Hassan, Md Romzan Ali, Md Arifur Rahman, Anamica Hossain, Sunjida Afrin, **Md Abdul Khaleque**, Md Anwar Hossain, Md Zaved Hossain Khan, and Munawar Sultana. "Proposition of a phagosensor with a unique Teseptimavirus SAL_R1S on a carbon nanotube platform for efficient detection of typhoid pathogen." *Sensors and Actuators Reports* 8, p.100238, 2024. [IF: 6.5] Q1
13. M. I. Hossain, **M. A. Khaleque**, M. R. Ali, M. S. Bacchu, M. S. Hossain, S. M. F. Shahed, M. Aly Saad Aly, and Md ZH Khan. "Development of electrochemical sensors for quick detection of environmental (soil and water) NPK ions." *RSC advances* 14, no. 13, 9137-9158, 2024. [IF: 4.6] Q1
14. Md Hasanuzzaman, **M. A. Khaleque,** Tamil Selvan Kannan, Goutam Kumar Kole, Vladimir N. Nesterov, German E. Pieslinger, and Shishir Ghosh. "Triosmium cluster bearing a metalated dibenzylideneacetone ligand: Synthesis, structure, redox and electronic properties." *Journal of Organometallic Chemistry* 1011 p.123141, 2024. [IF: 4.4] Q3
15. **M. A. Khaleque**, M. I. Hossain, M. R. Ali, M. S. Bacchu, Mohamed Aly Saad Aly, M. Z. H. Khan, Nanostructured wearable electrochemical and biosensor towards healthcare management: A review, *RSC advances*, *13*(33), p.22973-22997, 2023. [IF: 4.6] Q1
16. **M. A. Khaleque,** M. S. Bacchu, M. R. Ali, M. R. A. Mamun, M. I. Hossain, M. S. Hossain, Mohamed Aly Saad Aly, M. Z. H. Khan, "Zinc oxide nanorod/rutin modified electrode for the detection of Thiourea in real samples." *Heliyon*, 2023. [IF: 4.03] Q1
17. Roy, H., Rahman, T.U., Khan, M.A.J.R., Al-Mamun, M.R., Islam, S.Z., **M. A. Khaleque,** Hossain, M.I., Khan, M.Z.H., Islam, M.S., Marwani, H.M. and Islam, A., Toxic dye removal, remediation, and mechanism with doped SnO_2-based nanocomposite photocatalysts: A critical review. *Journal of Water Process Engineering*, *54*, p.104069, 2023. [IF: 7.0] Q1
18. S. K. Saha, M. R. Ali, **M. A. Khaleque**, M. S. Bacchu, Mohamed Aly Saad Aly, M. Z. H. Khan, Metal oxide nanocaarrier for targeted drug delivery towards the treatment of global infectious diseases, *Journal of drug delivery science and technology*, p.104728, (2023). [IF: 5.06] Q1
19. **M. A. Khaleque,** M. S. Bacchu, M. R. Ali, M. S. Hossain, M. R. A. Mamun, M. I. Hossain, and M. Z. H. Khan. "Copper oxide nanoflowers/poly-l-glutamic acid modified advanced electrochemical sensor for selective detection of l-tryptophan in real samples." *Heliyon* 9, no. 6 2023. [IF: 4.03]
20. Hossain, Md Shamim, **Md Abdul Khaleque,** Md Romzan Ali, Md Sadek Bacchu, Md Ikram Hossain, Mohamed Aly Saad Aly, and Md Zaved Hossain Khan. "Poly 3, 4-ethylenedioxythiophene Polystyrene Sulfonate-Modified Electrode for the Detection of Furosemide in Pharmaceutical Products." *ACS omega* 8, no. 19 p.16851-16858, 2023. [IF: 4.132] Q1
21. Ali, M. R., M. S. Bacchu, D. D. Ridoy, P. L. Mozumder, M. N. Hasan, S. Das, M. F. H. Palash, **A. Khaleque,** MZH Khan et al. "Development of a hematite nanotube and tyramine-based drug carrier against drug-resistant bacteria Klebsiella pneumoniae." *RSC advances* 12, no. 48, p.31497-31505, 2022. [IF: 4.6] Q1
22. Ali, Md Romzan, Md Sadek Bacchu, Md Rashid Al-Mamun, Md Ikram Hossain, **Abdul Khaleque**, Anowara Khatun, Dipto Debnath Ridoy, Mohamed Aly Saad Aly, and Md Zaved Hossain Khan.

"Recent advanced in Mxene research toward biosensor development." *Critical Reviews in Analytical Chemistry,* p.1-18, 2022. [IF: 6.91] Q1

23. Hossain, M.I., Sultana, T., Khatun, M.S., **M. A. Khaleque**, Amin, M.R., Toukir, I.A., Khatun, A., Arefin, W., Tarequzzaman, M., Hasan, M.R. and Ali, M.R., 2025. Electrochemical sensing of nitrate in real water samples using a CuNPs/Au–rGO nanocomposite-based electrode. *Microchemical Journal*, p.115458. [IF: 5.1] Q1
24. Al-Mamun, M.R., Fahim, T.H., Hossain, M.I., Islam, M.S., Ali, M.R., Bacchu, M.S., **M. A. Khaleque,** Waizumi, H., Komeda, T. and Khan, M.Z.H., Enhanced photocatalytic degradation of methyl orange dye under UV light using Cu and Ni-doped CdS nanocomposites: Insights into reactor performance and kinetic analysis. *Chemical Engineering and Processing-Process Intensification*, p.110560, 2025. [IF: 3.9] Q1
25. Ali, R., Amin, R., **A. Khaleque**, Zohra, F.T., Aly Saad Aly, M. and Khan, Z.H., Carbon black/Poly (glutamic acid) nanocomposite modified electrode-based electrochemical sensing platform for the detection of metronidazole in animal feed. *Emergent Materials*, pp.1-12, 2025. [IF: 4.1] Q2
26. Haider, J.B., Haque, M.I., Hoque, M., Hossen, M.M., Mottakin, M., **M.A. Khaleque**, Johir, M.A.H., Zhou, J.L., Ahmed, M.B. and Zargar, M., Efficient extraction of silica from openly burned rice husk ash as adsorbent for dye removal. *Journal of Cleaner Production*, *380*, p.135121, 2022. [IF: 10.0] Q1
27. **A. Khaleque**, Alam, M.M., Hoque, M., Mondal, S., Haider, J.B., Xu, B., Johir, M.A.H., Karmakar, A.K., Zhou, J.L., Ahmed, M.B. and Moni, M.A., Zeolite synthesis from low-cost materials and environmental applications: A review. *Environmental Advances*, *2*, p.100019, 2020. [CiteScore: 10.3] Q1
28. **A. Khaleque**, M. Afroze, M. Khan, M.S Hossain, M.M Hossain and M. Nurunnabi, Upgrading pyrolysis oil for alternative sources of petroleum, *BAUET Journal*, Vol. 1(2), pp. 79-88, 2018.
29. **A. Khaleque**, M. R. Islam, M. S. Hossain, M. Khan, M. S. Rahman and H. Haniu, Upgrading of waste tire pyrolysis oil to be used in diesel engine, *Mechanical Engineering Research Journal*, Vol. **10**, pp. 35-40, (2016).
30. M. B. Ahmed, A.T. M. K. Hasan, M. Mohiuddin, M. Asadullah, M. S. Rahman and **A. Khaleque**, Effects of heating rate and heating up time to central of biomass particles for bio-oil production, *Bangladesh Journal of Scientific & Industrial Research*, Vol. 51(1), pp. 13-22, 2016.
31. Md Romzan Ali, Anowara Khatun, Jannatul Haider Konok, Md Rashid Al-Mamun, **Md Abdul Khaleque**, Mohamed Aly Saad Aly, Waleed Alahmad, Md Zaved Hossain Khan, Aminopropyltriethoxysilane functionalized hematite nanotube-based sensing platform for electrochemical detection of fenitrothion residues, *Heliyon*, *12*(10), 2026.
32. Md Romzan Alia, Md Sakib Hassanb, Dipto Debnath Ridoya, Shilpi Dasb, Md Abdul Khalequea, Mohamed Aly Saad Alya, Hermine Gharagulyane, Selina Akterb , Md Zaved H. Khana, Investigating the selective distribution of Streptococcus mitis biofilm by titanium dioxide and graphene oxide-based nanocomposite, *Results in Surfaces and Interfaces*, 24, p. 100896, 2026.

RESEARCH INTERESTS

Supercapacitor, Sensor & Biosensor, Hydrogen Production, Photocatalysis, Nano drug carrier, Pyrolysis, and Emerging Nanotechnology

TECHNICAL SKILLS Electrochemical workstation, ATR-FTIR, LC-MS, AAS, ICP-OES, UV-vis Spectrophotometer. etc.

TRAINING SUMMARY

> An "In plant training" on Industrial process unit operation & process control technique, Training Institute for Chemical Industries (TICI), Polash, Narsinghi. (28 days)
> An "In plant training" on Natore Sugar Mills Ltd. Natore. (15 days)
> An "In plant training" on Vegan Agro Ltd. Baromile, Khustia.(1 day)
> An "In plant training" on Square Pharmaceuticals Ltd. Shalghoria, Pabna. (1 day)
> An "In plant training" on BRB Cables and Kiam metals, Khustia. (1 day)

LANGUAGES English, Bengali (Native)

MIND DEVELOPMENT AND SELF-IMPROVEMENT TRAINING

Meditation Course: Successfully completed (**and still practicing**) a meditation course named "**Quantum Method Course**" of four days consisting of 40 hours on 24-27th March, 2017, from **YOGA FOUNDATION**, Dhaka, Bangladesh. **Registration No.** 20/425.

REFERENCES

1

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JUST, Jashore, Bangladesh
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Assistant Professor
Dept. of Electrical and Computer Engineering
Georgia Tech Shenzhen Institute (GTSI), China
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DECLARATION This is a certification that all information stated in this CV is true and complete to the best of my knowledge.

Signature