

Curriculum vitae

BINU SHARMA



Personal data

Name: Binu Sharma
Born: June 15, 1962 in Shillong, Meghalaya , India
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Education

2000 PhD , Guwahati University, Assam, India
1994 Master of Engineering (ME), University of Roorkee, Roorkee, India
1986 Bachelor of Engineering (Civil Engineering) Assam Engineering
College, Gauhati University.

Employment record

Since
August 2005 Professor, Department of Civil Engineering, Assam Engineering College
1995– 2005 Assistant Professor, Department of Civil Engineering, Assam
Engineering College
1987 – 1995 Lecturer, Department of Civil Engineering, Assam Engineering College

Award/Prize/Certificate

1. Have been awarded the University Medal of Roorkee University for Standing first class first in M.E. geotechnical engineering.
2. Have received the **Dinesh Mohan Biannual Award** for best paper in 'Pile Foundation' for the year 2011 - 2012 awarded by the Indian Geotechnical Society.
3. Have received the **IGS- Geotech Biannual Award** for best paper in 'Innovation in Field Exploration' for the year 2012 - 2013 awarded by the Indian Geotechnical Society.

Other positions held

- 1) Vice Chairman of Indian Geotechnical Society, Guwahati Chapter N.E.
- 2) Chairman of Indian Geotechnical Society, Guwahati Chapter N .E.

Membership in Professional Associations:

Life Member – Indian Geotechnical Society (IGS)
Life Member – Indian Society for Technical Education (ISTE)
Life member – Indian Road Congress

Scientific activities

1. Coordinated a project on Soil Liquefaction study sponsored by the Department of Science and Technology, Govt. of India
2. Determined Shear Wave Velocity through N- value of Guwahati city and developed GIS based map for Shear Wave Velocity of Guwahati city.
3. Studied Soil Liquefaction Potential of Guwahati city through N- value of Guwahati city and developed GIS based map for Liquefaction Potential of Guwahati city.

Teaching and guidance

Since 2012	Guiding 5 PhD students for their theses/dissertations on topics related to Expansive soils, micropiles and compaction characteristics and soil liquefaction. One student awarded PhD under my supervision.
2013 and 2014	Organised two Student level conference on Geotechnical Engineering as Chairman of Indian Geotechnical Society, Guwahati Chapter N.E.
Since 1994	Guided around 55 Master degree thesis in Engineering
Since 1987	Regularly teaching under graduate and post graduate courses on Geotechnical Engineering, Foundation Engineering.

Research interests

Main area of research is Analysis and prediction of soil behaviour. Have developed many correlations of engineering properties of soils.

Other areas of research are :-

Soil Liquefaction, Micropiles – soil structure interaction analysis, Expansive soils.

Recognized innovative work.

Correlations have been developed between consistency limits and undrained shear strength of soil. Findings and a correlation developed between undrained shear strength and consistency limits which was published in the ASCE journal of Geotechnical and geoenvironmental engineering got incorporated in the text book by James. K. Mitchell “Fundamentals of soil behaviour”.

Reviewer of International Journals

Have reviewed many journal papers in International Journal of Geology, International Journal of Geomechanics etc.

International Conferences attended

- 1) Have attended and presented a paper in Geo- Congress 2014 held in Atlanta, Georgia, U.S.A.
- 2) Have attended and presented a paper in the Asian Regional conference (2015) in Soil Mechanics and Foundation Engineering held in Fukuoka, Japan.
- 3) Have Chaired a Technical Session in the Asian Regional conference (2015) in Soil Mechanics and Foundation Engineering held in Fukuoka, Japan.
- 4) Have attended and presented a paper in GeoMEast 2017 held in Sharm- EI – Sheikh, Egypt.
- 5) Have attended and presented two papers in GeoChina 18 held in Hangzhou, China
- 6) Have delivered an Invited Talk in I SHOU University, Khaosiung, Taiwan

Publications

JOURNALS

- 1) Sharma, B and Bora, P.K.(2003) “Plastic Limit, Liquid Limit and Undrained Shear Strength of Soils – Reappraisal”. **Journal of Geotechnical and Geoenvironmental Engineering. American Society of Civil Engineers**, August 2003 Volume 129, Number 8.
- 2) Sharma, B and Bora, P.K.(2009) “A study on correlation between compaction characteristics and plastic limit of fined grained soils. **Highway Research Bulletin. Indian Roads Congress**. June 2003, Volume 68.
- 3) Sharma, B and Bora, P.K.(2009) “Determination of Plastic Limit of Soils by Cone Penetration Method”. **Indian Geotechnical Journal**, October 2004, Volume 34, No. 4
- 4) Sharma, B and Bora, P.K.(2009) “Determination of Coefficient of Consolidation from Index properties of soils.” **Indian Geotechnical Journal**, 39(4) October 2009, 424- 435.

- 5) Sharma, B (2011). "A model study of Micropiles subjected to Lateral Loading and Oblique loading conditions". **Indian Geotechnical Journal**, Vol. 41, No.4. :196-205.
- 6) Sharma, B (2012) "Discussion of "Re-examination of Undrained Strength at Atterberg Limits Water Contents" By H. B. Nagaraj * A. Sridharan* H.M. Mallikarjuna". **International Journal of Geotechnical and Geological Eng, Springer**. Vol 30, issue 4, pp1035-1036.
- 7) Sharma, B and Hazarika, P (2013) "Assessment of Liquefaction Potential of Guwahati city. A case study". **International Journal of Geotechnical and Geological Eng, Springer**, Vol.31, issue5, pp1437-1452.
- 8) Sharma, B and Bora P.K.(2014). "A Study on Correlation Between Liquid Limit, Plastic Limit and Consolidation Properties of Soils" **Indian Geotech Journal**. DOI 10.1007/s40098-014-0128-0
- 9) Sharma, B and Buragohain, P (2013). "Behaviour of Micropile Groups under Oblique Pull Out Loads in sand". **Indian Geotechnical Journal**, DOI 10, 1007/s40.098-013-0091-1
- 10) Sharma, B. and Rahman, S.K. (2016) Use of GIS Based Maps for Preliminary Assessment of Subsoil of Guwahati City. **Journal of Geoscience and Environment Protection**, 4, 106-116. <http://dx.doi.org/10.4236/gep.2016.45011>
- 11) Das, N; Sharma,B, Singh, S (2013): "Comparison In Undrained Shear Strength Between Low And High Liquid Limit Soils". **International Journal of Engineering Research & Technology** .Vol. 2 Issue 1, January- 2013 ISSN: 2278-0181.
- 12) Gogoi ,N; Bordoloi, S and Sharma,B (2014) " A Model Study of Micropile Group Efficiency under Axial Loading Condition" **International Journal of Civil Engineering Research**. ISSN 2278-3652 Volume 5, Number 4 (2014), pp. 323-332.
- 13) Sharma, B and Chetia,M (2015); "Deterministic and probabilistic liquefaction potential evaluation of Guwahati city". **Proceedings of Japanese Geotechnical Society Special publication**. Vol.2 (2015) No.22 P.823-828.
- 14) Sharma,B and Bora, P.K.(2003) Discussion of "Plastic Limit, Liquid Limit, and Undrained Shear Strength of Soil—Reappraisal" **Journal of Geotechnical and Geoenvironmental Engineering. American Society Of Civil Engineers**, August 2003, Vol. 129, No. 8, pp. 774–777.DOI: 10.1061/sASCEd1090-0241s2003d129:8s774d
- 15) Sharma,B; Sridharan,A and Talukdar, P (2016). " Static Method to determine Compaction Characteristics of Soils". **Geotechnical Testing Journal, American Society of Testing Materials (ASTM)**, Vol.39, No.6. pp1048 – 1055.

- 16) Sharma, B; Siddique, A; Medhi, B. (2017) Assessment of liquefaction potential of Guwahati city by probabilistic approaches. **International Journal of Innovative Infrastructure Solutions, Springer** (2018) 3:11, <https://doi.org/10.1007/s41062-017-0117-0>.
- 17) Sharma B., Begum N. (2017) Probabilistic Assessment of Liquefaction Potential of Guwahati City. In: Abdoun T., Elfass S. (eds) Soil Dynamics and Soil-Structure Interaction for Resilient Infrastructure. GeoMEast 2017. Sustainable Civil Infrastructures. Springer, Cham doi.org/10.1007/978-3-319-63543-9_4. pp 35-45.
- 18) Sharma, B. (2018). Coefficient of consolidation: Simplified One Point Method. International Journal of Innovations in Engineering and Technology (IJET); Volume 10 Issue 3. <http://dx.doi.org/10.21172/ijiet.103.09>. Pp 57-65.
- 19) Sharma, B And Sridharan, A (2018). “Liquid and plastic limits of clays by cone method”. **International Journal of Geo- Engineering. Springer.** (2018) 9:22 <https://doi.org/10.1186/s40703-018-0092-0>.
- 20) Hussain, H, Sharma, B and Rahman, T. (2019). Micropile group behaviour subjected to lateral loading. **International Journal of Innovative Infrastructure Solutions, Springer,** 4:22 <https://doi.org/10.1007/s41062-019-0206-3>.
- 21) Sharma, B and Hussain, Z, (2019). Behaviour of Batter Micropiles Subjected to Vertical and Lateral Loading Conditions. **Journal of Geoscience and Environment Protection,** 2019, 7, 206-220.
- 22) Siddique, A.F. and Sharma, B. (2020) Liquefaction Potential Assessment of Guwahati City Using One Dimensional Ground Response Analysis. **Journal of Geoscience and Environment Protection** Vol.8 No.5, pp 176-194. <https://doi.org/10.4236/gep.2020.85011>
- 23) Sharma, B and Rahman, S. (2020). “Spatial Variability of subsoil properties of Guwahati city using GIS based Maps” Book Chapter, Recent Developments in Engineering Research, Book Publisher International. DOI: 10.9734/bpi/rder/v5
- 24) Rahman, S., Sharma, B and Sridharan, A. (2021) Free Swelling Behaviour of Bentonite-Sand Mixtures in Presence of Pore Fluids of Different Dielectric Constants. International Journal of Geological and Geotechnical Engineering. 2021; 7(1): 26–38p.
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- 25) Sharma, B and Buragohain, P (2008) “A Model study of Micropiles subjected to Oblique loading conditions” Proceedings of Indian Geotechnical Conference, Bangalore, December 19-21, 2008.

- 26) Sharma,B (2009) “A Model study of Micropiles subjected to Lateral loading conditions”. Proceedings of Indian Geotechnical Conference, Guntur December 18-20, 2009.
- 27) Buragohain, P and Sharma, B (2009) “A model study on micropiles under different loading conditions”. Student Symposium in Research in Civil Engineering, March 5-6, , IIT Chennai.
- 28) Tamuli, S, J. Pathak, B. D. Saikia and B. Sharma (2010). “A comparative study of response spectra of recorded events in the Northeast India” . 14 Symposium on earthquake Engineering, Roorkee, paper No. 179
- 29) Sharma,B (2011) “A study of Micropile groups subjected to Lateral loading conditions” Proceedings of Indian Geotechnical Conference. December 15-17, 2011, Kochi (Paper No. H-241)
- 30) Sharma, B, Saikia, B. D. and Hazarika, P.(2012) “Determination of Liquefaction Potential of Guwahati city (2012).Proceedings of the Indian Geotechnical Conference, December 13-15, 2012, New Delhi, India. Pp1077-1081
- 31) Sharma,B, Rahman, S.K. and Saikia, B.D. (2013) “Use of GIS based maps for preliminary assessment of subsoil of Guwahati City”. Proceedings of Indian Geotechnical Conference December 22-24, 2013, Roorkee
- 32) Sharma,B, Rahman,S.K. and Saikia,B.D. (2013). “Use of contour maps for preliminary assessment of subsoil of Guwahati City. Proceedings of Indian Geotechnical Conference December 22-24, 2013, Roorkee
- 33) Sharma,B; Khasiyab,K; Bharali,Rand Sarma,B (2013) “ A study of CBR properties of Soil reinforced with Jute Geotextile with reference to Road Construction in Assam”. Proceedings of Indian Geotechnical Conference December 22-24, 2013, Roorkee
- 34) Sharma,B, Zaheer,S and Hussain,Z (2013)“An Experimental Model for Studying the Performance of Vertical and Batter Micropiles”. Proceedings of the International conference of Geo-Characterization and Modeling for Sustainability. Geo Congress 2014., Atlanta, U.S.A.
- 35) Talukdar,P and Sharma,B. (2014). “ Determination of Compaction Characteristics of soil by static compaction method”. Proceedings of NES –Geocongress (2014) 18th October 2014, Guwahati.
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- 37) Das,p; Sharma,L and Sharma,B.(2014). “Stability analysis of a Hillock with a 64-lakh litre capacity water tank- A case study.” Proceedings of Indian Geotechnical Conference IGC-2014,December 18-20,2014, Kakinada, India
- 38) Begum,N and Sharma,B(2014). “ Determination of CBR value from compaction characteristics and index properties of fined grained soils.” Proceedings of Indian Geotechnical Conference IGC-2014,December 18-20,2014, Kakinada, India
- 39) Sharma, B and Doley,M. “ Probabilistic Assessment of liquefaction properties of Guwahati city”. Proceedings of the 50th Indian Geotechnical conference, 17th – 19th December 2015, Pune, Maharashtra
- 40) Sharma,B and Deka, P.(2016) “A study on Compressibility,Swelling and Permeability Behaviour of Bentonite-Sand Mixtures”. Proceedings of the Indian Geotechnical Conference, IGC 2016, 15-17 December, IIT Madras, Chennai,India.
- 41) Sharma,B and Sarkar,S.(2016). “ A Study on Efficiency of Micropile Groups” Proceedings of the Indian Geotechnical Conference,IGC 2016, 15-17 December, IIT Madras, Chennai,India.
- 42) Sharma,B and Deka,A.(2016). “ A study on Static compaction of Soils” Proceedings of the Indian Geotechnical Conference,IGC 2016, 15-17 December, IIT Madras, Chennai,India.
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- 44) Sharma, B (2016). “Application of micropiles for underpinning and seismic retrofitting of structures” Proceedings of the first international conference on CESDOC, 2016,19.21 December,Guwahati,Assam.
- 45) Sharma,B; Siddique,A; Medhi, B. (2017). Assessment of Liquefaction Potential of Guwahati city using Ground Response Analysis. Proceedings of the National conference on Recent advancement in Geotechnical Investigations and Ground Improvement Techniques, 14-15 May,2017, NIT Silchar.
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- 47) Sharma, B and Deka, P (2018). “A study on Compressibility,Swelling and Permeability Behaviour of Bentonite-Sand Mixtures”. ” Springer Nature Singapore Pte

Ltd. 2019.. In: Stalin, V. K., Muttharam, M. (Eds.) Geotechnical Characterisation and Geoenvironmental Engineering. Lecture Notes in Civil Engineering 16, https://doi.org/10.1007/978-981-13-0899-4_6. pp 43 - 50

48) Sharma, B and Sarkar, S (2018).“ A Study on Efficiency of Micropile Groups” Springer Nature Singapore Pte Ltd. 2019. In: **Thyagaraj**, T (Ed.) Ground Improvement Techniques and Geosynthetics. Lecture Notes in Civil Engineering 16, https://doi.org/10.1007/978-981-13-0559-7_2. pp11-18

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52) Hussain, Z; Sharma, B and Rahman, T (2018) “A Model Study of Micropile Groups subjected to Lateral Loading under different Relative Density”. Proceedings of DFI-India 2018: 8th Conference on Deep Foundations Technologies for Infrastructure Development in India, Deep foundation Institute.pp 240-249.

53) Siddique, A and Sharma, B. (2018). “Comparison of 1D equivalent Linear and Nonlinear Ground response Analysis for different soil profiles”. Proceeding of the international conference on Infrastructure Development. 21-22 December, Jorhat Engineering College, Jorhat, Assam.

54)Sharma, B and Tribeni, S (2018) “ Effect of ethanol on compressibility, Swelling and permeability characteristics of bentonite – sand mixture”. Proceedings of the Indian geotechnical conference, 2018, Indian Institute of Science Bengaluru, 13-15 December, 2018.

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Roorkee, India.

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- 43) Sharma, B and Deka, A (2018) “ A study on Static compaction of Soils” Springer Nature Singapore Pte Ltd. 2019. In: Stalin, V. K., Muttharam, M. (Eds.) Geotechnical Characterisation and Geoenvironmental Engineering. Lecture Notes in Civil Engineering 16, https://doi.org/10.1007/978-981-13-0899-4_1_pp3-10.
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- 45) Sharma B., Gogoi B., Sridharan A. (2018) Static Compaction Characteristics of Coarse and Fine Grained Soils. In: Hossain Z., Zhang J., Chen C. (eds) Solving Pavement and Construction Materials Problems with Innovative and Cutting-edge Technologies. GeoChina 2018. Sustainable Civil Infrastructures. Springer, Cham. DOIhttps://doi.org/10.1007/978-3-319-95792-0_4pp45-67.
- 46) Hussain, Z; Sharma, B and Rahman, T (2018) “A Model Study of Micropile Groups subjected to Lateral Loading under different Relative Density”. Proceedings of DFI-India 2018: 8th Conference on Deep Foundations Technologies for Infrastructure Development in India, Deep foundation Institute.pp 240-249.
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