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## EDUCATION

Degree and Institution name	Duration
PhD in Agricultural Science, Kyoto University	October, 2018 - September, 2021
MS in Agricultural Science, Kyoto University	October, 2016 - September, 2018
B.Sc. in Agricultural Engineering, Bangladesh Agricultural University	March, 2008 – November, 2012
Higher Secondary Certificate, Govt. Science College	August, 2005 – May, 2007
Secondary School Certificate, KCSM High School	January, 2003 – March, 2005

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## THESIS

Degree	Title	Supervisor
PhD	Effect of seepage on incipient motion and rheology of cohesionless soil	Akira Murakami and Masayuki Fujihara
MS	Effect of seepage flow on the critical tractive force of cohesionless soil bed subjected to surface flow	Akira Murakami
Undergrade	Performance evaluation of twin nozzle rotating head sprinkler	Md. Nazrul Islam

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## FIELD OF SPECIALIZATION & SKILL

- Sediment Dynamics, Computational Fluid Dynamics, Irrigation Engineering, Water Resources Management, Seepage and Erosion Modelling, Soil Rheology, FT4

Powder Rheometer, 3-D Printed Particulate Mechanics, Particle Image Velocimetry (PIV)

## RESEARCH EXPERIENCE

Agricultural Facilities Engg. Lab., Graduate School of Agriculture, Kyoto University, Japan      October, 2018 - September, 2021

*Graduate Researcher (PhD)*

- Particle Image Velocimetry (PIV)
- Sediment dynamics
- Turbulence, LBM-DEM
- Low confining stress using FT4 powder rheometer

Agricultural Facilities Engg. Lab., Graduate School of Agriculture, Kyoto University, Japan      October, 2016 - September, 2018

*Graduate Researcher (MS)*

- Particle Image Velocimetry (PIV)
- Erosion and Sediment transport

Rural Development Academy (RDA), Bogura, Bangladesh      July, 2013 - present

*Faculty Member*

- Research, Action Research and provide Training in the field of irrigation and water resources management

## COMPUTER AND PROGRAMMING SKILL

- Mastery of Microsoft Office packages
- Auto CAD, Fusion 360, HTML
- C++, Fortran, MATLAB, Python, CUDA C/C++

## AWARDS/SCHOLARSHIPS

- MEXT (Monbukagakusho) Scholarship for Doctoral study, Japanese Ministry of Education, Culture, Sports, Science and Technology, October, 2018 – September, 2021.

- MEXT (Monbukagakusho) Scholarship for Master's study, Japanese Ministry of Education, Culture, Sports, Science and Technology, October, 2016 – September, 2018.
- AARDO Fellowship for participating training courses at the Egyptian International Centre for Agriculture (EICA), Egypt, January – April, 2016.
- Board Scholarship (General), Secondary School Certificate (S.S.C.) Examination, Board of Intermediate and Secondary Education, Dhaka, Bangladesh, 2007.
- Junior Scholarship (General), KCSM High School, Kishoregonj, Bangladesh, 2003-2005.

#### IN COUNTRY TRAINING

Name of training	Duration	Place/Country	Year
Use of Farm Machinery and Efficient Irrigation Management	5 Days	BARC, Dhaka	2016
Skill Development Training on Food Processing Techniques	3 Days	RDA, Bogura	2016
Mainstreaming Environment, Climate Change and Disaster Risk Management for Development Planning	3 Days	NAPD, Dhaka	2015
45 <sup>th</sup> Special Foundation Training Course	2 Months	RDA, Bogura	2013

#### FOREIGN TRAINING

Name of training	Duration	Place/Country	Year
56 <sup>th</sup> Annual Conference of the Japanese Geotechnical Society	3 Days	Japan	2021
16 <sup>th</sup> Asian Regional Conference on Soil Mechanics and Geotechnical Engineering	5 Days	Taiwan	2019
53 <sup>rd</sup> Annual Conference of the Japanese Geotechnical Society	3 Days	Japan	2018
Food Processing Technology	2.5 Months	Egypt	2016

## PUBLICATIONS

### *International and National Journals*

1. **Jewel, A.**, Fujisawa, K., Murakami, A., Evaluation of incipient motion of sand particles by different indirect methods in erosion function apparatus, *Water*, 13, 1118, 2021. (doi: 10.3390/w13081118)
2. Kitao, T., Fukumoto, Y., Fujisawa, K., **Jewel, A.**, Murakami, A., Validation of LBM simulation of saturated seepage flow through 3D-printed homogeneous porous medium for fluid-particle coupled analysis, *Acta Geotech.*, 2021. (doi.org/10.1007/s11440-021-01210-z)
3. **Jewel, A.**, Fujisawa, K., Murakami, A., Effect of seepage flow on incipient motion of sand particles in a bed subjected to surface flow, *J. Hydrol.*, 579, 2019. (doi: 10.1016/j.jhydrol.2019.124178)
4. Kader, M.A., Khan, F.H., Tulip, S.S., Mridha, M.A.H., and **Jewel, A.**, Applicability of plastic mulch and conservation strip tillage for potato production in Bangladesh, *Sains Tanah Journal of Soil Science and Agroclimatology*, 18(2): 115-125, 2021. (doi: 10.20961/stjssa.v18i2.43559)
5. **Jewel, A.**, Agricultural mechanization in Bangladesh: higher education and research institutions' perspectives, *African-Asian Journal of Rural Development*, Vol. 52, No. 2, pp. 7-27, 2019.
6. Kader, M.A., Singha, A., Begum, M. A., **Jewel, A.**, Ferdous, H. K., and Nazrul, I. K., Mulching as water-saving technique in dryland agriculture: review article, *Bulletin of the National Research Centre*, 43, 148, Oct 2019. (doi:10.1186/s42269-019-0186-7)
7. Islam, Monirul, **Jewel, A.** and Mridha, M.A.H., Quality and Labeling Standards of Processed Food Products, *International Journal of Business Social Science Research* 4(2): 89-94, 2016.
8. Mohiuddin, M., **Jewel, A.**, Islam, Monirul, and Nessa, Fakhrun, RDA-credit and women's empowerment at Boraidaha village under Sherpur upazilla of Bogra district, *Bangladesh Research Publications Journal*, Vol. 10, Issue 4, PP. 304-308, 2015.
9. Nessa, Fakhrun and **Jewel, A.**, Analysis of soil nutrient and heavy metal concentration in agricultural land of zirani industrial area, Savar, Dhaka, *International Journal of Innovation and Scientific Research*, vol. 10, no. 1, pp. 90-98, 2014.
10. **Jewel, A.** and Islam, M.N., Performance evaluation of twin nozzle rotating head sprinkler, *Bangladesh Rural Development Studies*, vol. XVII, no. 1, pp. 101-108, 2014.

### *International and National Conference Proceedings*

1. **Jewel, A.**, Fujisawa, K., Murakami, A., Effect of injection on bed shear stress in erosion function apparatus. *Proc. of the 56<sup>th</sup> Annual Conference of the Japanese Geotechnical Society* (in zoom platform online), Japan, July, 2021.
2. **Jewel, A.**, Fujisawa, K., Fukumoto, Y., Murakami, A., Numerical investigation of seepage force acting on interfacial bed particles by DEM-LBM. **In book: Challenges and Innovations in Geomechanics**, IACMAG 2021, LNCE 126, pp. 317-325, 2021. (doi: 10.1007/978-3-030-64518-2\_38)
3. **Jewel, A.**, Fujisawa, K., Murakami, A., Effect of seepage flow on critical tractive force of cohesionless soil bed subjected to surface flow. *Proc. of the 16<sup>th</sup> Asian Regional Conference on Soil Mechanics and Geotechnical Engineering*, Taipei, Taiwan, pp. 637- 642, October, 14-18, 2019.
4. **Jewel, A.**, Fujisawa, K., Murakami, A., Effect of upward seepage flow on critical tractive force of cohesionless soil material subjected to surface flow. *Proc. of the 53<sup>rd</sup> Annual Conference of the Japanese Geotechnical Society*, Takamatsu, Kagawa, Japan, July, 2018.

### RESEARCH SUPERVISION EXPERIENCE

- Research guidance to Undergraduate and Masters students of Agricultural Facilities Engg. Lab., Kyoto University, Japan; September, 2018 –September, 2021

### PROFESSIONAL MEMBERSHIPS

- Member, Institution of Engineers Bangladesh (IEB)
- Member, Japanese Geotechnical Society (JGS)
- Member, Engineers Australia (EA)

### REVIEWED PEER-REVIEW JOURNALS

- ActaGeophysica

## REFEREES

Akira Murakami

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