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USA



## EDUCATION

### MBA

FISHER COLLEGE OF BUSINESS

THE OHIO STATE UNIVERSITY

### Ph.D. in Chemical Engineering

FACULTY OF ENGINEERING, MIE UNIVERSITY,  
MIE, JAPAN

(Fulbright scholar, JAPAN)

### M.S. in Chemistry

UNIVERSITY OF DHAKA

### B.S. in Chemistry

UNIVERSITY OF DHAKA

# ARIFUR RAHMAN (ARIF)

SCIENTIST, COLLEGE OF FOOD, AGRICULTURE  
AND ENVIRONMENTAL SCIENCES

## The Ohio State University, OSU SOUTHCENTERS

### CURRENT POSITION : SCIENTIST

### SOIL, WATER, & BIOENERGY RESOURCES PROGRAM

### CURRENT ROLE & ACCOMPLISHMENT

- Overseeing laboratory operations and laboratory management.
- Supervising research associates, Ph.D students, postdocs, and visiting fellows
- Writing grant applications and managing grant-related processes.
- Research publications: 88
- Patents: 02
- Book Chapter: 02

### IMMIGRATION STATUS

CITIZEN OF THE U.S.A

### PROFESSIONAL SERVICE

- Judged research grant applications, NRC research associateship, USA
- Judged high school and middle school student projects for Ohio State Science Day
- Reviewed undergraduate research grant applications for Ohio EPA
- Judged high school research presentation: Ohio Academy of Science
- Judged Ph. D. students research presentation: CFAES, OSU.
- Supervised 25 MS , 02 Ph.D. and 03 M. Phil research projects.

### PROFESSIONAL MEMBERSHIP

- American Chemical Society, USA
- Soil Science Society, USA
- The American Association for Aerosol Research, USA

## PROFESSIONAL EXPERIENCE

DURATION	POSITION	AFFILIATION
2019-Current	RESEARCH SCIENTIST	College of Food, Agricultural and Environmental Sciences, The Ohio State University, USA
2015-2019	ADJUNCT ASSISTANT PROFESSOR, RESEARCH ASSOCIATE	Dept. of Chemistry & Biomolecular Science, Dept. of Civil & Environmental Engineering, Center for Air, Water Resources Engineering and Sciences, Clarkson University, Potsdam, NY, USA
2007-2015	ASSOCIATE PROFESSOR ASSISTANT PROFESSOR LECTURER	Dept. of Chemistry, University of Dhaka, Bangladesh
2006-2007	LECTURER	Dept. of Chemistry, Bangladesh University of Engineering and Technology (BUET)

## SPECIALIZATION IN SCIENCE/ ENGINEERING (ANALYTICAL CHEMISTRY)

- Analytical & environmental chemistry
- Instrumental techniques for chemical analysis:  
HPLC, GPC, LC-MS, GC-FID, TCD, ECD, GC-MS, TOC, UV-VIS, FTIR, ICP-AES, ICP-MS, TGA, CHNS ANALYZER, FLUORESCENCE SPECTROSCOPY, BOMB CALORIMETRY
- Monitoring air, water, soil, and food contaminants and develop mitigation technology
- Development of analytical techniques
- Laboratory management
- Atmospheric chemistry
- Water and soil chemistry (eutrophication)

## SPECIALIZATION IN BUSINESS/MANAGEMENT

- Data analytics
- Supply chain analytics
- Six sigma blackbelt
- Data visualization
- Operation management

## TRAINING AND TRAINER

- Analytical Skills development Course (ASDC) for the analysis of warfare chemicals by GC-MS, VERIFIN, University of Helsinki, Finland through Organization for the Prohibition of Chemical Weapons (OPCW).
- Trainer: Asian Network of Research on Food and Environmental Contaminants (ACFEC), Organized by Organization for the Prohibition of Chemical Weapons (OPCW) and international science Program (ISP), Uppsala University, Sweden.

## INVENTION AND TECHNOLOGY TRANSFER

- (I) Aerosol-generating articles suitable for use in aerosol-generating devices. Pub. No. US 2021/0015170 A1 (Pub Date: Jan. 21, 2021).
- (ii) Aerosol-generating articles suitable for use in aerosol-generating devices. Pub. No. WO 2021/009624A1 (Pub Date: Jan. 21, 2021).
- (iii) Filter Elements Suitable for use in Smoking articles and processes for producing the same. Pub. No. US 2020/0375245A1 (Pub Date: Dec, 3, 2020).
- (IV) Filter Elements Suitable for use in Smoking articles and processes for producing the same. Pub. No. WO 2020/240439A1 (Pub Date: Dec, 3, 2020).

## HONORS AND AWARD

- (I) Japanese Government Scholarship, Japanese Fulbright Scholarship (MONBUKAGAKUSHO)
- (II) Young Scientist award by IFS (International Foundation for Science, Sweden)
- (III) Merit award for undergraduate results
- (IV) Merit award for graduate results

## BOOK CHAPTER

- (I) **ARIFUR Rahman**, Cover Crops Effect on soil Quality/Health. Islam, K.R. and B. Sherman. 2020. Cover Crop and Sustainable Agriculture (eds.), CRC Press, Inc., FL, USA. 2021.
- (II) **ARIFUR Rahman**, Extraction of valuable compounds from agricultural crop residues and waste, **American Chemical Society (ACS)**. 2021.

## RESEARCH PUBLICATIONS (TOTAL: 88)

1. Rahman, A., Islam, K. R., Ahsan, S., Didenko, N. O., & Sundermeier, A. P. (2024). Predicting accumulation and potential edge-of-field loss of phosphorus to surface water from diverse ecosystems. *Water, Air, & Soil Pollution*, 235(755). <https://doi.org/10.1007/s11270-024-07565-9>
2. Rahman, A., Ahsan, S., Hartschuh, J., Prochaska, S., & Islam, K. R. (2024). Soil Phosphorus Partition and Transformations Under Diverse Land Uses. *Communications in Soil Science and Plant Analysis*. <https://doi.org/10.1080/00103624.2024.2346218>
3. Rahman, A. M., Harker, T., Lewis, W., & Islam, K. R. (2024). Chelated- and nano iron fertilization affects nutrient uptake and translocation in fresh market tomatoes. *Journal of Plant Nutrition*. <https://doi.org/10.1080/01904167.2024.2304166>
4. Rahman, A., Harker, T., Lewis, W., & Islam, K. R. (2023). Nano and chelated iron fertilization influences marketable yield, phytochemical properties, and antioxidant capacity of tomatoes. *PloS One*. <https://doi.org/10.1371/journal.pone.0294033>
5. Stavi, I., Islam, K. R., Rahman, M. A., Gusarov, Y., Laham, J., Comay, O., Basson, U., Xu, C., Xu, Z., & Argaman, E. (2023). Unexpected consequences of afforestation in degraded drylands: Divergent impacts on soil and vegetation. *Journal of Environmental Management*, 345, 118703. <https://doi.org/10.1016/j.jenvman.2023.118703>
6. Amoakwah, E., Rahman, A., Islam, K. R., Frimpong, K. A., Phares, C. A., Sackey, L., Asirifi, I., & Arthur, E. (2023). Increased humic materials explain aggregate-protected carbon and nitrogen accumulation in biochar-amended tropical soils. *Pedosphere*, 33. <https://doi.org/10.1016/j.pedsph.2023.07.006>
7. Amoakwah, E., Lucas, S. T., Didenko, N. A., Rahman, M. A., & Islam, K. R. (2022). Impact of deforestation and temporal land-use change on soil organic carbon storage, quality, and lability. *PLOS ONE*, 17(8), e0263205. <https://doi.org/10.1371/journal.pone.0263205>
8. Roy, S. C., Rahman, A., Celik, A., Wilson, S., Azmy, A., Bieber, J., Spanopoulos, I., Islam, R., Zhu, X., Han, F. X., & Islam, S. M. (2022). Efficient removal of chromium(VI) ions by hexagonal nanosheets of CoAl-MoS<sub>4</sub> layered double hydroxide. *Journal of Coordination Chemistry*, 75(11-14), 1581-1595. <https://doi.org/10.1080/00958972.2022.2101103>
9. Arthur, E., Frimpong, K. A. A., Lorenz, N., Rahman, M. A., Nziguheba, G., & Islam, K. R. (2021). Biochar amendment improves microbial community structures and biological and enzyme activities in a weathered tropical sandy loam. *Applied Soil Ecology*, 172, 104364.
10. Rahman, M. A., Didenko, N. O., Sundermeier, A. P., & Islam, K. R. (2021). Agricultural Management Systems Impact on Soil Phosphorous Partition and Stratification. *Water Air Soil Pollut*, 232-248.
11. Amoakwah, E., Rahman, M. A., Nketia, K. A., Djouaka, R., Didenko, N. O., & Islam, K. R. (2021). Impact of deforestation and subsequent land-use change on soil quality. *Eurasian Journal of Soil Science*, 10(2), 150-160. <https://doi.org/10.18393/ejss.843861>
12. Islam, K. R., Roth, G., Rahman, M. A., Didenko, N. O., & Reeder, R. C. (2021). Cover Crop Complements Flue Gas Desulfurized Gypsum to Improve No-till Soil Quality. *Communications in Soil Science and Plant Analysis*. <https://doi.org/10.1080/00103624.2021.1872594>

13. Amoakwah, E., Ahsan, S., Rahman, M. A., Asamoah, E., Asamoah, D. K., Ali, M., & Islam, K. R. (2020). Assessment of Heavy Metal Pollution of Soil-water-vegetative, Ecosystems Associated with Artisanal Gold Mining. *Soil and Sediment Contamination: An International Journal*, 29, 788-803.  
<https://doi.org/10.1080/15320383.2020.1777936>
14. Rossner, A., Williams, P. R. D., Mellas-Hulett, E., & Rahman, M. A. (2020). Analysis of Historical Worker Exposures to Respirable Dust from Talc Mining and Milling Operations in Vermont. *Annals of Work Exposures and Health*, 1-14.
15. Shohel, M., Kistler, M., Rahman, M. A., Kasper-Giebl, A., Reid, J. S., & Salam, A. (2017). Chemical Characterization of PM2.5 collected from a rural coastal island of the Bay of Bengal (Bhola, Bangladesh). *Environ Sci Pollut Res*.  
<https://doi.org/10.1007/s11356-017-0695-6>
16. Shohel, M., Kistler, M., Rahman, M. A., Kasper-Giebl, A., Reid, J. S., & Salam, A. (2017). Trace Metals Concentrations at the Atmosphere Particulate Matters in the Southeast Asian Mega City (Dhaka, Bangladesh). *Open Journal of Air Pollution*, 4, 86-98.
17. Rahman, M. A., Rossner, A., & Hopke, P. K. (2017). Carbon Monoxide Off-Gassing from Bags of Wood Pellets. *Ann Work Expo Health*, 62(2), 248-252.
18. Rahman, M. A., Rossner, A., & Hopke, P. K. (2017). Occupational exposure of aldehydes resulting from the storage of wood pellets. *Journal of Occupational and Environmental Hygiene*, 14(6), 417-426.  
<https://doi.org/10.1080/15459624.2017.1285491>
19. Rahman, M. A., Squizzato, S., Luscombe-Mills, R., Curran, P., & Hopke, P. K. (2017). A Continuous Ozonolysis Process to Make No Emission Wood Pellets. *Energy Fuels*, 31, 8228-8234.
20. Rahman, M. A., & Hopke, P. K. (2017). Assessment of Methods for the Measurement of Wood. *Energy Fuels*, 31, 5215-5221.
21. Rahman, M. A., & Hopke, P. K. (2016). Mechanistic Pathway of Carbon Monoxide Off-gassing from Wood Pellets. *Energy Fuels*, 30, 5809-5815.
22. Hossain, R., Rahman, M. A., Ara, N. J., & Shafiqul Alam, A. M. (2016). Removal of Levafix Red from Aqueous Solution with Treated Jute Stick and its Relevance to Pharmaceutical Field. *Bangladesh Pharmaceutical Journal*, 19(1), 1-10.  
<https://doi.org/10.3329/bpj.v19i1.29242>
23. Abdur, R., Lim, J., Jeong, K., Rahman, M. A., Kim, J., & Lee, J. (2015). A Simple Process Based on NH<sub>2</sub>- and CH<sub>3</sub>- Terminated Monolayers for Low Contact Resistance and Adherent Au electrode in Bottom-Contact OTFTs. *Electron. Mater. Lett*.  
<https://doi.org/10.1007/s13391-016-5445-2>
24. Islam, M. F., Majumder, S. S., Mamun, A. A., Khan, M. B., Rahman, M. A., & Salam, A. (2015). Trace Metals Concentrations at the Atmosphere Particulate Matters in the Southeast Asian Mega City (Dhaka, Bangladesh). *Open Journal of Air Pollution*, 4, 86-98.
25. Ara, N. J., Rahman, M. A., & Alam, A. M. S. (2015). Effect of salts on the removal of remazol yellow by using activated charcoal prepared from sawdust. *Bangladesh J. Sci. Ind. Res.*, 50(4), 285-292.
26. Yang, K., Maniruzzaman, M., Rahman, M. A., Abdur, R., Jeong, K., Nam, H. S., Kim, M. J., & Lee, J. (2015). ITO-free organic solar cell with an PEDOT/Au/TiO<sub>2</sub> grid hybrid electrode as a transparent anode. *Current Applied Physics*, 15, S2-S7.
27. Rahman, M. A., Khanom, R., & Shafiqul Alam, A. M. (2015). Removal of Congo Red Dye from Industrial Wastewater by Untreated Sawdust. *American Journal of Environmental Protection*, 4(5), 207-213.  
<https://doi.org/10.11648/j.ajep.20150405.12>
28. Rahman, M. A., Kabir, E., & Shafiqul Alam, A. M. (2015). Removal of Arsenic (III) Present in Ground Water of Bangladesh with

- Polymer Supported Hydrated Fe(III) Oxides. *Dhaka University Journal of Science*, 63(2), 85-89.  
<https://doi.org/10.3329/dujs.v63i2.24441>
29. Rahman, M. A., Rajeeb, S., & Shafiqul Alam, A. M. (2015). Removal of Chromium (III) from Tannery Wastewater by Bioaccumulation Method Using Vallisneria sp. River-weed. *Dhaka University Journal of Science*, 63(2), 91-96.  
<https://doi.org/10.3329/dujs.v63i2.24442>
30. Rahman, M. A., Kamal, S., Salam, A., & Salam, M. A. (2014). Assessment of the quality of the poultry feed and its effect in poultry products in Bangladesh. *Journal of Bangladesh Chemical Society*, 27(1 & 2), 1-9.
31. Rana, M. S., Rahman, M. A., & Shafiqul Alam, A. M. (2014). A CV Study of Copper Complexation with Guanine Using Glassy Carbon Electrode in Aqueous Medium. *ISRN Electrochemistry*.  
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32. Maniruzzaman, M., Rahman, M. A., Jeong, K., Lee, J., & Nam, H. S. (2014). MoO<sub>3</sub>/Au/MoO<sub>3</sub>- PEDOT multilayer electrodes for ITO-free organic solar cells. *Materials Science in Semiconductor Processing*, 27, 114-120.
33. Yang, K., Rahman, M. A., Jeong, K., Nam, H. S., Kim, J., & Lee, J. (2014). Semitransparent, thin metal grid-based hybrid electrodes for polymer solar cells. *Material Science in Semiconductor Processing*, 23, 104-109.
34. Maniruzzaman, M., Rahman, M. A., Jeong, K., Nam, H. S., & Lee, J. (2014). ITO free MoO<sub>3</sub>/Au/MoO<sub>3</sub> structures using Al<sub>2</sub>O<sub>3</sub> as protective barrier between MoO<sub>3</sub> and PEDOT in organic solar cells. *Renewable Energy*, 71, 193-199.  
<https://doi.org/10.1016/j.renene.2014.05.040>
35. Rahman, M. A., Han, J. S., Jeong, K., Nam, H. S., & Lee, J. (2014). Effects of solvent on the formation of the MUA monolayer on Si and its diffusion barrier properties for Cu metallization. *Electron. Mater. Lett.*, 10(3), 671-678.
36. Nawaz, M. S., Ferdousi, F. K., Rahman, M. A., & Shafiqul Alam, A. M. (2014). Reversed Phase SPE and GC-MS Study of Polycyclic Aromatic Hydrocarbons in Water Samples from the River Buriganga, Bangladesh. *International Scholarly Research Notices*.  
<https://doi.org/10.1155/2014/234092>
37. Rana, M. S., Rahman, M. A., & Shafiqul Alam, A. M. (2014). A CV Study of Copper Complexation with Guanine Using Glassy Carbon Electrode in Aqueous Medium. *ISRN Electrochemistry*.  
<https://doi.org/10.1155/2014/308382>
38. Rana, M. S., Rahman, M. A., & Shafiqul Alam, A. M. (2014). A Cyclic Voltametric Studies of Complexation of Copper (II) with Thymine Using Glassy Carbon Electrode in Aqueous Medium. *Pakistan Journal of Analytical and Environmental Chemistry*, 15(2), 1-10.  
<https://doi.org/10.21743/pjaec/2014.v15.i2.1>
39. Ali, M. A., Rahman, M. A., & Shafiqul Alam, A. M. (2013). Use of EDTA-Grafted Anion-Exchange Resin for the Separation of Selective Heavy Metal Ions. *Analytical Chemistry Letters*, 199-207.
40. Ara, N. J., Hasan, M. A., Rahman, M. A., Salam, M. A., Salam, A., & Alam, A. M. S. (2013). Removal of Remazol Red from Textile Waste Water Using Treated Sawdust - An Effective Way of Effluent Treatment. *Bangladesh Pharmaceutical Journal*, 16(1), 93-98.
41. Rahman, M. A., Alam, M. J., Siddique, N.-E.-A., & Shafiqul Alam, A. M. (2013). Distribution of arsenic with iron, Manganese and copper in borehole sediments of the river Tista and Jamuna. *Dhaka Univ. J. Sci.*, 61(2), 207-211.
42. Hossain, M. B., Yousuf, M. A., Islam, M. R., Salam, M. A., Rahman, M. A., & Akbor, M. A. (2012). Synthesis and Characterization of Mixed Ligand Complexes of Co(II) and Fe(III) Ions with Malic Acid and Heterocyclic Amines. *Bangladesh Pharmaceutical Journal*, 15(2), 177-181.  
<https://doi.org/10.3329/bpj.v15i2.12650>
43. Rahman, M. A., Amin, S. M. R., & Shafiqul Alam, A. M. (2012). Removal of methylene blue from wastewater using activated carbon prepared from rice husk. *Dhaka*

- University Journal of Science*, 60(2), 185-189.  
<https://doi.org/10.3329/dujs.v60i2.11591>
44. Rahman, M. A., Azam, T., & Alam, A. M. S. (2012). Removal of phosphate Ions from Aqueous solutions using anthracite. *Dhaka.Univ. J. Sci.*, 60(2), 181-184.
45. Rahman, M. A., Hossain, M. M., Samad, A., & Alam, A. M. S. (2012). Removal of arsenic from groundwater with shrimp shell. *Dhaka.Univ. J. Sci.*, 60(2), 175-180.
46. Rahman, M. A., Faruque, M. O. (2012). Application of anion exchange resin for the separation of metals in tert-butyl alcohol-water-formic acid medium. *Dhaka.Univ. J. Sci.*, 60(1), 15-20.
47. Rahman, M. A., Rahim, A., Siddique, N.-E.-A., & Alam, A. M. S. (2013). The level of selected metal contents and other pollutants in urban atmosphere in Dhaka Bangladesh. *Dhaka.Univ. J. Sci.*, 61(1), 41-46.
48. Rahman, M. A., Hasan, M. M., Siddique, N.-E.-A., & Alam, A. M. S. (2011). Mobilization of Arsenic with Iron, Manganese and Copper in Borehole Sediments of the River Jamuna. *Journal of Bangladesh Chemical Society*, 25(1), 30-37.
49. Rahman, M. A., Salam, M. A., Salam, A., Roy, M., Jahan Ara, N., & Alam, A. M. S. (2012). Mineral content of different bottled water available in Bangladesh: Assessment of their compliance with current regulations. *J. Asiat. Soc. Bangladesh. Sci.*, 38(1), 7-15.
50. Khan, F., Salam, M. A., Rahman, M. A., Salam, A. M. S., & Alam, A. M. S. (2012). Interaction of 1-pyrrolidine carbodithioic acid with Cu(II), Ni(II) and Co(II) ions. *Bangladesh Pharmaceutical Journal*, 15(1), 23-29.
51. Siddiki, A. K. M. N., Rahman, M. S., Rahman, M. A., Salam, M. A., Salam, A., & Yousuf, M. F. (2012). Synthesis and antimicrobial studies of copper (II) metal complexes that specifically recognize nucleic acid bases. *Bangladesh Pharmaceutical Journal*, 15(1), 83-87.
52. Rahman, M. A., Hasan, M. A., Salam, M. A., Salam, A., Siddique, N.-E.-A., & Shafiqul Alam, A. M. (2012). Betel-nut Peel as an Adsorbent in the Removal of Cd, Cr, and Pb from Aqueous Solutions. *Pakistan Journal of Analytical and Environmental Chemistry*, 13(2), 137-147.  
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53. Rahman, M. A., Kwon, T., Lee, Y. K., Rahim, A., Nam, H., Hong, J.-W., Lee, J. K., Soh, H., & Lee, J. (2012). A novel method for patterning of poly(3,4-ethylenedioxythiophene) films using UV exposure-activated self-assembled monolayers. *J. Nanoscience and Nanotechol.*, 12, 1457-1460.
54. Rahman, M. A., Kim, H., Lee, Y. K., Lee, C., Nam, H., Lee, J.-S., Soh, H., Lee, J. (2012). High performance flexible organic thin film transistors (OTFTs) with octadecyltrichlorosilane/Al<sub>2</sub>O<sub>3</sub>/poly(4-vinylphenol) multilayer insulators. *J. Nanoscience and Nanotechol.*, 12, 1348-1352.
55. Rahman, M. A., Rahim, A., Maniruzzaman, M., Yang, K., Lee, C., Nam, H., Soh, H., Lee, J. (2011). ITO-free low-cost organic solar cells with highly conductive poly (3,4-ethylenedioxythiophene): p-toluene sulfonate anodes. *Solar Energy Mater. & Solar Cells*, 95, 3573-3578.
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57. Rahman, M. A., Park, H., Kim, A., Lee, C., & Lee, J. (2010). Selective Deposition of Copper with Iodine Assisted Growth of MOCVD on an MPTMS Monolayer Surface at a Low Temperature. *Electronic Materials Letters*, 6(4), 209-213.  
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58. Chowdhury, N., Rahman, M. A., & Shafiqul Alam, A. M. (2010). Application of anion exchange for the separation of metals in 1-4 Dioxan-Water-Formic acid medium. *Dhaka.Univ. J. Sci.*, 58(1), 1-5.
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- metals with humic acid. *Pak. J. Anal. Environ. Chem.*, 11(1), 42-52.
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  61. Shah, A. K. A., Rahman, M. A., & Shafiqul Alam, A. M. (2010). Application of Cation Exchange for the Separation of Metals in Mixed Solvent Media. *Dhaka Univ. J. Sci.*, 58(1), 17-21.
  62. Nahar, Z., Azad, M. A. K., Rahman, M. A., Rahman, M. A., Bari, W., Islam, S. N., & Islam, M. S. (2009). Comparative analysis of Serum Manganese, Zinc, Calcium, Copper and Magnesium Level in Panic Disorder Patients. *Biol Trace Elem Res.*
  63. Hossain, M. A., Rahman, M. A., Siddique, N.-E.-A., & Shafiqul Alam, A. M. (2009). Temporal variation of Water Quality Parameters of the Three Rivers around Dhaka City. *Dhaka Univ. J. Sci.*, 57(2).
  64. Siddique, N. A., Islam, M. A., Rahman, M. A., & Shafiqul Alam, A. M. (2009). The Relationship of Arsenic with Other Metals in Drinking Water at highly Endemic Areas in Bangladesh. *Dhaka Univ. J. Sci.*, 57(1).
  65. Hossain, M. B., Rahman, M. A., & Shafiqul Alam, A. M. (2009). Nutritional Status of Edible Pulses Commonly Consumed in Bangladesh. *Dhaka Univ. J. Sci.*, 57(2).
  66. Rahman, M. A., Gazi, A. K., & Shafiqul Alam, A. M. (2008). Application of Anion Exchange Resin For The Separation of Metals In Acetone -Water-Formic Acid Medium. *J. Bangladesh Chem. Soci.*, 21(2), 139-148.
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  75. Rahman, M. A., Kaneco, S., Suzuki, T., Katsumata, H., & Ohta, K. (2005). Optimized solar photocatalytic degradation of bisphenol A in water using Zinc oxide and the comparison of its efficiency with titanium dioxide. *Annali. Di Chimica., Societa Chimica Italiana*, 95, 715-719.
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## RESEARCH GRANTS AWARDED

<b>SUPPORTING AGENCY AND AGENCY ACTIVE AWARD</b>	<b>TOTAL \$ AMOUNT</b>	<b>EFFECTIVE AND EXPIRATION DATES</b>	<b>TITLE OF PROJECT</b>
ODA Specialty Crop Block Grant	\$55,000	2021-2023	Improving tomato yield and quality using nano fertilization with salicylic acid.
CRDF-GLOBAL	\$74,000	2021-2022	Recycling municipal biosolids to improve marginal land quality for economically viable and environmentally compatible bioenergy feedstock production in Ukraine.
OSU Internal Grant	\$50,000	2022-2023	Developing Al-Fe/LDH Intercalated Activated Carbon Composite Adsorbent to control edge-of-field loss phosphorous and nitrogen
USDA-CBG	\$242,000	2022-2025	Development of a holistic photocatalytic approach for controlling agriculturally-induced algal blooms and associated cyanotoxins in lakes and reservoirs
USDA-ODA	\$58,000	2022-2024	Nano NPK and Salicylic Acid Fertilization on Tomato Phytochemicals and Fruit Quality
USDA-ODA	\$85,000	2025-2026	Boosting Bell Pepper Yield and Phytochemical Content: A Drip Irrigation Approach with Gibberellic Acid and Naphthalene Acetic Acid