



Dr. Shantanu Patra

Bio-Sketch

Teaching Experience

- Presently, **Assistant Professor**, *Indian Institute of Technology Bhubaneswar, Odisha, India.*
June 2017 onwards
- December 2016 - June 2017 **Assistant Professor**, *Indian Institute of Technology Mandi, Himachal Pradesh, India.*
- Sept 2014 - Dec 2016 **Assistant Professor**, *National Institute of Technology Rourkela, Odisha, India.*

Postdoctoral Research Experience

- Feb 2013-Sept 2014 **Postdoctoral Research Assistant**, *University of Dundee, UK, Project Title: "GeoWAVE: Geotechnical and mooring design solutions for the offshore renewable wave energy industry".*
- Aug 2012-Feb 2013 **Research Associate**, *Indian Institute of Technology Delhi, India, Project Title: "Analysis and model tests on granular pile group-mat-soft soil foundation reinforced with and without geosynthetics".*

Education

- 2008–2012 **PhD in Geotechnical and Geoenvironmental Engineering**, *Indian Institute of Technology Delhi, India, CGPA – 9.00/10.*
- 2005–2007 **Masters of Technology in Geotechnical and Geoenvironmental Engineering**, *Indian Institute of Technology Delhi, India, CGPA – 9.05/10.*
- 2001–2005 **Bachelor of Technology in Civil Engineering**, *Jalpaiguri Govt. Engg. College, Jalpaiguri, West Bengal, India, GPA – 8.28/10.*

PhD Thesis

- Title *A Study on Oblique Pullout Behavior of Reinforced Soil Considering Pasternak Subgrade.*
- Supervisor Professor J.T. Shahu.

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Masters Thesis

Title *Instability Analysis of Earth dams and Remedial Measures.*
Supervisor Professor G.V. Ramana.

Industrial Experience

Dec 2007-Feb 2008 **Assistant Engineer**, *West Bengal State Electricity Transmission Co. Ltd.*, West Bengal, India.
Aug 2007-Dec 2007 **Technical Executive**, *Indo-Canadian Consultancy Services Ltd.*, Noida, Uttar Pradesh, India.

Teaching

- [1] Mechanics of Rigid Bodies (IC 240), UG Course, IIT Mandi
- [2] Design Practicum (IC 201P), Mentor for Group 3, UG Course, IIT Mandi
- [3] Earthquake Geotechnical Engineering (CE 619), PG Course, NIT Rourkela
- [4] Foundation Engineering Design Practice (CE 672), PG Course, NIT Rourkela
- [5] Seminar and Technical Writing (CE 688), PG Course, NIT Rourkela
- [6] Environment and Safety Engineering (CE 130), UG Course, NIT Rourkela
- [7] Engineering Drawing (CE 171), UG Course, NIT Rourkela
- [8] Product Development Lab-I (CE 367), UG Course, NIT Rourkela

Honours and Awards

December, 2016 IGS - YGE Best Paper Biennial Award - 2016, IGS-Delhi Chapter YGE Award
December, 2014 IGS - YGE Best Paper Biennial Award - 2014, IGS-Baroda Chapter YGE Award
Dec 12, 2012 Received offer for Post-doctoral Research Assistant from University of Dundee, United Kingdom, on Geotechnical Centrifuge Modelling and Numerical Analysis for Foundation Design of Offshore Wave Energy Converter.
Nov 09, 2012 Post-doctoral Fellowship offer- University of Alberta, Canada, on Trench-less Technology and Road Research.

Research Interest

- Geotechnical engineering, ground improvement, geosynthetics and their application, reinforced soil structures, stability of slopes and earth dams.
- Numerical and physical modelling in geotechnical engineering, geotechnical centrifuge modeling.
- Geotechnical earthquake engineering and geotechnical engineering for disaster mitigation, trenchless Technology, tunneling and underground structures.
- Offshore geotechnical engineering, foundation design and analysis, shallow and deep foundation.

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Sponsored Projects

(2016-2019, ongoing) Principal Investigator, **Project Title:** Stability analysis of reinforced soil wall under seismic loads - a novel approach, Grant amount **Rs. 40.34 lacs**, Science and Engineering Research Board, DST, Gov. of India

Publications in Journals

- [1] Chatterjee, U., Patra, S., Butola, B. S. and Joshi, M. (2017). "A systematic approach on service life prediction of a model aerostat coating." **Polymer testing**, Elsevier, 60, 18-29. SCI and SCOPUS Indexed. Impact factor 2.412
- [2] Patra, S. and Shahu, J.T. (2015). "A Generalized Model for Behavior of Extensible Reinforcement Resting on Nonlinear Pasternak Subgrade subjected to oblique pull." **Geotechnique**, ICE, Thomas Telford, 65(9), 770-779. SCI and SCOPUS Indexed. Impact factor 2.496
- [3] Patra, S., and Shahu, J. T. (2012). "Pasternak Model for Oblique Pullout of Inextensible Reinforcement." **Journal of Geotechnical and Geoenvironmental Engineering**, ASCE, 138(12), 1503-1513. SCI and SCOPUS Indexed. Impact factor 2.29

Geotechnical Special Publication

- [4] Patra, S. and Shahu, J. T. (2015). "Analysis of reinforced soil wall considering oblique pullout of reinforcement resting on two-parameter Pasternak subgrade." Geotechnical Special Publication, ASCE, GSP 256, 1464-1472, doi: 10.1061/9780784479087.132. SCOPUS Indexed.

Publications in Conferences

International Conferences

- [1] Kumar, P.V.P., Patra, S. and Patel, V. (2016). "Numerical investigation of a full scale reinforced soil wall - a case study." 5th International Conference on Forensic Geotechnical Engineering, December 8-10, 2016, Bengaluru.
- [2] Patra, S. and Shahu, J. T. (2016). "Stability Analysis of Reinforced Soil Wall under Seismic Loads: A novel Approach." Trends and Recent Advances in Civil Engineering (TRACE 2016), Aug 11-12, 2016, Noida, India, GE 109.
- [3] Knappett, J.A., Brown, M.J.Z., Aldaikh, H., Patra, S., O'Loughlin, C.D., Chow, S., Gaudin, C. and Lieng, J.T. (2015). "A review of anchor technology for floating renewable energy devices and key design considerations." 3rd International Symposium on Frontiers in Offshore Geotechnics (ISFOG), 10-12 June, 2015, Oslo, Norway, page 887-892. SCOPUS Indexed
- [4] Patra, S. and Shahu, J. T. (2014). "An updated discretization technique to evaluate oblique pullout capacity of inextensible reinforcement." International Conference on Sustainable Civil Infrastructure (ICSCI), October 17-18, 2014, Hyderabad, India, page 490-496.

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- [5] Patra, S. and Shahu, J. T. (2014). "A new analysis of reinforced soil wall resting on soft ground." 9th International Symposium on Lowland Technology (ISLT 2014), September 29-October 1, 2014, Saga, Japan, page 348-352.
- [6] Patra, S., Knappett, J.A., Brown, M.J.Z, and Aldaikh, H. (2014). "Development of a scalable actuator control system for use in a geotechnical centrifuge." International conference on Information Technology in Geo-Engineering, July 21-22, 2014, Durham, UK, page 183-190.
- [7] Knappett, J.A., Brown, M.J.Z, Aldaikh H., and Patra, S.(2014). "Evaluation of Monotonic Ultimate Pull-out Capacity of Plate Anchors in Sand." International conference on Information Technology in Geo-Engineering, July 21-22, 2014, Durham, UK, page 291-297.

National Conferences

- [1] Patel, V., Patra, S. and Kumar, P.V.P. (2016). "Limit analysis of full scale MSE wall- a comparative study." Indian Geotechnical Conference, December 15-17, 2016, Chennai.
- [2] Mahajan, S. and Patra S. (2015). "Stability of reinforced soil wall-a numerical approach." Indian Geotechnical Conference, December 17-19, 2015, IGC Pune.
- [3] Patra S. and Shahu, J. T. (2015). "Effect of nonlinear subgrade response factor on oblique pullout capacity." Indian Geotechnical Conference, December 17-19, 2015, IGC Pune.
- [4] Patra, Shantanu and Shahu, J. T. (2012). "Effect of reinforcement stiffness on the Oblique Pullout Behavior of Reinforced Soil." Indian Geotechnical Conference, December 13-15, 2012, New Delhi (Paper No. F-636.), page 747-750.
- [5] Patra, Shantanu and Shahu, J. T. (2011). "Effect of subgrade shear stiffness on oblique pullout behavior of reinforced soil." Proceedings of Indian Geotechnical Conference, December 15-17, 2011, Kochi (Paper No. N-292.), page 935-938.

Ph.D. Guidance (In Progress)

- [1] Partha Sarathi Nayek: Experimental and Numerical Study of Reinforced Soil Wall (Sole guide)

M.Tech. Guidance

- [1] Shweta Yogiraj Mahajan (2016): Numerical Analysis of Reinforced Soil wall (Sole guide), NIT Rourkela
- [2] Tarini Jahanvi (2016): Reliability-Based Stability Analysis of Slope (Sole guide), NIT Rourkela
- [3] Anoop Tiwary (2016): Analysis of Monopile Foundation for Offshore Wind Turbine (Sole guide), NIT Rourkela

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B.Tech. Project supervision

- [1] Jigme Thinley (2016): Reliability Based Analysis of Cantilever Sheet Pile Wall (Sole guide), NIT Rourkela
- [2] Neamatullah Sedaqat (2016): Finite Element Analysis of Foundation near Slope (Sole guide), NIT Rourkela

Reviewer of Journals

- [1] Journal of Geotechnical and Geoenvironmental Engg., ASCE
- [2] International Journal of Geosynthetics and Ground Engineering, Springer

Continuing Education

- Feb 2017 Lecture delivered at a workshop (sponsored by National Institute of Disaster Management NIDM) on "Bio-Engineering Measures for Controlling Landslides and Geoenvironmental Issues" at IIT Mandi, Himachal Pradesh, Feb 7-9, 2017.
- Aug 11-12, Presented a paper at International conference on Trends and Recent Advances in 2016 Civil Engineering (TRACE 2016), Noida, India.
- Aug 04, 2015 Participated in National Workshop on Technology Enabled Learning (TECHEL 2015)
- Dec 18, 2014 Participated in Indian geotechnical Conference 2014, Kakinada, India. Oct 17-18, 2014: Presented a paper at International Conference on Sustainable Civil Infrastructures (ICSCI 2014), ASCE, India chapter, Hyderabad, India.
- July 21-22, Presented a paper at International conference on Information Technology in Geo-2014 Engineering, Durham, UK
- Nov 20, 2013 Participated OPD workshop on "High Performance Interviews"-University of Dundee, UK.
- Aug 29-30, participated in the third consortium meeting GeoWAVE, Edinburgh, UK. 2013
- Aug 27, 2013 Participated "National Instruments Hands-On Taster seminar"- Newbury, UK.
- Apr 08, 2013 Participated a seminar on "OES Mooring and Anchoring Practices Offshore: 40 years of experience with drag embedment anchors"- Aberdeen, United Kingdom.
- Dec 13-15, Presented conference paper at Indian geotechnical conference 2012, Delhi, India. 2012

Professional Affiliation

- o Life member, Indian Geotechnical Society (IGS), India.
- o Member 2013, British Geotechnical Association, United Kingdom.
- o Student Member 2004-2005, Institute of Engineers, India.

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