CV of the Dr Anisur Rahman

A. Name: **Dr. ANISUR RAHMAN**

B. **Official Mailing Address:**

Department of Farm Power and Machinery
Bangladesh Agricultural University
Mymensingh-2202, Bangladesh
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C. Academic Attainment:

Degree	Year	University	Major Field
Postdoctoral Researcher	2019/04-2020/11	Zhejiang University, China	Nondestructive Sensing Engineering
Postdoctoral Research Associate	2016/04-2018/03	Chungnam National University, South Korea	Nondestructive Sensing Engineering
Doctor of Agricultural Science	November/2015	Kyoto University, Japan	Nondestructive Sensing Engineering
Master of Science in Farm Power and Machinery	December/2010	Bangladesh Agricultural University	Bio-composite Engineering
Bachelor of Science in Agricultural Engineering	April/2008	Bangladesh Agricultural University	Farm Power and Machinery

D. Research / Teaching Experience: **15 (Fifteen) Years**

Position	Period of service
Professor Department of Farm Power and Machinery Bangladesh Agricultural University, Mymensingh Bangladesh.	October 2020 to date
Associate Professor Department of Farm Power and Machinery Bangladesh Agricultural University, Mymensingh Bangladesh.	October 2016 - September 2020
Postdoctoral Researcher College of Biosystems Engineering and Food Science Zhejiang University, Hangzhou China.	April 2019 - November 2020
Postdoctoral Research Associate Department of Biosystems Machinery Engineering Chungnam National University, Daejeon South Korea.	April 2016 - March 2018

Assistant Professor Department of Farm Power and Machinery Bangladesh Agricultural University, Mymensingh Bangladesh.	October 2011 - September 2016	
Visiting Student Department of Chemical and Biological Engineering University of Saskatchewan, Saskatoon Canada.	January 2010 - June 2010	
Lecturer Department of Farm Power and Machinery Bangladesh Agricultural University, Mymensingh Bangladesh.	October 2009 - September 2011	

E. Area of Expertise: **Machine vision, Spectroscopy, Hyperspectral Imaging & ICT in Agriculture**

Google Scholar URL: https://scholar.google.com/citations?user=gxfxvlwAAAAJ&hl=en

ResearchGate URL: https://www.researchgate.net/profile/Anisur-Rahman-27

ORCID: https://orcid.org/0000-0003-1466-4310

F. List of research project:

1. **Development and evaluation of a star-cum-cono weeder for rice** (Funded by Bangladesh Agricultural University Research System (BAURES) from July 2011 to June 2012).

2. **Inspection of Paddy Seed Viability using Hyperspectral Imaging Technique** (Funded by Ministry of Science and Technology (MoST) from July 2022- June 2023).

3. **Automated Real-Time Grading System for Potato using Machine Vision Technology** (Funded by Bangladesh Agricultural University Research System (BAURES) from February 2022 to January 2024).

4. **Sensor-Based Variable-Rate Agrochemical Spraying System for Disease Control in Paddy Field** (Funded by Ministry of Education (MoE) from July, 2022-June, 2024).

5. **Prediction of Mango Quality using MQ-based Electronic Nose (E-Nose)** (Funded by Ministry of Science and Technology (MoST) from July 2023- June 2024).

6. **Assessment of Paddy Seed Viability using Hyperspectral and Color Image** (Funded by University Grants Commission (UGC) from September 2023 to August 2024).

7. **Robotic Picking Arm for Automated Tomato Harvesting System** (Funded by Bangladesh Agricultural University Research System (BAURES) from July 2024 to June 2026).

G. List of articles published in peer-reviewed journals:

1. Rahman, K.S., Rakib, M.R.I., Salehin, M.M., Ali, M.R., **Rahman, A**. 2024. Assessment of paddy leaves disease severity level using image processing technique. Smart Agricultural Technology, 7:100410. https://doi.org/10.1016/j.atech.2024.100410

2. Mimmi, S. F., **Rahman, A**., Anzum, M. N., Saha, C. K. 2023. Investigation of BADC installed arctype plastic and net covered greenhouse for production of high value crops in Bangladesh. Fundamental and Applied Agriculture, 8(3):602–614. doi: 10.5455/faa.158797

3. Bhuiyan, M. G. K., Alam, M. M., **Rahman, A.,** and Huda, M. D. 2022. Value Chain Analysis of Milled Rice Produce in Husking Rice Mill. Bangladesh Rice J. 26 (2): 19-39. doi.org/10.3329/brj.v26i2. 66731

4. Haider, H., Ritu, T.I., Zubaer, M.A.A., Alam, M., Islam, M.H. and **Rahman, A.** 2022. Prediction of SPAD Values for Paddy Leaves using Direct Contact Imaging Method. Journal of Bangladesh Agricultural University, 20(2): 211–216. https://doi.org/10.5455/JBAU.100059.

5. Rabbani, M. A. E. R., M. S. Basir, M. Aliuzzaman, **A. Rahman** 2022. Optimization of a solar light trap for controlling the pest in rice field. Agricultural Engineering International: CIGR Journal, 24 (2):43-50.

6. Islam, M.H., **A. Rahman**, M.S. Rana 2021. Potato grading based on size features by machine vision technique. Journal of Bangladesh Agricultural University, 19(4): 528–532. https://doi.org/10.5455/JBAU.123862

7. Basir, M. S., M. A. Rabbani, S. M. Rifat, W. Tanzim, **A. Rahman** 2021. Development and evaluation of an automated maize seeder for marginal farmers in Bangladesh. IAEJ, 30(1): 59-67.

8. **Rahman, A.,** S. Wang, J. Yan, H. Xu 2021. Intact Macadamia Nut Quality Assessment Using Near-Infrared Spectroscopy and Multivariate Analysis. Journal of Food Composition and Analysis,102: 104033.

9. Milufarzana, G.S. Jim, S. Banu, M.R. Hasan, **A. Rahman** 2021. Development and evaluation of solar powered manually operated sprayer cum grasscutter. Fundamental and Applied Agriculture, 6(1):35-42.

10. Ansari, N., S. S. Ratri, A. Jahan, M.A. Rabbani, **A. Rahman** 2021. Inspection of paddy seed varietal purity using machine vision and multivariate analysis. Journal of Agriculture and Food Research, 3: 100109.

11. Faqeerzada, M. A., **A. Rahman**, G. Kim, E. Park, R. Joshi, S. Lohumi, B-K. Cho 2020. Prediction of moisture contents in green peppers using hyperspectral imaging based on a polarized lighting system. Korean Journal of Agricultural Science, 47(4):995-1010.

12. **Rahman, A.,** M. R. Ali, M. S. N. Kabir, M. M. Rahman, M. R. A. Mamun, M. A. Hossen 2020. Agricultural mechanization in Bangladesh: status and challenges towards achieving the sustainable development goals (SDGs). Agricultural Mechanization in Asia, Africa & Latin America, 51(4):106-120.

13. **Rahman, A**., E. Park, H. Bae, B-K. Cho 2018. Hyperspectral imaging technique to evaluate the firmness and the sweetness index of tomatoes. Korean Journal of Agricultural Science, 45(4):823-837.

14. Faqeerzada, M. A., **A. Rahman**, R. Joshi, B-K. Cho 2018. Postharvest technologies for fruits and vegetables in South Asian countries: a review. Korean Journal of Agricultural Science, 45(3):325-353.

15. **Rahman, A,** M. A. Faqeerzada, R. Joshi, S. Lohumi, L.M. Kandpal, Hoonsoo Lee, Changyeun Mo, Moon S. Kim, B-K. Cho 2018. Quality analysis of stored bell peppers using hyperspectral imaging. Transactions of the ASABE, 61(4): 1199-1207.

16. **Rahman, A.,** H. Lee, M.S. Kim, B-K. Cho 2018 Mapping the pungency of green pepper using hyperspectral imaging. Food Analytical Methods, 11(11):3042–3052.

17. Lohumi S, H Lee, MS Kim, J Qin, LM Kandpal, H Bae, **A. Rahman** and B-K Cho 2018. Calibration and testing of a Raman hyperspectral imaging system to reveal powdered food adulteration. PLoS ONE 13(4): e0195253.

18. **Rahman, A**, M. A. Faqeerzada, B-K. Cho 2018. Hyperspectral imaging for predicting the allicin and soluble solid content of garlic with variable selection algorithms and chemometric models. Journal of the Science of Food and Agriculture,98(12):4715-4725.

19. **Rahman, A.,** C. Mo and B-K. Cho 2017. 3-D Image reconstruction techniques for plant and animal morphological analysis-a review. Journal of Biosystems Engineering, 42(4):339-349.

20. Alam, M. M., M. I. N. Khan, C. K. Saha, **A. Rahman** and M. G. K. Bhuyian 2017. Manufacturing of agricultural machinery in Bangladesh: opportunities and constraints. Agricultural Engineering International: The CIGR e-journal, 9(1):122-135.

21. Lohumi, S., R. Joshi, L. M. Kandpal, H. Lee, M. S. Kim, H. Cho, C. Mo, Y-W. Seo, **A. Rahman** and B.-K. Cho 2017. Quantitative analysis of Sudan dye adulteration in paprika powder using FT-IR spectroscopy. Food Additives & Contaminants: Part A, 34(5):678-686.

22. **Rahman, A.**, L.M. Kandpal, S. Lohumi, M.S. Kim, H.Lee, C. Mo and B-K. Cho 2017. Nondestructive estimation of moisture content, pH and soluble solid contents in intact tomatoes using hyperspectral imaging. Applied Sciences, 7(1), 109.

23. **Rahman, A.**, B-K. Cho 2016. Assessment of seed quality using non-destructive measurement techniques: a review. Seed Science Research, 26(4):285-305.

24. **Rahman, A.**, N. Kondo, Y. Ogawa, T. Suzuki, Y. Shirataki and Y. Wakita 2016. Classification of fresh and spoiled fish using ultraviolet-visible spectra of eye fluid with multivariate analysis. Engineering in Agriculture, Environment and Food, 9(1):64-69.

25. **Rahman, A**., N. Kondo, Y. Ogawa, T. Suzuki and K. Kanamori 2016. Determination of K value for fish flesh with ultraviolet–visible spectroscopy and interval partial least squares (iPLS) regression method, Biosystems Engineering, 141:12-18.

26. **Rahman, A.**, N. Kondo, Y. Ogawa, T. Suzuki, Y. Shirataki and Y. Wakita 2015. Prediction of K value for fish flesh based on ultraviolet-visible spectroscopy of fish eye fluid using partial least squares regression. Computers and Electronics in Agriculture, 117:149-153.

27. Milufarzana, **A. Rahman**, M. M. Alam, and M. R. Ahmed 2015. Economic parameter of maize sheller for custom hire service in Bangladesh. Agricultural Engineering International: The CIGR e-journal, 17(2):146-150.

28. Ali, M. R., O. Kozan, **A. Rahman**, K. T. Islam, and M. I. Hossain 2015. Jute retting process: present practice and problems in Bangladesh. Agricultural Engineering International: The CIGR e-journal, 17(2):243-247.

29. Chowdhury, M., S. N. Hossain, M. R. Ali and **A. Rahman** 2014. Improvement and evaluation of star-cum-cono weeder for wetland. Journal of Agricultural Engineering, IEB. 41/AE(1): 1-7.

30. **Rahman, A.**, M. Latifunnahar and M. M. Alam 2013. Financial management for custom hire service of tractor in Bangladesh. International Journal of Agricultural and Biological Engineering, 6(3): 28-33.

31. **Rahman, A.**, S. Panigrahi, R. L. Kushwaha, and M. M. Alam 2013. Effect of fiber diameter on properties of compression molded flax fiber-reinforced biocomposites. International Journal of Composite Materials. 3(5):122-129.

32. **Rahman, A.,** M. M. Alam, Milufarzana, J. Yasmin, M. R. Ahmed 2012. Development and evaluation of a star-cum-cono weeder for wet lands. Bangladesh Journal of Agricultural Engineering. 23 (2):33-40.

33. Muhit, A., C. Roy, **A. Rahman**, T. Ahamed 2011. Municipal solid waste mapping of Mymensingh Town using GIS Arcview. Bangladesh Research Publications Journal, 5(3):271-281.

34. **Rahman, A**., S. Panigrahi, R. L. Kushwaha, M. M. Alam, M. G. K Bhuiyan, M. A. Hossen 2011. Physio-mechanical properties of compression molded fine flax fiber-reinforced composite. Eco-friendly Agriculture Journal. 4(6): 628-632.

35. Sarkar, K. M. A. S., M. M. Alam, **A. Rahman**, M G K Bhuiyan 2011. Post-harvest losses in mango value chain. International Journal of BioResearch. 10 (5):25-31.

36. **Rahman, A.,** M. Latifunnahar, M. M. Alam 2009. Selection of Minimum Cost Inputs for Boro Rice Cultivation in Bangladesh. Journal of Agricultural Machinery and Bioresources Engineering 5(1& 2): 69–77.

H. List of conference proceedings:

1. **Rahman, A.,** R. L. Kushwaha, S. R. Ashrafizadeh, S. Panigrahi 2011. Prediction of energy requirement of a tillage tool in a soil bin using artificial neural network. ASABE Paper Number: 1111122, Proceedings of the ASABE Annual International Meeting, Louisville, Kentucky, USA, August 7 – 10.

2. Panigrahi, S., R. L. Kushwaha, **A. Rahman** 2012. Impact of fibre diameter on mechanical properties of flax based composite. ASABE Paper Number: 12-1337664, Proceedings of the ASABE Annual International Meeting, Dallas, Texas, USA, July 29–August 1.

3. **Rahman, A.,** N. Kondo, Y. Ogawa, T. Suzuki, Y. Shinohara, T. Shiigi, Y. Shirataki and Y. Wakita 2014. Freshness evaluation of Japanese dace fish based on UV spectral properties of eye fluid. Proceedings of the 73th Japanese Society of Agricultural Machinery and Food Engineers (JSAM) Annual Meeting, May 16-19, Okinawa, Japan.

4. **Rahman, A.,** N. Kondo, Y. Ogawa, T. Suzuki, Y. Shinohara, T. Shiigi, Y. Shirataki and Y. Wakita 2014. Discrimination between fresh and spoiled fish using UV spectra of eye fluid. Proceedings of the 7th International Symposium on Machinery and Mechatronics for Agriculture and Biosystems Engineering (ISMAB), Yilan, Taiwan, May 21-23.

5. **Rahman, A.,** Q. Wu, H. Chang, S. Wang, J. Yan, H. Xu 2020. Assessment of intact macadamia nut internal defects using near-infrared spectroscopy. ASABE Annual International Virtual Meeting. https://doi.org/10.13031/aim.202000321.

6. Islam, M. H., T. U. Hasan, **A. Rahman**, R. Nandi 2021. Detection and quantification of plant leaf disease in-field using image processing technique. The 79th Annual Meeting on The Japanese Society of Agricultural Machinery and Food Engineers (Online), September 13-15.

I. List of conference paper presented:

1. Rakib, M. R. I., Rahman, K. S., Salehin, M. M., Alam, M.S., Ahamed, S., Islam, M. H., **A. Rahman** 2023. Assessment of Paddy Leaves Disease Severity Using Real-Time Image Processing Technique. International Conference on Climate Smart Agriculture & the 4th Agricultural Revolution, Khulna University, Bangladesh, 19-20 October**.**

2. Uddin, M. K., Salehin, M. M., Alam, M.S., Ahamed, S., Islam, M. H., **A. Rahman** 2023. Development of a Variable Rate Spraying System for Agrochemicals. International Conference on Climate Smart Agriculture & the 4th Agricultural Revolution, Khulna University, Bangladesh, 19-20 October **(Poster presentation).**

3. Himel, M.M.H, S. Ahamed, **A. Rahman** 2022. Development of an automated real-time potato grading system. The 3rd Annual Paper Meet, Agricultural Engineering Division, IEB: The Institution of Engineers, BARI, Bangladesh, 17-19 November **(Poster presentation).**

4. Siam, A. A., M. H. Islam, **A. Rahman** 2022. Assessment of paddy seed viability using hyperspectral imaging technique combined with multivariate analysis. The 3rd Annual Paper Meet, Agricultural Engineering Division, IEB: The Institution of Engineers, BARI, Bangladesh, 17-19 November.

5. Haider, H., M. Alam, **A. Rahman** 2022. Smartphone-based direct contact imaging method for estimation of paddy leaves SPAD value. The 3rd Annual Paper Meet, Agricultural Engineering Division, IEB: The Institution of Engineers, BARI, Bangladesh, 17-19 November.

2. Ratri, S. S., A. Jahan, N. Ansari, **A. Rahman** 2021. Machine vision technique for rapid measurement of paddy seed varietal purity. IPB International Online Seminar, IPB University, Bogor, Indonesia, September 23.

3. Ansari, N., S. S. Ratri, A. Jahan, M.A. Rabbani, **A. Rahman** 2019. Rapid inspection of paddy seed varietal purity using machine vision technique. International Conference on Sustainable Agriculture (ICSA), Bangladesh Agricultural University campus, Bangladesh, October 19-20.

4. **Rahman, A.,** H. Bae, H. Lee, I. Baek, M.S. Kim, C. Mo, B-K Cho 2018. Quality measurement of bell peppers using hyperspectral near infrared imaging. Proc. SPIE 10665, Sensing for Agriculture and Food Quality and Safety X, 1066506; doi: 10.1117/12.2307709.

5. **Rahman, A.,** M.A. Faqeerzada, B-K. Cho 2017. Internal quality analysis of garlic (*Allium sativum*) using hyperspectral imaging technique. KSAM 2017 spring conference, Kimdaejung Convention Center, Gwanju, South Korea. October 26-27.

6. M.A. Faqeerzada, **Rahman, A.,** B-K. Cho 2017. Hyperspectral imaging for green pepper moisture content prediction using polarized lighting systems. KSAM 2017 spring conference, Kimdaejung Convention Center, Gwanju, South Korea. October 26-27.

7. **Rahman, A.**, M.A. Faqeerzada, R. Joshi, B-K. Cho 2017. Hyperspectral imaging coupled with multivariate method to predict soluble solid contents and titratable acidity in stored bell pepper. 2017 KoSFoST International Symposium and Annual Meeting, ICC Jeju, South Korea. June 21-23 **(Poster presentation).**

8. Faqeerzada, M.A., **A. Rahman**, B-K. Cho 2017. Prediction the moisture content of green pepper using hyperspectral imaging. 2017 KoSFoST International Symposium and Annual Meeting, ICC Jeju, South Korea. June 21-23 **(Poster presentation).**

9. **Rahman, A.,** M.A. Faqeerzada, R. Joshi, B-K. Cho 2017. Evaluation of firmness and sweetness index of tomatoes using hyperspectral imaging. KSAM 2017 spring conference, Kyungpook National University in the field Agricultural Machinery Research Center, Gunwi, South Korea. April 6-7 (**Best Oral presentation Award**).

10. Kandpal, L. M., **A. Rahman**, S. Lohumi, B-K. Cho 2016. Hyperspectral imaging technique for detection of API contents in pharmaceutical powder blends. Proceedings of the KSAM & KSPA 2016 Autumn conference, Cheonan Evergreen Resort, Cheonan, South Korea. November 2-3 (**Best Poster presentation**).

11. **Rahman, A.** and B-K. Cho 2016. Bruise detection using short wavelength infrared (SWIR) hyperspectral imaging system for tomato. Proceedings of the KSAM & KSPA 2016 Autumn conference, Cheonan Evergreen Resort, Cheonan, South Korea. November 2-3 (**Poster presentation**).

12. **Rahman, A.** 2015. Fluorescence spectra of fish eye fluid and lens during storage time. The SPIRITS Workshop on Establishment of Database of Fluorescence Properties in Asian Agriculture, Livestock and Aquaculture for 9 Billion People's Food Production, Sanur Paradise Plaza Hotel, Bali, Indonesia, November 17~19.

13. **Rahman, A.,** N. Kondo, Y. Ogawa, T. Suzuki, Y. Shirataki and Y. Wakita 2015. K value prediction of fish flesh using UV-VIS spectroscopy of fish eye fluid with PLS regression, Proceedings of the EFITA/WCCA/CIGR Conference, Poznan, Poland, June 29 ~ July 2.

14. **Rahman, A.**, N. Kondo, Y. Ogawa, T. Suzuki, Y. Shirataki and Y. Wakita 2014. Classification of fresh and spoiled fish using UV spectra of eye fluid. The 132th Regular Meeting, Kansai Branch of JSAM, Satellite Campus of Gifu University, Japan, September 25~26.

15. **Rahman, A.,** Y. Shinohara, T. Shiigi, N. Kondo, M. Yamanaka, A. Takabata and T. Morita 2013. Design and performance evaluation of an automatic counting system for Torigai spat (*Fulvia Mutica*). The 130th Regular Meeting, Kansai Branch of JSAM, Mie University, Japan, 30th October ~ 1st November.

16. Panigrahi, P. K., S. Panigrahi, **A. Rahman**, R. L. Kushwaha 2011. Influence of flax diameter on mechanical properties of biocomposite. SAE Commercial Vehicle Engineering Congress, Session: Sustainability, Illinois, USA. September 13~14.

J. Peer Review Experience:
- Engineering in Agriculture, Food and Environment
- Computer Electronics in Agriculture
- Information processing in Agriculture

- Biosystems Engineering
- IEEE access
- International Food Research Journal
- Research in Agricultural Engineering
- Fundamental and Applied Agriculture
- Journal of Bangladesh Agricultural University
- Vibrational Spectroscopy
- Microelectronics Reliability
- Journal of Food Processing and Preservation
- Journal of Chemometrics
- Engineering Journal
- Journal of Analytical Methods in Chemistry
- Heliyon
- Applied Sciences
- Journal of Biosystem Engineering
- Spectroscopy letters

K. **Scholarships, Awards And Honors**:
- Global Research Impact Recognition Award, Bangladesh Agricultural University Research System (BAURES), Bangladesh Agricultural University, Mymensingh [2024]
- Global Research Impact Recognition Award, Bangladesh Agricultural University Research System (BAURES), Bangladesh Agricultural University, Mymensingh [2021]
- International Postdoctoral Exchange Fellowship (Talent-Introduction Program), Zhejiang University, Hangzhou [April/2018-March/2021]
- BK21 Post-Doctoral Research Fellowship, Chungnam National University, S. Korea [April/2016-March/2018]
- Best Poster Presentation Award, KSAM & KSPA 2016 Autumn Conference, S. Korea [November/2016]
- Best Paper Presentation Award, Korean Society of Agricultural Machinery (KSAM) conference 2017 [April/2017]
- Best Publication Award 2016, BAU Teacher's Association 2016 [January/2017]
- Travel grant for EFITA/WCCA/CIGR 2015 Conference at Poznan, Poland [September 2015]
- Travel grant for ISMAB 2014 conference at Taiwan [May 2014]
- Japanese Government (Monbukagakusho) Scholarship, Kyoto University, Japan [October/2012-September/2015]
- Canadian Commonwealth Exchange Program, Asia-Pacific fellowship, University of Saskatchewan, Canada [January-June/2010]