

Dr. Abdul Momin

Assistant Professor in Agricultural Engineering Technology
Tennessee Tech University at Cookeville, TN, 38505
momin@ntech.edu +1 217-904-4179

Vision

Application of digital technologies in the agri-food sector to provide abundant and high-quality food while minimizing environmental impacts.

Educational background

Name of Degree	University	Date of degree conferred
Ph.D. in Agricultural Science	Kyoto University, Japan	03/25/2013
M.S. in Agricultural Engineering	Bangladesh Agricultural University	07/20/2006
B.Sc. in Agricultural Engineering	Bangladesh Agricultural University	08/16/2004

Areas of research interest

- Precision agriculture
- Postharvest technologies: drying/storage/quality
- Spectroscopic measurement techniques & analysis
- Computer vision and image processing
- Bioinstrumentation and biosensing
- High throughput in-field phenotyping

Technical skills

- Microsoft Suite (Word, Excel, PowerPoint, Outlook)
- MATLAB: image processing, data analysis
- National Instruments LabVIEW and CompactRIO
- Microsoft Visual C++ & OpenCV: Image processing
- SAS University Edition
- Project management
- QGIS: analysis of geospatial data
- PLS Toolbox: Model development
- The Unscrambler: Camo-Analysis
- Python

Employment background

Name of organization/place	Position	Date of employment
Tennessee Tech University (TN Tech)	Assistant Professor	01/01/2023 – date
University of Arkansas at Pine Bluff (UAPB)	Assistant Professor	08/01/2021 – 12/31/2022
Dept. of Health Care Services, CA	Research Data Specialist	02/18/2020 – 07/31/2021
University of California Davis (UCD)	Postdoctoral Scholar	01/01/2018 – 02/15/2020
University of Illinois at Urbana-Champaign	Postdoctoral Researcher	03/21/2016 – 12/31/2017
North Dakota State University (NDSU)	Research Specialist	11/21/2014 – 05/21/2015
Bangladesh Agricultural University (BAU)	Assistant Professor	04/30/2007 – 03/24/2013
Bangladesh Agricultural University (BAU)	Lecturer	04/30/2005 – 04/29/2007

Undergraduate teaching experience

University	List of courses
Tennessee Tech University	AGR 1020 Connections to Agriculture, AGET 3520 Agricultural Spatial Technology, AGET 3540 Application of GIS and GPS in Agriculture and Natural Resources, AGET 4220 Agri Machinery/Tractors, AGET 4620 Agricultural Structures, AGET 4850 Engineering Tech Design
University of Arkansas at Pine Bluff	AGEN 3385 Agricultural Tractor Power, AGEN 4325 Design of Agricultural Structures, AGEN 3365 Food Process Engineering, AGEN 4340 Design of Agricultural Field Machinery

University of Illinois (instructor)	ABE 464 Engine and Tractor Power, ABE 361 Off-road Machine Design, TSM 262 Off-road Equipment Management
Bangladesh Agricultural University	FPM 111 Farm Mechanics, FPM 121 Elements of Agricultural Engineering, FPM 311 Agricultural Power, FPM 321 Agricultural Machinery, FPM 325 Heat and Mass Transfer, FPM 401 Agricultural Mechanization; FPM 403 Agricultural Process Engineering, FPM 425 Agricultural Machinery Design

Graduate teaching experience

University	Date/semester	List of courses
University of Arkansas at Pine Bluff	Fall 2021	GAGRI 6408 Postharvest Physiology
Bangladesh Agricultural University	04/01/2013 – 03/15/2016	FPM 501 Farm Power, FPM 503 Instrumentation FPM 508 Bio-resources Engineering

Current student supervision

Student	Degree program	Research topic	Year	Institution
Bayazid Rahman	PhD	Crop Management with DL and RS	On-going	TN Tech
Ahmad Tulsi	MS	Hyperspectral imaging for water quality		

Student supervision experience

Student	Degree program	Thesis/Research project	Year	Institution
Lalita Panduangnat	Visiting PhD program	Weed detection using machine low-resolution RGB imagery	2024	TN Tech
Alice Dien	MS	Performance evaluation of desiccant-based drying system	2020	UC Davis
Paul Wempe	MS	Harvesting machinery technologies for sustainable sugarcane production	2017	UIUC
Ashraful Alam	MS	Paddy drying technologies for small traders & farmers	2016	BAU
Mizanur Rahman	MS	Field performance evaluation of power chopper machine	2015	BAU
Fardous Alam	MS	Tobacco leaf processing and storage using flue cured method	2015	BAU
Towfiqur Rahman	BSc	Identification color properties of mangos using image analysis	2015	BAU
Razia Sultana	BSc	Construction of machine vision system for grading operation	2013	BAU
Fardous Alam	BSc	Performance evaluation of a power tiller operated potato planter	2013	BAU
Ido Kyohei	MS	Identification of fluorescent substances contained in citrus	2012	Kyoto University
Jahangir Hossain	BSc	Weed management in rice field planted by drum seeder	2007	BAU

Research grants

Title of project	Supporting agency	Awarded	Served as	Year
o Affordable Weed Detection in Corn Fields Using Low-Resolution RGB Imagery and Machine Learning	Rural Reimagined Faculty Grant	\$18,450	PI	2024
o Engaging students through affordable and open-source precision	TN Tech CITL	\$8,000	PI	2024

agriculture practices for experiential learning				
○ Corn yield assessment using low-cost spatial technologies to increase production efficiency and profitability	Tennessee Corn Promotion Board	\$29,920	PI	2024
○ Spatial variability of rice and soybean yield assessment using low-cost precision agriculture technologies	NIFA Research Capacity Fund (Evans-Allen)	\$60,000	PI	2022
○ Adaptation of BAU-STR dryer for postharvest loss reduction and livelihood improvement of underserved communities	USAID	\$150,000	PI	2022
○ The Farm of the Future: harnessing data-driven technology for a sustainable US agricultural system.	USDA NIFA	Total: \$3.9 M My share: \$136,600	Co-PI	2022
<u>Previously</u>				
○ Development of a computer vision system for grading mango	The World Academy of Science	\$10,000	PI	2014
○ Appropriate paddy drying technologies for small traders and farmers	Feed the Future program and USAID	Total: \$0.5 M My share: \$136,600	Co-PI	2014
○ Detection of ripped mango using machine vision	Min. of ICT, Govt. of Bangladesh	\$2,000	PI	2013
○ Feasibility of image processing technique for classification mango	UGC, Bangladesh	\$2,000	PI	2013

Publications

Journal publications

- 42 Rahman, M. T., Dipto, S., June, I., **Momin, A.**, Rashed Al Mamun, M. (2024). Machine Learning-based Disease Classification in Tomato (*Solanum lycopersicum*) Plants. *J. Tropical Agricultural Engineering and Biosystems*, 12(3), 151-160. <https://jkptb.ub.ac.id/index.php/jkptb/article/view/12072>
- 41 Jhonata SS, Valente D, Daniel MQ, Andre FC, Igor AB, **Momin A.** 2024. Automated detection of young eucalyptus plant for optimized irrigation management in forest plantations. *AgriEngineering*, 6(4), 3752-3767. <https://www.mdpi.com/2624-7402/6/4/214>
- 40 Al Riza DF, Tulsi AA, **Momin MA.** 2024. Assessing Cocoa beans fermentation degree with improved YOLOv8 instance segmentation. *Computer and Electronics in Agriculture*, Vol. 227, December 2024, 109507. <https://doi.org/10.1016/j.compag.2024.109507>.
- 39 Alam MF, **Momin MA**, Hossain MI, Akter S, Khan AU, and Ahmmed MM. 2024. Field performance evaluation of a power tiller operated potato planter. *Aust. J. Eng. Innov. Technol.*, 6(1), 19-25. <https://doi.org/10.34104/ajeit.024.019025>
- 38 Rahman, M.B.; Chakma, J.D.; **Momin, A.**; Islam, S.; Uddin, M.A.; Islam, M.A.; Aryal, S. 2023. Smart crop cultivation system using automated agriculture monitoring environment in the context of Bangladesh agriculture. *Sensors* 2023, 23, 8472. <https://doi.org/10.3390/s23208472>
- 37 **Momin, A.**; Kondo, N.; Al Riza, D.F.; Ogawa, Y.; Obenland, D. A methodological review of fluorescence imaging for quality assessment of agricultural products. *Agriculture* 2023, 13, 1433. <https://doi.org/10.3390/agriculture13071433>
- 36 Martins C.G, Valente DSM, Queiroz DM, **Momin A**, Fernandes-Filho EI, Picanço MC. 2023. Using deep neural networks to evaluate leafminer fly attacks on tomato plants. *AgriEngineering*; 5(1):273-286. <https://doi.org/10.3390/agriengineering5010018>

- 35 Dien, A., **Momin, M. A.**, Ying, T., Spang, E., Kornbluth, K., Irwin, D.G. 2022. Performance evaluation of a commercially available desiccant-based seed drying system (FlexiDry®) using corn kernels (*Zea Mays*), *Journal of the ASABE*, 65(3): 633-643. (doi:10.13031/ja.14762)
- 34 Rahman M., Faisal A., Shamsuddin S., Salvatore G., Mohammad K., Hafijur R., **Momin MA.**, Hossain M., Emad IG. 2022. GIS and remote sensing-based multi-criteria analysis for delineation of groundwater potential zones: a case study for industrial zones in Bangladesh. *Sustainability* 2022, 14(11), 6667; <https://doi.org/10.3390/su14116667>
- 33 Louis, L., Bruno T., James, T., Lizzie, S., **Momin, MA**, Spyros, F., Luigi, M., Yiannis, A., Schueller, JK., and Raj K. 2022. Yield sensing technologies for perennial and annual horticultural crops: a review. *Precision Agric* (2022). <https://doi.org/10.1007/s11119-022-09906-2>
- 32 Donis-González, I.R.; Valero, C.; **Momin, M.A.**; Kaur, A.; C. Slaughter, D. 2020. Performance evaluation of two commercially available portable spectrometers to non-invasively determine table grape and peach quality attributes. *Agronomy*, Vol.10, P.148.
- 31 Valente, S.D., **M. A. Momin**, T. E. Grift, and A.C. Hansen. Accuracy and precision evaluation of two low-cost RTK Global Navigation Satellite Systems, *Computer and Electronics in Agriculture*, Vol. 168, No. 105142, December 2019. <https://doi.org/10.1016/j.compag.2019.105142>.
- 30 **M. A. Momin**, T. E. Grift, S. Valente, and A.C. Hansen. Sugarcane yield mapping based on vehicle tracking, *Precision Agric* (2019) 20: 896. , <https://doi.org/10.1007/s11119-018-9621-2>
- 29 Edward S. Spang, Laura C. Moreno, Sara A. Pace, Yigal Achmon, Irwin Donis-Gonzalez, Wendi A. Gosliner, Madison P. Jablonski-Sheffield, **Md Abdul Momin**, Tom E. Quedsted, Kiara S. Winans, Thomas P. Tomich. 2019. Food loss and waste: measurement, drivers, and solutions, *Annual Review of Environment and Resources*, Vol. 44, pp. 13.1–13.40. <https://doi.org/10.1146/annurev-environ-101718-033228>.
- 28 Hao Gan, Sunil Mathanker, **Md Abdul Momin**, Brendan Kuhns, Neal Stoffel, Alan Hansen, and Tony Grift. Effects of three cutting blade designs on energy consumption during mowing-conditioning of *Miscanthus Giganteus*, *Biomass and Bioenergy*, Vol. 109, pp. 166-171, 2018.
- 27 Tony E. Grift, Wei Zhao, **Md Abdul Momin**, Yu Zhang and Martin O. Bohn. Semi-automated, machine vision based maize kernel counting on the ear, *Biosystems Engineering*, Vol. 164, pp. 171-180, 2017.
- 26 **M. A. Momin**, P.A. Wempe, T. E. Grift, and A.C. Hansen. Effects of four base cutter blade designs on sugarcane stem cut quality, *Transactions of the ASABE*, Vol. 60(5), pp. 1551-1560, 2017.
- 25 **Md Abdul Momin**, Kazuya Yamamoto, Munenori Miyamoto, Naoshi Kondo and Tony Grift. Machine vision based soybean quality evaluation, *Computer and Electronics in Agriculture*, Vol. 140, pp. 452-460, 2017.
- 24 **M. A. Momin**, M. T. Rahman, M. S. Sulatana, C. Igathinathane, and A.T.M. Ziauddin. Geometry-based mass grading of mango fruits using image processing, *Information Processing in Agriculture*, Vol. 4, pp. 150–160, 2017.
- 23 Yuesheng Tan, Zewei Miao, **Momin M. Abdul**, Tony E. Grift, and K.C. Ting. Electrical capacitance as a proxy measurement of miscanthus bulk density, and the influence of moisture content and particle size, *Computer and Electronics in Agriculture*, Vol. 134, pp. 102-108, 2017.
- 22 M.A. Alam, C.K. Saha, **M.A. Momin**, M.M. Alam and B.K. Bala. Spatial distribution of temperature and moisture in grain bin and grain bin size effect on STR dryer performance in Bangladesh, *J. Agril. Mach. Bioresour. Eng.* Vol 7(1),pp 1-8, 2016.
- 21 M. Alam, M.A. Haque, T.R. Sarker, and **M. A. Momin**. Present status of farm power and machinery usage in Bangladesh, *J. Agril. Mach. Bioresour. Eng.* Vol 7(1),pp 47-54, 2016.
- 20 M.R. Ali, B. Das, M.H. Islam, **M. A. Momin** and K. Osamu. Solar energy based lighting and ventilation system for rural poultry house in Bangladesh, *J. Agril. Mach. Bioresour. Eng.* Vol 7(1). pp. 22-28, 2016.
- 19 **Md Abdul Momin**. Fluorescence imaging for defect inspection of citrus fruits and identification of fluorescence substances, *J. of the Japanese Society of Agricultural Machinery and Food Engineers*, Vol. 77, No. 6, pp. 393-95, November, 2015.
- 18 M. M. Rahman, **M. A. Momin**, B. C. Nath, M. A. Rahman and M. A. Rabbani, Field performance evaluation of BRRI power chopper machine, *J. of Agricultural Engineering. The inst. of Engineers, Bangladesh* Vol. 41/AE, No. 2, pp. 61-69, December, 2014.

- 17 Md Hamidul Islam, Md Mosharraf Hossain, and **Md Abdul Momin**, Development of briquette from coir dust and rice husk blend: an alternative energy source, *Int. J. of Renewable Energy Development (IJRED)*, Vol. 3, No. 2, pp. 119-123, June, 2014.
- 16 **M. A. Momin**, M. S. Sultana, M. H. Islam, T. Shiigi, N. Kondo, Fluorescent UV imaging system for inspection of defected citrus fruits, *J. of Agricultural Engineering. The institution of Engineers, Bangladesh* Vol. 41/AE, No. 1, pp. 65-70, June, 2014.
- 15 M. Alam, D. Islam, **M. A. Momin**, T. R. Sarker, Present status of drum seeder use in Bangladesh, *J. of Agricultural Engineering. The institution of Engineers, Bangladesh* Vol. 41/AE, No. 1, pp. 23-28, June, 2014.
- 14 **Md. Abdul Momin**, Makoto Kuramoto, Naoshi Kondo, Kyohei Ido, Yuichi Ogawa, Tomoo Shiigi, And Usman Ahmad. Identification of UV-fluorescence components for detecting peel defects of lemon and yuzu using machine vision, *J. of Eng. in Agr. Env. & Food*, Vol. 6, No. 4, pp. 165-171, October, 2013.
- 13 Subo Tian, M. A. Ashraf, N. Kondo, T. Shiigi, and **M. A. Momin**, Optimization of machine vision for tomato grafting robot, *Sensor letters*, Vol. 11(6/7), pp.1190–94, June/July, 2013.
- 12 **Md. Abdul Momin**, Naoshi Kondo, Yuichi Ogawa, Kyohei Ido, And Kazunori Ninomiya, Patterns of fluorescence associated with citrus peel defects, *J. of Eng. in Agr. Env. & Food*, Vol. 6, No. 2, pp. 60-66, April, 2013.
- 11 **Md. Abdul Momin**, Naoshi Kondo, Makoto Kuramoto, Yuichi Ogawa, Kazuya Yamamoto And Tomoo Shiigi, Investigation of excitation wavelength for fluorescence emission of citrus peels based on UV-VIS spectra, *J. of Eng. in Agr. Env. & Food*, Vol. 5, No. 4, pp. 126-132, October, 2012.
- 10 Yuichi Ogawa, Momin Md. Abdul, Makoto Kuramoto, Yasushi Kohno, Tomoo Shiigi, Kazuya Yamamoto, And Naoshi Kondo, Detection of rotten citrus fruit using fluorescent images, *J. Laser Engg.*, Vol. 39, NO. 4 pp. 255-261, 2011.
- 9 M. M. Alam, and **M. A. Momin**. Performance of existing maize shellers in Bangladesh, *Progress. Agric.*, Vol. 20, No. 1 & 2, pp. 207-220, Jan.-Dec., 2009.
- 8 M. M. Alam, **M. A. Momin**, AA Begum and MM Haque. Selection of spike spacing and cylinder speed of closed drum thresher for wheat. *Intl. J. BioRes* 5(3):5-11, 2008.
- 7 S. Sultana, **M.A. Momin** and Abul.Khair. Design and fabrication of a low-cost water lifting device. *Bangladesh J. Prog. Sci. & Tech.* 6(2): 335-340; 2008.
- 6 M. Alam, S. Sarker and **M.A. Momin**. Profitability of rice production using a drum seeder. *J. Bangladesh Agril. Univ.* 5(1):135-144, 2007.
- 5 **M.A. Momin**, M.R.I.Sarker and M.M. Hossain. Field performance of a tractor operated semi-automatic potato planter. *J. Bangladesh Agril. Univ.* 4(2):391-399, 2006.
- 4 M.M.Alam, **M.A. Momin** and S.Sultana. Selection of spike spacing and cylinder speed of closed drum thresher. *J. of Agricultural Engineering. The institution of Engineers, Bangladesh*, Vol. 32/AE, pp. 37-44, 2006.
- 3 M.Alam, **M. A. Momin** and E.Kabir. Energy and cost requirement to produce rice husk briquette using different screw and heating system. *Progress. Agric.*17 (2): 213-220, 2006.
- 2 Ehsanul Kabir and **Md Abdul Momin**. Temperature sensitivity of microstrip patch antenna. *J. Agric. Mach. Bioresour. Eng.* 4 (1&2): 13-16, 2006.
- 1 M.A.Zaman, **M.A.Momin** and M.R. Ali, 2006. Commercial processing of roasted rice (muri) in Bangladesh. *Bangladesh J. Agril. Sci.* 33(2): 167-174, 2006.

Conference papers

- 7 **Momin A**, Grift, T, Baier J. 2024. Measurement of sugarcane lodging extent using machine vision. 2024 ASABE Annual International Meeting 2400775. (doi:10.13031/aim.202400775).
- 6 Saha, C.,**Momin, A**. 2023. BAU-STR dryer for drying maize for underserved community in Bangladesh. American Society of Agricultural and Biological Engineers AIM presentation. <https://elibrary.asabe.org/abstract.asp?aid=54121>
- 5 **Momin Md Abdul**, Sarvio Valente, Tony Grift. 2021. Feasibility study on application of low-cost GPS for precision agriculture, The 79th Japanese Society of Agricultural Machinery (JSAM) annual meeting, Paper Number: 2-17.

- 4 Nan Li, Tony E. Grift, Ting Yuan, Chunlong Zhang, **Md. Abdul Momin**, and Wei Li. 2016. Image processing for crop/weed discrimination in fields with high weed pressure, An ASABE Meeting Presentation, DOI: 10.13031/aim.20162460475, Paper Number: 162460475.
- 3 **Md. Abdul Momin**, Naoshi Kondo,Kazunori Ninomiya. 2011. "Evaluation of the reasons why freshly appearing citrus peel fluorescence during automatic inspection by fluorescent imaging technique". Proc. Of SPIE Vol. 8000 8000C1-6. (*Peer reviewed*)
- 2 **Md. Abdul Momin**, Naoshi Kondo,Tomoo Shiigi. 2011. "Study on excitation and fluorescence spectrums of Japanese citrus to construct machine vision systems for acquiring fluorescent images". Proc. Of SPIE Vol. 8027 80270R1-8. (*Peer reviewed*)
- 1 **Md. Abdul Momin**, Naoshi Kondo, Kazunori Ninomiya. 2010. "Machine vision system for detecting fluorescent area of citrus using fluorescence image," Proc. Of IFAC-PapersOnLine. Vol. 43 Issue 26, pp. 241-244. (*Peer reviewed*)

Posters

- 8 **Momin, A.**, Martins C.G, Valente DSM, Queiroz DM. 2023. "Evaluation of leaf-miner fly attacks on tomato plants using deep neural network," ASABE Annual International Meeting, Omaha, NE, United States. (July 9-12, 2023).
- 7 A Dien, L Anyoke-Bempah, **A Momin**, IR Donis-Gonzalez, K Kornbluth. "Evaluation of the performance of an industrial-scale desiccant-based drying system for agricultural commodities" American Society for Horticultural Science (ASHS) Annual Conference, August 10-13, 2020.
- 6 **M. A. Momin**, M. A. Alam, C. Saha and M. M. Alam, "Drying bin size and paddy variety effects on STR dryer performance" ASABE Annual International Meeting, Orlando, USA, July 17 – 20, 2016.
- 5 **M. A. Momin**, "Machine vision: a new opportunity for advancing quality of agricultural produce in Bangladesh" The First Int. Congress on Postharvest Loss Prevention, Rome, Italy, October 4-7, 2015.
- 4 C. K. Saha, **M. A. Momin**. "Paddy drying technologies for small farmers and traders in Bangladesh" The First Int. Congress on Postharvest Loss Prevention, Rome, **Italy**, October 4-7, 2015.
- 3 **M. A. Momin**, M. T. Rahman, M. S. Sultana, and C. Igathinathane. "Computer vision system for grading mangos in Bangladesh" ASABE Annual Int. Meeting, New Orleans, LA, USA, July 26 – 29, 2015.
- 2 **M. A. Momin**, N. Kondo, T. Shiigi, and M. Yamakawa. 2012. "Fluorescence imaging based machine vision system to detect citrus defects". International Symposium on Mechanical Harvesting & Handling Systems of Fruits and Nuts. CREC, University of Florida, Lake Alfred, FL (USA).
- 1 **M. A. Momin**, M. S. Sultana, & M. H. Islam. 2011. "Present status and future of agricultural mechanization in Bangladesh". Agricultural Technologies and Cross-Cultural Exchange, an event CIGR International Symposium, Tokyo, Japan.

Web/outreach publications: Research news and reports

- 9 "To Maximize Sugarcane Harvesting, Use the Right Blade" published by Phys.org, 10 April 2018, <https://phys.org/news/2018-01-maximize-sugarcane-harvesting-blade.html>
- 8 "University researchers maximize sugarcane harvest with new blade" published by The Daily Illini, January, 2018. <https://dailyillini.com/uncategorized/2018/01/20/university-researchers-maximize-sugarcane-harvest-new-blade/>
- 7 "To maximize sugarcane harvesting, use the right blade" published by ACES College NEWS, University of Illinois, January 17, 2018. <http://news.aces.illinois.edu/news/maximize-sugarcane-harvesting-use-right-blade>
- 6 "Monitoring the quality of soybeans as they are harvested" published by Engineers Australia, October 5, 2017. <https://www.engineersaustralia.org.au/News/monitoring-quality-soybeans-they-are-harvested>
- 5 "New machine evaluates soybean at harvest for quality" published by ACES College NEWS, University of Illinois, October 3, 2017. <https://news.aces.illinois.edu/news/new-machine-evaluates-soybean-harvest-quality>
- 4 "New machine evaluates soybeans at harvest" published by Morning AgClips, October, 2017. <https://www.morningagclips.com/new-machine-evaluates-soybeans-at-harvest/>
- 3 "New method analyzes corn kernel characteristics" published by ACES College NEWS, University of

Illinois, November, 2017. <https://news.aces.illinois.edu/news/new-method-analyzes-corn-kernel-characteristics>

- 2 “Researchers develop breakthrough for analyzing corn kernels at Illinois” published by The Daily Illini, November, 2017. <https://dailyillini.com/news/2017/11/19/researchers-develop-breakthrough-analyzing-corn-kernels-illinois/>

- 1 “Researcher aims to improve post-harvest processing in Bangladesh beginning with mangos” published by ACES College NEWS University of Illinois, December, 2017. <http://news.aces.illinois.edu/news/researcher-aims-improve-post-harvest-processing-bangladesh-beginning-mangos>

Blogs

- 2 “Working with Louisiana sugarcane farmers” published by ACES College NEWS University of Illinois, October, 2017. <https://aces.illinois.edu/blog/working-louisiana-sugarcane-farmers>

- 1 “Biosensing for advancing quality of agricultural produce in Bangladesh” published by ADM Institute, University of Illinois, December, 2015. <http://publish.illinois.edu/phlinstitute/2015/12/22/biosensing-momin/>

Presentations at scholarly meetings/conferences

29. **Momin, A.** “Application of GIS in Agriculture” presented at the Getting Started with GIS for Research workshop organized by CAFE, TN Tech University, September 14, 2024.
28. **Momin, A.** Grift T, Baier J. “Measurement of sugarcane lodging extent using machine vision” ASABE Annual International Meeting, **Anaheim, CA, USA**, July 28 – 31, 2024.
27. Lalita P, **Momin A.** Weed detection in early-stage sugarcane fields using machine learning and low-resolution RGB imagery. Artificial Intelligence in Agriculture Conference, Texas A&M University AgriLife Research, College Station, **TX, USA**, April 15 – 17, 2024.
26. **Momin, A.** Martins Crispi, G. Valente DSM, and Queiroz DM. “Evaluation of leaf-miner fly attacks on tomato plants using deep neural network” ASABE Annual International Meeting, **Omaha, NE, USA**, July 09 – 12, 2023.
25. Rahman, T. and **Momin, M.A.** “Disease detection of tomato (*Solanum lycopersicum*) plant leaf using machine learning algorithms” ASABE Annual International Meeting, **Houston, TX, USA**, July 17 – 20, 2022.
24. **Momin Md Abdul**, Sarvio Valente, Tony Grift. Feasibility study on application of low-cost GPS for precision agriculture, The 79th Japanese Society of Agricultural Machinery (JSAM) annual meeting, Paper Number: 2-17. 14-15 September 2021.
23. A Dien, L Anyoke-Bempah, **A Momin**, IR Donis-Gonzalez, K Kornbluth. Evaluation of the performance of an industrial-scale desiccant-based drying system for agricultural commodities, The 117th American Society for Horticultural Science (ASHS) Annual Conference, August 10-13, 2020.
22. **Momin Md. Abdul**, Constantino Valero, and Irwin Donis-Gonzalez, “Performance evaluation of two commercially available non-invasive NIR produce quality spectrometers” ASABE Annual International Meeting, Boston, **MA, USA**, July 08 – 10, 2019.
21. **Momin Md. Abdul**, and Irwin Donis-Gonzalez, “Energy efficiency of desiccant beads-based systems to dehydrate agricultural produce” ASABE Annual International Meeting, Boston, **MA, USA**, July 08 – 10, 2019.
20. **Momin Md. Abdul**, Tony Grift and Alan Hansen, “Harvesting front analysis for sugarcane yield mapping using GPS” ASABE Annual International Meeting, Detroit, **MI, USA**, July 29 – August 01, 2018.
19. **Momin Md. Abdul**, Tony Grift and Alan Hansen, “Lodged sugarcane assessment using digital image processing” ASABE Annual International Meeting, Detroit, **MI, USA**, July 29 – August 01, 2018.
18. **Momin Md. Abdul**, Paul Wempe, Tony Grift and Alan Hansen, “Impact of base cutter blade design on sugarcane cut quality” ASABE Annual International Meeting, Spokane, **WA, USA**, July 17 – 20, 2017.
17. **Momin Md. Abdul**, Md. Ashraf Alam, Chayan Saha and Md Monjurul Alam, “Drying bin size and paddy variety effects on STR dryer performance” ASABE Annual International Meeting, Orlando, **FL, USA**, July 17 – 20, 2016.

16. **Momin Md. Abdul**, “UV-fluorescence components of lemon and yuzu citrus for detecting peel defects” the SPIRITS workshop, Bali, **Indonesia**, November 17-19, 2015.
15. **Momin Md. Abdul**, “Machine vision: a new opportunity for advancing quality of agricultural produce in Bangladesh” The First International Congress on Postharvest Loss Prevention, Rome, **Italy**, October 4-7, 2015.
14. **Momin Md. Abdul**, M. T. Rahman, M. S. Sultana, and C. Igathinathane. “Computer vision system for grading mangos in Bangladesh” ASABE Annual International Meeting, New Orleans, Louisiana, **USA**, July 26 – 29, 2015.
13. Pothula, Anand K., C. Igathinathane, **Momin, Md. Abdul**, W. Rick, H. Jonathan. “Effect of water temperature on milled industrial beet juice multiple extraction” ASABE Annual International Meeting, New Orleans, Louisiana, **USA**, July 26 – 29, 2015.
12. **Momin Md. Abdul**, C. Igathinathane, and Jiacheng Shen. “Economic analysis of small scale industries for affected woody biomass” Bio-Industry Summit, BioEPIC, NDSU, **USA**, May 28, 2015.
11. Pothula, Anand K., C. Igathinathane, W. Rick and **Momin, Md. Abdul**. “Hot water and thin juice for industrial beets juice extraction” Bio-Industry Summit, BioEPIC, NDSU, **USA**, May 28, 2015.
10. **Momin Md. Abdul**, C. Igathinathane, and Jiacheng Shen. “Economic analysis of flood affected woody biomass utilization” ASABE North Central Intersectional Conference, Fargo, North Dakota, **USA**, April 10 -11, 2015.
9. **Momin Md. Abdul**. “Machine vision system: a new approach for processing agricultural products in Bangladesh”. Workshop on Information Technologies in Sustainable Agriculture for 9 Billion People’s Food Production, Zhejiang University, **China**, March 12-13, 2014.
8. **Momin Md. Abdul**, Naoshi Kondo and Munenori Miyamoto. “Selection of devices and lighting based machine vision system for soybean sorting”. Kansai branch of Japanese Society of Agricultural Machinery (JSAM), No. 128, Tottori University, **Japan**, August 11-12, 2012.
7. **Momin Md. Abdul**, Naoshi Kondo, Tomoo Shiigi, and Momoyo Yamakawa. “Fluorescence imaging based machine vision system to detect citrus defects”. International Symposium on Mechanical Harvesting & Handling Systems of Fruits and Nuts. Citrus Research & Education Center, Univ. of Florida, Lake Alfred, FL, **USA**, April 2-4, 2012.
6. **Momin Md. Abdul**, Naoshi Kondo and Makoto Kuramoto. “Classification of citrus fruits based on fluorescence intensity profiles”. Kansai branch of Japanese Society of Agricultural Machinery (JSAM), No. 126, Wakayama, **Japan**, September 15-16, 2011.
5. **Momin Md. Abdul**, Sabrina Sultana, and Hamidul Islam. 2011. “Present status and future of agricultural mechanization in Bangladesh”. Agricultural Technologies & Cross-Cultural Exchange, an event CIGR International Symposium, **Japan**, September 19-23 2011.
4. **Momin Md. Abdul**, Naoshi Kondo,Ninomiya. 2011. “Evaluation of the reasons why freshly appearing citrus peel fluorescence during automatic inspection by fluorescent imaging technique”. QCAV 2011: International Conference, **France**, June 28-30, 2011.
3. **Momin Md. Abdul**, Naoshi Kondo, Shiigi. “Study on excitation and fluorescence spectrums of Japanese citrus to construct machine vision systems for acquiring fluorescent images”. DSS 2011: SPIE Defense and Security Sensing International Conference, Orlando, FL, **USA**, April 25-29, 2011.
2. **Momin Md. Abdul**, Naoshi Kondo, Ninomiya. “Machine vision system for detecting fluorescent area of citrus using fluorescence image,” AGRICONTROL-2010: The 3rd IFAC Int. Conference, **Japan**, December 6-8, 2010.
1. **Momin Md. Abdul**, Naoshi Kondo,..... “Study on excitation and fluorescence spectrums of various citrus fruits”. Kansai branch of Japanese Society of Agricultural Machinery (JSAM), No. 124, Okayama University, **Japan**, August 30-31, 2010.

Professional/scholarly activities

Professional Services

- Member of various committees (e.g., doctoral advisory, facilities & technology, student financial aid, campus space allocation and utilization, director search) at Tennessee Tech University.
- Editorial Review Board Member, Journal of Tropical Agricultural Engineering and Biosystems, (September 1, 2023 - Present).

- Guest Editors, *Frontiers in Agronomy Journal*. (September 1, 2023 - December 31, 2024).
- Member, USDA-NIFA peer review panel, a competitive grant review process (e.g., A1521 Agricultural Engineering: 2022 and 2023, SBIR 8.13 Phase-I: 2022 and 2023)

Professional Memberships

- Fellow (M/22314), Inst. of Engineers' Bangladesh
- Member, American Society of Agricultural and Biological Engineers (ASABE)
- Member, The Japanese Society of Agricultural Machinery (JSAM)

Social media platforms

- [Google Scholar](#) [ResearchGate](#) [LinkedIn](#)

Awards and recognitions

- **JSAM Young Researcher's Academic Encouragement Award (15 September, 2015):** Granted by Japanese Society of Agricultural Machinery (JSAM), for the achievement of research on “Fluorescence imaging for defect inspection of citrus fruits and identification of fluorescence substances”.
- **Elsevier Reviewer Recognition Award (February, 2015):** Awarded by Editors of *Computers and Electronics in Agriculture*, Elsevier for the outstanding contribution in reviewing.
- **Young Researcher's Academic Encouragement Award (01 July, 2013):** Granted by Kansai Branch, Japanese Society of Agricultural Machinery (JSAM), for the outstanding research entitled “Identification of UV-fluorescence components for detecting peel defects of lemon and yuzu using machine vision”.
- **University Gold Medal Award (08 March, 2011):** Awarded the University Gold Medal for securing 75.68% marks in B.Sc. Agri. Engg. Examination of the year 2002.
- **Monbukagakusho Scholarship (01 October, 2009 to 31 March, 2013):** Provided by Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan for pursuing Ph.D. study in Kyoto University.
- **Md. Nurul Hossain Meritorious Award (25 June, 2009):** Awarded “Md. Nurul Hossain Gold Medal” for meritorious performance in obtaining Graduation Degree among all Faculties in year 2002.
- **Ramapati Nath Memorial Award (25 June, 2009):** Awarded Cash Money for securing highest cumulative marks in Part I, II and III Final Examinations in the faculty of Agricultural Engineering and Technology in the year 2001.
- **Prime Minister Gold Medal Award (30 August, 2005):** Awarded Prime Minister Gold Medal Award for excellent result in B.Sc. Agri. Engg. of the faculty of Agricultural Engineering and Technology.

Journal reviewers

<u>Journal</u>	<u>Publisher</u>	<u>No. paper reviewed</u>
• Engineering in Ag. Env. & Food	Elsevier	2
• Biosystems Engineering	Elsevier	5
• Applied Engineering in Agriculture	ASABE	4
• Bangladesh Agricultural University	BAU	5
• Transactions of ASABE	ASABE	2
• Computer & Electronics in Agriculture	Elsevier	6
• Agricultural Engineering	IEB, Bangladesh	3

Training courses attended

- Purdue prospective faculty workshop from February 26-28, 2017, organized by Purdue University.
- Scientific Report Writing from May 20-25, 2006, organized by Bangladesh Agricultural University
- Project cycle management from April 30- May 04, 2006, organized by Bangladesh Agricultural University
- Teaching methods and techniques from January 22- February 04, 2006, organized by Bangladesh Agricultural University

Other professional activities

- **Session Chair**, 2024 Artificial Intelligence in Agriculture Conference, Texas A&M University, College Station, TX.
- **Session Chair**, 2015 ASABE Intersectional Meeting Sponsored by ASABE, Fargo, ND (April 10–11, 2015).
- **Organizer**, Biweekly Lab Group Meetings and Monthly Seminars, Biosensing Engineering Laboratory, Kyoto University, Japan (January 2010 - December 2012).
- **Student representative**, Junior and Senior Class, BAU, 2002–2004.
- **House tutor**, Najmul Ahsan Student Residential Hall, BAU, 2007–2008.
- **National consultant**, FAO, Bangladesh (November 10–25, 2013) for economic and financial analyses of buried pipe irrigation systems.
- **Short-term consultant**, Winrock International, Bangladesh (September 4, 2006 – March 31, 2007) for a feasibility study of existing maize shellers.
- **Junior consultant**, South Asia Enterprise Development Facility (SEDF), Bangladesh (December 1, 2004 – January 31, 2005) for the identification of agri-machinery SMEs, service providers, and sub-sector supply and value chain analysis.

Academic referees

Professor Dr. Naoshi Kondo

Division of Environmental Science & Technology
Graduate School of Agriculture
Kyoto University
Kitashirakawa-Oiwakecho, Sakyo-ku, Kyoto
606-8502, Japan
Phone: +81-75-753-6170, Fax: +81-75-753-6171
E-mail: kondo.naoshi.6w@kyoto-u.ac.jp

Professor Dr. Tony Grift

Department of Agricultural and Biological
Engineering
University of Illinois at Urbana-Champaign
1304 W. Pennsylvania Avenue, Urbana
IL, 61801
Phone: (217) 333-2854
Email: grift@illinois.edu