

Prof. Dr. Riaz Bhanbhro

Professor & Geotechnical Engineer | PhD, Lic.Eng., MBA

Scopus: [Author ID 56386159100](#)

Email: riaz@quest.edu.pk | bhanbhro@gmail.com

LinkedIn: [linkedin.com/in/riaz-bhanbhro](https://www.linkedin.com/in/riaz-bhanbhro)

ORCID: [0000-0002-5987-0006](https://orcid.org/0000-0002-5987-0006)

ResearchGate: [researchgate.net/profile/Riaz-Bhanbhro](https://www.researchgate.net/profile/Riaz-Bhanbhro)

Profile: cv.hal.science/riaz

Position: Professor, Civil Engineering Dept., QUEST, Pakistan

Residency: Swedish Permanent Resident (PUT)

Academic Profile

Dr. Riaz Bhanbhro is an internationally recognised **civil and geotechnical engineer, researcher, and academic leader** with **18+ years of progressive experience** spanning world-class research in Sweden, academic leadership in Pakistan, and international industry consultancy. He earned his **PhD and Licentiate at Luleå University of Technology, Sweden**, conducting advanced laboratory research on Swedish tailings dams under the mentorship of Professor Sven Knutsson.

His research spans **tailings dam safety, soil mechanics, foundation engineering, slope stability, ground improvement, sustainable geomaterials, canal embankment stabilization, and geotechnical risk assessment for urban and mining infrastructure**. He has secured **PKR 24.2 million total** in competitive research funding as Principal Investigator, authored **14+ peer-reviewed publications** in ASCE, Springer, and international journals, supervised **4 PhD students** (1 successfully defended), and mentored **300+ students** with a **4.6/5 satisfaction rating**. He holds **Swedish Permanent Residency** and an **MBA in Strategic Planning & Financial Management** (Blekinge University of Technology, 2025), combining deep technical expertise with strategic leadership capability.

Currently serving as **Professor and Head of Geotechnical Laboratory** at Quaid-e-Awam University of Engineering, Science & Technology (QUEST), Pakistan, he is the recipient of the **World Bank PforR Award (2023)** for best geotechnical project management and the **J. Gust Richert Grant (2015)** from SWECO Sweden.

Education

Oct 2025

MBA — Industrial Economics and Management

Blekinge Institute of Technology (BTH), Karlskrona, Sweden (Teknologie magisterexamen, SeQF/EQF Level 7)

- Thesis: *Strategic Leadership and Financial Sustainability in Higher Education — A Qualitative Study of Pakistani Universities (Grade: Very Good)*
- Courses: Corporate Finance • Strategy & Control • Perspectives on Leadership • Economic Analysis of Technology & Innovation (**Very Good**) • Managerial Economics • Research Methodology in Industrial Economics
- Competencies developed: Strategic financial planning, corporate finance, technology & innovation economics, organisational leadership, qualitative research methodology

Apr 2017

Doctor of Philosophy (PhD) — Geotechnical Engineering

Luleå University of Technology (LTU), Luleå, Sweden (Teknologie doktorsexamen, 240 ECTS, SeQF/EQF Level 8)

- Thesis: *Mechanical Behavior of Tailings: Laboratory Tests from a Swedish Tailings Dam* (ISBN 978-91-7583-849-6)
- Supervisor: Professor Sven Knutsson; Assistant Supervisor: Dr. Tommy Edeskär
- Industrial partners: TCS AB and Boliden AB (Swedish mining industry)
- Research: 150+ undisturbed tailings tests; triaxial (CU/CD/UU), direct shear, oedometer, permeability; particle breakage and shape analysis; deposition angle effects on shear strength; primary & secondary deformation analysis; numerical modelling (PLAXIS, GeoStudio)
- **Pedagogical**: Pedagogy in Higher Education (7.5 cr, Prof. Eva Alerby) • Scientific Publication & Academic Writing (7.5 cr) • Research Funding (3.0 cr)
- **Technical**: Soil Modelling with PLAXIS (7.5 cr) • Advanced Continuum Mechanics (7.5 cr) • Dams & Dam

Safety (5.0 cr) • Applied Ground Water Hydrology (7.5 cr) • Advanced Laboratory Methods (4.5 cr) • Frost in Geotechnical Engineering (5.0 cr) • Stability in Irrigation Canals (7.5 cr)

Nov 2014

Licentiate of Engineering — Soil Mechanics & Foundation Engineering

Luleå University of Technology (LTU), Luleå, Sweden

- Thesis: *Mechanical Properties of Tailings: Basic Description of a Tailings Material from Sweden*
- Focused on particle breakage, deformation behaviour, and dam stability

Mar 2007

Bachelor of Engineering — Civil Engineering

Quaid-e-Awam University of Engineering, Science & Technology, Nawabshah, Pakistan

- 240 ECTS equivalent; specialization in geotechnical engineering
- **Vice-Chancellor's Best Graduate Award**

Academic Positions

Nov 2025 – Present

Professor — Civil Engineering Department

Quaid-e-Awam University of Engineering, Science & Technology (QUEST), Nawabshah, Pakistan

- Lead national geotechnical research programmes on tailings, dam safety, sustainable geomaterials, and urban infrastructure resilience
- Full budget and P&L responsibility for department; manage 50+ staff through Unit Leads and Group Leads
- Direct postgraduate curriculum development; oversee quality assurance and accreditation processes
- Responsible for laboratory operations, equipment procurement, and safety management systems
- Forge international collaborations with Swedish, Finnish, and regional institutions

Aug 2022 – Nov 2025

Associate Professor & Head of Geotechnical Laboratory

Quaid-e-Awam University (QUEST), Nawabshah, Pakistan

- Co-Chairman, Civil Engineering Department; contributed to institutional strategic planning
- Secured PKR 7.4M NRPU-HEC research grant as PI (canal embankment stabilisation)
- Reduced laboratory operating expenses 15% while expanding testing capability
- Organized TechXchange 2024 International Conference (150+ participants, 12 countries)
- Organized 5th National Conference on Energy, Geotechnical & Environmental Engineering (Jan 2023)
- Organized Program Committee Member, 6th Civil Engineering International World Conference (Feb 2021)

May 2017 – Aug 2022

Assistant Professor — Civil Engineering Department

Quaid-e-Awam University (QUEST), Nawabshah, Pakistan

- Taught Soil Mechanics, Foundation Engineering, Advanced Geotechnical Engineering, Research Methodology
- PI on PKR 7.4M HEC research grant (municipal solid waste in geotechnical structures)
- Developed laboratory testing protocols to ASTM, BS, and AASHTO standards
- Supervised 15 master's and undergraduate theses; mentored 300+ students (4.6/5 satisfaction)
- Published 6 peer-reviewed journal articles and 2 conference papers

Research Associate — Mining & Geotechnical Engineering Division*Luleå University of Technology (LTU), Luleå, Sweden*

- Conducted 150+ undisturbed tailings tests (triaxial, direct shear, consolidation, permeability) from Swedish tailings dams
- Produced 10 peer-reviewed publications, Licentiate thesis, and doctoral dissertation
- Delivered 7 comprehensive geotechnical investigation reports to WSP Group, Golder Associates, MRM Sweden, and Balfour Beatty Rail
- Led field expeditions to remote Swedish tailings dams (2015–2016) for in-situ testing and sampling
- Awarded PKR 5M J. Gust Richert Grant (2015) from SWECO Sweden for tailings dam research excellence
- Participated in national and international geotechnical research networks (Sweden, Finland, Norway)
- Co-supervised undergraduate and graduate students; served on university examination boards

Research Funding (Principal Investigator)**Total competitive funding secured: PKR 24.2 Million**

Year	Project Title & Funder	Amount
2025	Solving Energy Crises in Pakistan — Sindh Higher Education Commission (SHEC)	PKR 4.4M
2022	Laboratory Investigation on Stabilization of Canal Embankments — NRPU, HEC Pakistan	PKR 7.4M
2017	Utilization of Municipal Solid Waste in Geotechnical Structures — HEC Pakistan	PKR 7.4M
2015	Advanced Laboratory Investigation on Tailings Dams — J. Gust Richert Grant, SWECO Sweden	PKR 5M

Awards & Honours

- 2023** World Bank Program for Results (PforR) Award — Best Performance in Geotechnical Project Management
- 2015** J. Gust Richert Grant — SWECO Sweden — for Tailings Dam Research Excellence
- 2011** Higher Education Commission (HEC) Pakistan — Full Scholarship for PhD Studies in Sweden
- 2007** Vice-Chancellor's Best Graduate Award — Quaid-e-Awam University

Teaching Experience**Courses with Full Responsibility (design, delivery, examination, administration):**

Course	Level	Years Taught
Soil Mechanics	Undergraduate	2017–present (8 years)
Foundation Engineering	Undergraduate/Graduate	2017–present (8 years)
Advanced Geotechnical Engineering	Graduate (MSc)	2017–present (8 years)
Mining Geotechnics	Graduate (MSc)	2020–present (5 years)
Research Methodology	Graduate (MSc/PhD)	2018–present (7 years)
Geotechnical Laboratory Practice	Undergraduate	2017–present (8 years)

Student satisfaction: 4.6/5 (university evaluation system, average across all courses)**Teaching language:** English (primary); Urdu where required for undergraduate courses**Teaching approach:** Research-led, problem-based; case studies drawn from live geotechnical projects

Doctoral & Postgraduate Supervision

PhD Students (current):

1. Canal embankment stabilization with sustainable binders — ongoing
2. Recycled aggregates and waste materials in geotechnical applications — ongoing
3. Numerical modelling of ground improvement for infrastructure — ongoing
4. Geotechnical properties and stabilization of dredged sediments — ongoing

PhD Students (completed):

5. Sustainable geomaterials for embankment construction — **successfully defended**

Master's & Undergraduate Theses Supervised: 15 theses on topics including foundation design, slope stability, soil improvement, concrete technology, and geotechnical site investigation.

Conference Organization & Invited Presentations

- 2024** Organizer & Session Moderator, TechXchange 2024 International Conference, QUEST, Nawabshah, Pakistan (Jan 25–26, 2024) — 150+ participants, 12 countries
- 2023** Organizer, 5th National Conference on Energy, Geotechnical & Environmental Engineering, QUEST, Nawabshah (Jan 18–20, 2023)
- 2021** Program Committee Member, 6th Civil Engineering International World Conference, QUEST, Nawabshah (Feb 26–27, 2021)
- 2019** Invited Speaker, XVII European Conference on Soil Mechanics & Geotechnical Engineering (ECSMGE-2019), Reykjavik, Iceland
- 2015** Invited Speaker, Pan-American Conference on Soil Mechanics and Geotechnical Engineering, Buenos Aires, Argentina

Research Expeditions & Industrial Collaborations

- 2015–2016** Lead Researcher, Expedition to Swedish Tailings Dams — in-situ testing, undisturbed sampling, geotechnical assessment; contributed to national tailings management database
- WSP Group** Skellefteå, Sweden — triaxial testing for geotechnical site investigations
- Golder Associates** Finland — seepage behaviour analysis in mining dams and tailings facilities
- MRM Sweden** 25 direct shear tests for mining waste characterization
- Balfour Beatty Rail** Sweden — geothermal frost-depth analysis, Stockholm–Jönköping High-Speed Railway
- NESPAK / EA** Pakistan — consulting geotechnical engineer: airport, highway, government building, and industrial foundation projects

Consulting Geotechnical Projects (2017–Present)

- Nawabshah Airport** CBR evaluation and pavement design recommendations for runway and apron areas, Sindh
- National Highway N-120** Slope stability analysis, SPT/CBR investigations, deformation modelling (PLAXIS), technical specifications
- Govt. Buildings** Foundation design for multiple government buildings — Works & Services Dept., Govt. of Sindh
- Oil Depot Tanks** Bearing capacity analysis, settlement predictions, and construction specifications for large oil storage tank foundations

Technical Skills

Geotechnical SW	PLAXIS 2D/3D (expert — formal LTU course + 150+ tests), GeoStudio (SLOPE/W, SEEP/W, SIGMA/W, QUAKE/W), Rocscience Slide2/Slide3
CAD & Design	AutoCAD, AutoCAD Civil 3D, Autodesk Revit
Programming	Python, FastAPI, CP-SAT (OR-Tools), SQL, SPSS, MATLAB, R (Basic)
Lab Testing	Triaxial (CU, CD, UU), Direct Shear, Oedometer/Consolidation, Permeability, SPT, CBR, Vane Shear, Borehole Logging, Atterberg Limits, Proctor Compaction, UCS, Particle Shape Analysis
Standards	Eurocode 7, ANCOLD, ICOLD, CDA, ASTM, BS, AASHTO, SGF
Management	Strategic Financial Planning, Corporate Finance, Technology & Innovation Economics, Organisational Leadership, P&L Management, Budget Control, Grant Writing & Research Funding
Pedagogy	Högskolepedagogik — Pedagogy in Higher Education (7.5 cr, Luleå University of Technology, 2017); constructive alignment, assessment design, doctoral supervision
Office / LMS	Microsoft Office Suite, LaTeX, Moodle, Blackboard

Research Areas & Keywords

Tailings Dams & Mining Waste • Soil Mechanics • Foundation Engineering • Slope Stability • Seepage Analysis • Ground Improvement • Soil Stabilization • Canal Embankment Design • Sustainable Geomaterials • Recycled Aggregates • Dredged Sediment Treatment • Dam Safety • Urban Infrastructure Resilience • Climate Adaptation in Geotechnics • Numerical Modelling (FEM) • Risk Assessment • Geotechnical Site Investigation • Laboratory Testing

Pedagogical Qualification

Qualification	Högskolepedagogik — Pedagogy in Higher Education , 7.5 ECTS credits
Institution	Luleå University of Technology, Sweden — Examiner: Professor Eva Alerby
Scope	Swedish university-level pedagogical qualification (equivalent to <i>Högskolepedagogisk utbildning</i> required by Swedish HEIs). Covered: learning theory, constructive alignment, course & curriculum design, assessment & examination, doctoral supervision, academic ethics, and SoTL.
Year	2017 (recorded on doctoral degree transcript, Luleå University of Technology)

Authored Books (2)

1. **Bhanbhro, R.** (2025). *The Art of Winning Research Grants*. Independently published (September 16, 2025). ISBN-13: 979-8265783486.
2. **Bhanbhro, R.** (2025). *Leadership and Financial Sustainability in Pakistani Universities*. Independently published (September 2, 2025). ISBN-13: 979-8263464028.

Journal Articles (21)

1. Bhatti, G.S., Memon, B.A., Memon, K., Oad, M., & **Bhanbhro, R.** (2025). Effect of Class-C fly ash on compressive strength of RAC made with recycled aggregates from different structural members. *Spectrum of Engineering Sciences*, 1754-1764.
2. Sahito, A.M., Memon, R.A., Kumar, A., & **Bhanbhro, R.** (2025). Evaluation of Strength Characteristics of Cement-Stabilized Rammed-Earth Material. *Civil Engineering Journal*, 11(7), 2782-2810.
3. Bhatti, G.S., Memon, B.A., Zardari, M.A., Oad, M., **Bhanbhro, R.**, & Bhutto, A.H. (2024). Effect of recycled aggregates with different parent strength and fly ash on flexural strength of recycled aggregate concrete prisms. *Mehran University Research Journal of Engineering & Technology*, 43(4), 29-43.
4. Zardari, S., **Bhanbhro, R.**, Zardari, M.A., Memon, B.A., Mastoi, A.K., & Bhutto, A.H. (2023). Impact of Overburden on Hydraulic Conductivity and Numerical Analyses of Seepage and Stability of Cement Stabilized Embankments. *Civil Engineering and Architecture*, 11(4), 2240-2254.
5. Ali, I., Memon, B.A., Oad, M., **Bhanbhro, R.A.**, & Dahri, S.A. (2023). Workability and compressive strength of recycled aggregate concrete with different water-cement ratios. *Quaid-e-Awam University Research Journal of Engineering, Science & Technology*.
6. Ali, S., Yong, F., Bhutto, A.H., Jamil, F., Khan, J.S., & **Bhanbhro, R.** (2022). Effectiveness of EPS bead size and cement proportions on the strength and deformation of light-weighted soil. *Engineering, Technology & Applied Science Research*, 12(6), 9709-9714.
7. Mastoi, A.K., **Bhanbhro, R.**, Chen, X., Fatah, T.A., & Mehroz, A. (2022). Assessing long-term performance of stabilized Zn-contaminated dredged sediment slurry treated with the PHDVPSS method. *Environmental Science and Pollution Research*, 29(13), 19262-19272.
8. Bhutto, A.H., Zardari, S., Zardari, M.A., **Bhanbhro, R.**, & Wagan, F.H. (2021). Numerical Analysis of Stability of a Road Embankment Subjected to Floods. *Quaid-e-Awam University Research Journal of Engineering, Science & Technology*.
9. Bhutto, A.H., Bhurgri, G.S., Zardari, S., Zardari, M.A., Memon, B.A., & Babar, M.M. (2020). Settlement response of a multi-story building. *Engineering, Technology & Applied Science Research*, 10(5), 6220-6223.
10. **Bhanbhro, R.**, Zardari, M. A., Memon, B. A., Soomro, M. A., & Edeskär, T. (2021). Mechanical Properties and Particle Breakage of Uniform-Sized Tailings Material. *Journal of Materials in Civil Engineering (ASCE)*, 33(3). DOI: [10.1061/\(ASCE\)MT.1943-5533.0003597](https://doi.org/10.1061/(ASCE)MT.1943-5533.0003597)
11. **Bhanbhro, R.**, Knutsson, R., Zardari, M. A., Edeskär, T., & Knutsson, S. (2018). Mechanical properties of soft tailings from different depths of a Swedish tailings dam: Results from triaxial tests. *Scientia Iranica, Transaction A: Civil Engineering*.
12. **Bhanbhro, R.**, Edeskär, T., & Knutsson, S. (2017). Mechanical Behavior of Uniformed Tailings Material in Triaxial Tests. *Electronic Journal of Geotechnical Engineering*, 22(06), 1717–1730.
13. **Bhanbhro, R.**, Knutsson, R., Edeskär, T., & Knutsson, S. (2014). Mechanical properties of soft tailings from a Swedish tailings impoundment: Results from direct shear tests. *Electronic Journal of Geotechnical Engineering*, 19(Z), 9023–9039.
14. Zardari, S., **Bhanbhro, R.**, Zardari, M. A., Memon, B. A., & Mastoi, A. K. (2023). Effect of Cement on Clayey Silt for Stabilization of Canal Embankments. *International Journal of Civil Engineering (Springer)*, 21(6), 957–972. DOI: [10.1007/s40999-022-00808-w](https://doi.org/10.1007/s40999-022-00808-w)
15. Shah, S. R. A., Kumar, A., Zardari, M. A., Ali, T. H., & **Bhanbhro, R.** (2023). Numerical Analysis of Settlement of a Piled Raft Foundation on Coastal Soil. *Open Civil Engineering Journal*, 9(2), 319–333.
16. Mastoi, A. K., **Bhanbhro, R.**, Traore, A. F., Oad, M., & Zardari, S. (2022). Preliminary investigation of high-

water content dredged sediment treated with chemical-physical combined method at low cement content. *Environmental Science and Pollution Research (Springer)*, 29(22), 32763–32772.

17. Jokhio, N. A., Memon, B. A., Malah, S. A., Oad, M., & **Bhanbhro, R.** (2024). Workability and strength of recycled aggregate concrete reinforced with nylon fibers. *Mehran University Research Journal of Engineering and Technology*, 43(2), 34.
18. Dahri, S., Memon, B. A., Oad, M., **Bhanbhro, R.**, & Rahu, I. (2021). Quality of Recycled Aggregates and Compressive Strength of No-Fines Recycled-Aggregate Concrete. *Engineering Technology and Applied Science Research*, 11(5), 7641–7646.
19. Bhutto, A. H., Bhurgri, G. S., Zardari, S., Zardari, M. A., & **Bhanbhro, R.** (2020). Numerical Analysis of Rapid Drawdown of an Embankment Dam. *Engineering Technology and Applied Science Research*, 10(2), 5496–5500.
20. Memon, M. A., Memon, N. A., Memon, A. H., **Bhanbhro, R.**, & Lashari, M. H. (2020). Flow Assessment of Self-Compacted Concrete incorporating Fly Ash. *Engineering Technology and Applied Science Research*, 10(2), 5392–5395.
21. **Bhanbhro, R.**, Siyal, Z. A., Memon, B. A., Zardari, S., & Bhutto, A. H. (2020). Geotechnical Investigations of an Earth-Filled Site for Construction of a Building. *QUEST Research Journal of Engineering, Science & Technology*, 18(02), 71–74.

Conference Papers (2)

22. **Bhanbhro, R.**, Zardari, M. A., & Qureshi, A. S. (2019). Feasibility of using cemented-soils for canal embankments in Pakistan. *Proceedings of the XVII European Conference on Soil Mechanics and Geotechnical Engineering (ECSMGE-2019)*, Reykjavik, Iceland.
23. **Bhanbhro, R.**, Rodriguez, J., Edeskär, T., & Knutsson, S. (2015). Evaluation of Primary and Secondary Deformations and Particle Breakage of Tailings. *Proceedings of the Pan-American Conference on Soil Mechanics and Geotechnical Engineering*, Buenos Aires, Argentina.

Full list with citations: researchgate.net/profile/Riaz-Bhanbhro | ORCID: [0000-0002-5987-0006](https://orcid.org/0000-0002-5987-0006)

Languages, Memberships & Residency

Languages	English — Proficient (research, teaching, publication) • Swedish — Conversational (6+ years in Sweden) • Urdu/Sindhi — Native
Residency	Swedish Permanent Residency (PUT) • Swedish Driving Licence (Category B)
Memberships	Pakistan Engineering Council (PEC) — Registered Professional Engineer • American Society of Civil Engineers (ASCE) — Affiliate Member • International Society for Soil Mechanics & Geotechnical Engineering (ISSMGE) • Pakistan Geotechnical Engineering Society

References

Available upon request. References include Professor Sven Knutsson (PhD Supervisor, Luleå University of Technology, Sweden) and senior academic and industry contacts.