



Dr. Md. Rokonzaman

Professor

Research Area Geotechnical Engineering

Biography

Completing the B.Sc. degree in Civil Engineering in 2000, I joined the Department of Civil Engineering, Khulna University of Engineering & Technology (KUET), a top-tier public university in Bangladesh, at the teaching position in the same year. After four years of continuous teaching, I went to Japan getting the Japan Government Scholarship for higher studies at Mie University and there, completed the Masters and Ph.D. courses in 2007 and 2010, respectively. In 2010, I came back to my university and continued the teaching profession. However, the primary research interest is the understanding of geotechnical problems by the study of failure mechanisms through the physical and numerical modeling. Main research interests presently concentrate on the constitutive modeling and FEM simulations of elasto-visco (creep, relaxation, and strain rate effects)-cyclic-plastic behavior of soils. Other works also include model tests and FEM simulations related to soil-structure interaction phenomena in earthquake fault, excavation, ground improvement problems. In addition, the application of Artificial Intelligences (GAs and ANNs) in the geotechnical problems is also another research interest. Also, I am involved in many mega projects (e.g. Padma Multipurpose Bridge, Khulna-Mongla Port Railway Line, Khulna Water Supply Project of WASA) as a geotechnical expert, and I am playing the vital role as a technical member in many feasibility study and design projects of Port, Airport and other Civil Infrastructures.

Education

Doctor of Philosophy

Mie University, Japan (2007-2010)

Master of Science

Mie University, Japan (2005-2007)

B.Sc. in Civil Engineering

Khulna University of Engineering & Technology, Bangladesh (1995-2000)

Service Records

- **Professor**

Department/Section: Department of Civil Engineering,

Khulna University of Engineering & Technology From 01-01-1970 to 01-01-1970

Responsibility: i, § Conducted various civil engineering courses of under/post-graduate program through lectures, tutorials, demonstrations, laboratory works as well as field works. i, § Advised students on course and academic matters and career decisions. i, § Served on faculty committees dealing with such matters as curriculum planning and degree requirements. i, § Worked as a question setter, examiner, Scrutinizer, tabulator of several Civil engineering subjects. Supervised under and post graduate theses and research works.

- **Associate Professor**

Department/Section: Department of Civil Engineering,

Khulna University of Engineering & Technology From 01-01-1970 to 01-01-1970

Responsibility: i, § Conducted various civil engineering courses of under/post-graduate program through lectures, tutorials, demonstrations, laboratory works as well as field works. i, § Advised students on course and academic matters and career decisions. i, § Served on faculty committees dealing with such matters as curriculum planning and degree requirements. i, § Worked as a question setter, examiner, Scrutinizer, tabulator of several Civil engineering subjects. Supervised under and post graduate theses and research works.

- **Assistant Professor**

Department/Section: Department of Civil Engineering,

Khulna University of Engineering & Technology From 01-01-1970 to 01-01-1970

Responsibility: i, § Conducted various civil engineering courses of undergraduate program through lectures, tutorials, demonstrations, laboratory works as well as field works. i, § Advised students on course and academic matters and career decisions. i, § Served on faculty committees dealing with such matters as curriculum planning and degree requirements. i, § Worked as a question setter, examiner, Scrutinizer, tabulator of several Civil engineering subjects. Supervised undergraduate theses and research works.

- **Lecturer**

Department/Section: Department of Civil Engineering,

Khulna University of Engineering & Technology From 01-01-1970 to 01-01-1970

Responsibility: i, § Conducted various civil engineering courses of undergraduate program through lectures, tutorials, demonstrations, laboratory works as well as field works. i, § Advised students on course and academic matters and career decisions.

Research Interest

Geotechnical Engineering

a) Modeling of soils: elasto-visco (creep, relaxation, rate effect)-cyclic-plastic behavior of soils. b) FEM simulations of geotechnical problems: interaction of earthquake fault rupture-sand deposit-structure, soil-structure interaction, seepage, excavation, anchor foundations, etc, in relation to progressive failure, scale effect and parametric study. c) Soil stabilization (RAPs, Gravel Column, Admixtures) d) Genetic Algorithms in optimizations and Artificial Neural Network in predictions of geotechnical problems. e) Cement based composites.

Publication

Books

1. Rokonzaman, R., M., M. and al., e. (2018) , **Proc. of the 4th International Conference on Civil Engineering for Sustainable**

Development, Khulna, Bangladesh ,CE Dept., KUET

2. Rokonzaman,R. ,M.,M. and al.,e. (2016) , **Proc. of the 3rd International Conference on Civil Engineering for Sustainable Development, Khulna, Bangladesh** ,CE Dept., KUET

3. Rokonzaman,R. and al.,M. e. (2014) , **Proc. of the 2nd International Conference on Civil Engineering for Sustainable Development, Khulna, Bangladesh** ,CE Dept., KUET

Journals

11. (2020) , " Investigation of random inclusion of bamboo fiber on ordinary soil and its effect CBR value," **International Journal of Geo-engineering**, Springer, vol9, no.10
10. Islam,S. , M.,M. , S.,G. , M.R.,T. M. , M.,R. and T.,S. (2020) , " Limit load of strip anchors in uniform cohesive-frictional soil," **Ocean Engineering**, Elsevier, vol190
9. (2010) , " Experimental validation of a numerical model for dip-slip normal fault rupture propagation through sand deposits," **Journal of the Japanese Society of Irrigation, Drainage and Rural Engineering (JJSIDRE)**, JStage, vol265, pp.9-16
8. Riyad,R. , A.S.M.,A. , M.,R. and T.,S. (2020) , " Effect of using different approximation models to the exact Mohr-Coulomb material model in the FE simulation of Anchor Foundations in sand," **International Journal of Geo-engineering**, Springer, vol11
7. Riyad,R. , A.S.M.,A. , M.,R. and T.,S. (2020) , " Progressive failure and scale effect of anchor foundations in sand," **Ocean Engineering**, Elsevier, vol195
6. (2009) , " Experimental validation of a numerical model: reverse fault rupture propagation through sand," **Journal of Geotechnical and Geoenvironmental Engineering**, JSCE, vol65, no.1, pp.151-161
5. Rokonzaman,R. ,Sakai,M. a. and T.,T. (2010) , " Calibration of the parameters for a hardening-softening constitutive model using genetic algorithms," **Computers and Geotechnics**, Elsevier, vol37, no.4, pp.573-579
4. Rokonzaman,R. ,Sakai,M. a. and T.,T. (2012) , " Model tests and 3D FEM simulations of uplift capacity of shallow rectangular anchor foundations," **International Journal of Geomechanics**, ASCE, vol12, no.2, pp.105-112
3. Rokonzaman,R. ,Sakai,M. a. and T.,T. (2012) , " Evaluation of shape effects for rectangular anchors in dense sand: model tests & FEM simulations," **International Journal of Geomechanics**, ASCE, vol12, no.2, pp.176-181
2. Rokonzaman,R. , M.,M. , Sakai,S. , T.,T. and Nahas,a. E. (2015) , " Experimental validation of a numerical model for the interaction of dip-slip fault rupture, sand deposits and raft foundation," **International Journal of Geotechnical Engineering**, J. Ross Publishing, vol9, no.3
1. Islam,S. , M.,M. , Rokonzaman,R. , Sakai,M. a. and T.,T. (2017) , " Shape effect of square and circular footing under vertical loading: experimental and numerical studies," **International Journal of Geomechanics**, ASCE, vol17, no.9, pp.1-9

Conference

13. Sakai,S. ,Rokonzaman,T. a. and M.,M. (November, 2011) , "Progressive failure of shallow anchor foundation in dense sand evaluated by 3D FE analysis and model test," **Proc. of 1st International Conference on Geotechnique, Construction Materials and Environment (GeoMat 2011)** , pp.23-30
12. Rokonzaman,R. , M.,M. , Nahas,E. , A.,A. , Sakai,a. and T.,T. (March, 2012) , "Finite element simulation of the normal fault ruptures, sand deposit and raft foundation interaction," **Proc. of the 1st International Conference on Civil Engineering for Sustainable Development** , pp.Printed in
11. Rokonzaman,R. ,Sakai,M. a. and T.,T. (March, 2012) , "3D finite element analysis to evaluate the shape effect of rectangular anchor foundation in dense sand," **Proc. of the 1st International Conference on Civil Engineering for Sustainable Development** , pp.Printed in
10. M.Z.,H. M. ,M.,R. and S.,I. (Aug.23-24, 2005) , "Flexural behavior of cement composites panels reinforced with different types of meshes," **roc. of 30th International Conference on Our World in Concrete and Structures** , pp.365-372
9. M.Z.,H. M. , S.,I. , N.,B. and M.,a. R. (August 22-24, 2005) , "Strength and water permeability of recycled aggregate concrete," **Proc. of the 3rd Int. Conf. on Construction Materials** , pp.Printed in
8. M.Z.,H. M. ,M.,R. and S.,I. (Aug.23-24, 2005) , "Crack stress of geogrid reinforced cement composites under thawing/wetting cycles," **Proc. of 30th International Conference on Our World in Concrete and Structures** , pp.357-364
7. (Feb. 6-8, 2006) , "Durability test of ferrocement elements in cyclic heating condition for observation of crack-stress variation," **Proc. of the Int. Conf. on Ferrocement and Laminated Composites** , pp.473-484
6. M.,R. , M.Z.,H. M. , T.,K. and Z.,G. (May, 2006) , "Weight minimization of ferrocement-laminated plate using genetic algorithm," **Proc. of 8th International Conference on Steel, Space & Composite Structures** , pp.511-517
5. M.,R. , M.Z.,H. M. , T.,K. and Z.,G. (May, 2006) , "Optimization of laminate stacking sequence for buckling load of thin-walled laminated composite beam using genetic algorithm and finite element analysis," **Proc. of 8th International Conference on Steel, Space & Composite Structures** , pp.519-526
4. (July, 2007) , "Numerical modeling of the dip slip fault rupture propagation through sand deposit," **Proc. of 42nd symposium** , Geotechnical Society of Japan, pp.421-422
3. (July, 2008) , "Optimization of a hardening-softening constitutive model's parameters using genetic algorithms," **Proc. of 43rd symposium conducted** , Geotechnical Society of Japan, pp.Printed in
2. (August, 2009) , "Interaction between fault rupture and rigid strong raft: centrifuge and numerical modeling," **Proc. of 44th symposium** , Geotechnical Society of Japan, pp.307-308
1. Rokonzaman,R. , M.,M. , Sakai,S. , T.,T. , Nahas,a. E. and A.,A. (May, 2009) , "Validation of a numerical model for the fault-rupture propagation through sand deposit," **Proc. of International Symposium on Prediction and Simulation Methods for Geohazard Mitigation (IS-KYOTO 2009)** , pp.Printed in