

CV



Personal Information:

Name: Eltayeb Hassan Onsa Elsadig.
Nationality: Sudanese.
Date of Birth: 24-Dec-1956, Atbara, Sudan.
Marital Status: Married.
Languages: Fluent writing, reading and speaking with Arabic and English languages.
Contacts:

Address:

Civil Engineering Department,
University of Tabuk,
Tabuk, Kingdom of Saudi Arabia.

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Google Scholars <https://scholar.google.com/citations?hl=ar&user=cNHsNwkAAAAJ>

Professional Education:

Ph.D. (Civil Engineering), University of Khartoum, Sudan, 1997.
M.Sc. (Structural Engineering – Grade A), University of Khartoum, Sudan, 1987.
B.Sc. (Honors – Second class Division 1), Civil Engineering, University of Khartoum, Sudan, 1981.

Professional Courses:

Lectures in Scouring and Scouring Related Problems, Phoenix, Arizona, USA, 2016.
Short Course on Bridge Load Rating, Washington, USA, 2011.
Twelve-week International Course, Seismic Design and Construction of Buildings, Macedonia. 1988.

Academic Post: Professor.

Memberships in Professional Councils and Societies

Fellow at the Sudan Engineering Society, (FSES).
Specialist Engineer, Sudan Engineering Council, (SEC).
Member of the American Society of Civil Engineers, (MASCE).
Member, Sudanese Society of Soil Mechanics and Foundation Engineering, (MSSSMFE).
Member, International Society of Soil Mechanics and Foundation Engineering, (MISSMFE).

Memberships in UNESCO - CWR Committees

2000 - 2005	Member of the Standing Committee of the UNESCO - CWR
1997 - 2000	Member of the Scientific Committee of the UNESCO - CWR

Employment Record:

- 2019 – Date Professor of structural engineering, Faculty of Engineering, University of Tabuk, KSA
- 2016 – 2019 Director, UNESCO Chair in Water Resources, Omdurman Islamic University, Sudan.
- 2008 - 2016 Director of the Implementation Unit for the Faculty of Engineering Sciences Development Project at Omdurman Islamic University; \$20,000,000 project financed by the Islamic Development Bank (Jeddah).
- 2005 – 2008 Project Manager (Contractor) for Aldamer Bridge Project, Sudan.
- 2000 - 2005 Dean, Faculty of Engineering Sciences, Omdurman Islamic University.
- 1997 - 2000 Head, Civil Engineering Department, Omdurman Islamic University.
- 1997 - 1998 Deputy Dean, Faculty of Engineering Sciences, Omdurman Islamic University.
- 1991 – 2019 Staff member at the Civil Engineering Department, Faculty of Engineering Sciences at Omdurman Islamic University, Sudan.
- 1981- 1991 Design Engineer in the Structural Design Section, Ministry of Works, Khartoum.

Subject of lectures:

No.	Subject	Class Level
1	Advanced Concrete Technology	BSc
2	Bridge Engineering	MSc
3	Construction Materials	BSc
4	Earthquake Engineering	BSc
5	Engineering Mechanics (Statics, Dynamics)	BSc
6	Finite Element Method	MSc, PhD
7	Mechanics of Materials	BSc
8	Plastic Methods of Analysis and Design	BSc, MSc
9	Reinforced Concrete Design	BSc
10	Soil and Foundation Engineering	BSc
11	Soil Mechanics 1 and 2	BSc
12	Stability of Structures	MSc
13	Structural Analysis	BSc
14	Structural Dynamics	BSc, MSc
15	Theory of Plates and Shells	MSc, PhD

Contribution in Establishing Engineering Programs:

- 2024 Co-founder of MSc program in Structural and Environmental Engineering at the Faculty of Engineering, University of Tabuk, KSA.

- 2013 Co-founder of Alhikma College for Science and Technology, a private college registered at the Ministry of Higher Education, Sudan.
- 2013 Member of the Scientific Committee for establishing curricula for the Civil Engineering Dept. at Alhikma College for Science and Technology.
- 2012 Establishing curricula for the Civil Engineering Dept., at the Cambridge College, a private engineering college registered at the Ministry of Higher Education, Sudan.
- 2009 Member of the Scientific Committee for establishing MSc and PhD programs (in civil engineering) at Karary University, Sudan.
- 2005 Initiator of the Faculty of Engineering Sciences Development Project at Omdurman Islamic University (OIU), a \$20,000,000 project, later, financed by the Islamic Development Bank (Jeddah).
- 2001 While being Dean Faculty of Engineering Sciences at OIU, establisher of the female students in civil engineering (the only of its kind in Sudan, as non-coeducation).
- 1994 Contributing to establishing curricula for the Civil Engineering Dept., at Karary University, Sudan.
- 1991 Contributing to establishing curricula for the Civil Engineering Dept., at the faculty of Engineering Sciences, Omdurman Islamic University.

Major Executed Engineering Projects:

- 2015 Design team leader (**Part-time** consultant).

Name of project: Almuassasa Overpass.

Location: Khartoum, Sudan.

Client: Ministry of Infrastructures and Transportation, Khartoum State.

Main project features: 313.4m long 14.38m wide overpass of two approach embankments of MSE reinforced earth panels. RC abutments.
8 spans (133.0m long) of steel I girders composite bridge, 26.0m central span of prestressed. Pile foundations.

- 2014 Construction Supervision team leader (**Part-time** consultant).

Name of project: Almolid Square Overpass.

Location: Khartoum, Sudan.

Client: Ministry of Infrastructures, Khartoum State.

Main project features: 313.4m long 14.38m wide overpass of two approach embankments of MSE reinforced earth panels. RC abutments.
8 spans (133.0m long) of steel I girders composite bridge. Raft and Pile foundations.



- 2014 Design Review and Construction Supervision team leader (**Part-time** consultant).

Name of project: Wad Albasheer Intersection Overpass.

Location: Omdurman, Sudan.

Client: Ministry of Infrastructures, Khartoum State.

Main project features: 310m long 14m wide overpass of two approach embankments of MSE reinforced earth panels. RC abutments. 4 spans of reinforced and prestressed concrete I girders, 106m long. Raft and Pile foundations.



2013 Design team leader (**Part-time** consultant).

Name of project: 4 Bridges at Karakon – Hamashkorieb Road.

Location: Kassala State, Sudan.

Client: Ministry of Roads and Bridges, Khartoum.

Main project features: 4 RC Integral bridges of total length = 225m, 12m wide. Pile foundations, hollow core deck slab.

2012 Study, design and supervision team leader (**Part-time** consultant).

Name of project: Zagalona storm water drain.

Location: Omdurman, Sudan.

Client: Ministry of Infrastructures, Khartoum State.

Main project features: 1.8km long RC storm water drain box culverts.

2012 Study, design and supervision team leader (**Part-time** consultant);

Name of project: Omdurman Nile Street Culverts.

Location: Omdurman, Sudan.

Client: Ministry of Planning, Khartoum State.

Main project features: 4 RC storm water paths box culverts of different widths crossing the Nile Street at Omdurman (28m wide). Total length of culverts = 125m along the street centreline.



2010 Study and design team leader (**Part-time** consultant).

Name of project: Almolid Square Overpass.

Location: Khartoum, Sudan.

Client: Sami Group.

Main project features: 313.4m long 14.38m wide overpass to solve intersection problem at Alhuria Street. Two approach ramps and 8 span composite bridge on RC concrete piers.



2010: Study and design team leader, Supervision project manager (**Part-time** consultant).

Name of project: Bayka Bridge

Location: Wad Madani.



Client: Ministry of Physical Planning, Aljazeera State.

Main project features: 45m single span steel-composite bridge suspended on a steel arch across the main canal of Aljazeera Agricultural Scheme.

2009 Team Leader for supervision (**Part-time** consultant).

Name of project: Testing and Evaluation of the Blue Nile Bridge.

Location: Khartoum, Sudan.

Client: Ministry of Infrastructures and Transportation, Khartoum State.

Main project features: 7 spans (750m long) steel truss bridge crossing the Blue Nile. Used by railways, vehicles and pedestrians.



2009 Study and planning team leader (**Part-time** consultant).

Name of project: Planning of 4 main towns at Northern State, Sudan.

Location: Northern State, Sudan.

Client: Ministry of Physical Planning, Northern State.

Main project features: Planning and replanning of 4 main towns. Planning includes: areal and land surveying, socioeconomic study; architectural planning, design of services.

Activities performed: Manage the design and planning works, lead the technical teams.

2008 - 2016 Director of the Project Implementation Unit for the Faculty of Engineering Sciences Development Project at Omdurman Islamic University; a project financed by the Islamic Development Bank (Jeddah).

2005 – 2008 Project Manager (**Full-time**, contractor).

Name of project: Aldamer Bridge

Location: Aldamer, Sudan.

Client: Dams Implementation Unit.

Main project features: Concrete Bridge (860m long, 20.5m wide) across the River Nile. Bored piles, concrete piers, super structure of wide flange prestressed concrete T- girders. Project Cost \$35,000,000.

Activities performed: Manage the construction team, communicate with the client and consultant, prepare procurements for the materials and equipment, nominate and employ the working staff.



2003: Structural Designer

Name of project: Nile Tower

Location: Client: Omdurman Islamic University.

Main project features: 15-stories commercial tower at Khartoum downtown.

Activities performed: Make the structural analysis and design. Check and approve the detailing drawings.

1997 - 2000: **Part-time Technical Consultant** for Khartoum Teaching Hospital, the greatest hospital in Sudan.

Activities performed: Lead the engineering unit staff in the hospital.

Responsible for effectiveness of the engineering utilities in the hospital.

Prepare for the establishing a new master plan for the hospital.

Contribute in establishment of the new renal section in the hospital.

Prepare and discuss periodical reports and make necessary presentations to the hospital Board of Directors.

1994: **Member of a consultant group** for the structural assessment and evaluation of four steel bridges owned by Sudan Railways Corporation; the project was funded by the World Bank.

Activities performed: Make the structural analysis of two bridges.

Design, manufacture, and operate an apparatus for measurement of dynamic and static deflections.

Record and evaluate the present situation of the bridges.

Prepare the relevant parts in the final report.

1981- 1991 Civil Engineer in the Structural Design Section, Ministry of Works, Khartoum.

Responsibilities and Achievements:

Prepare structural layout and conduct structural analysis design and prepare detailed specifications for assigned governmental buildings projects and infrastructure aspects.

Evaluate governmental buildings and structures for general condition assessment.

Prepare and discuss periodical report regarding conducted assigned works.

Acknowledged as one of the best design and evaluation engineers in my section.

Conducted Techno-Economical Feasibility Studies:

2015 Techno-Economical Feasibility Study for establishing Smart Water Meters Factory.

Location: Khartoum North, Sudan.

Client: Khartoum State Water Corporation Brink Engineering & Trading International – South Africa (BETI)

Main features: Private – Government factory for manufacturing 250 SWMs/day.

2015 Updating the Techno-Economical Feasibility Study for establishing Derudeb Cement factory.

Location: Red Sea State, Sudan.

Client: Kapa Company Ltd.

Main features: Private Cement Factory for producing 3500 Ton/day of Ordinary Portland Cement.

2014 Techno-Economical Feasibility Study for establishing Dates Packing and Dibis Factory.

Location: Khartoum North, Sudan.

Client: Alawaly Factory.

Main features: Private Factory for production of two tons of Dibis (dates syrup) and packed dated Factory.

Abroad Conferences Attended in the last 5 years:

- International Bridge Conference, IBC 2011, Pittsburgh, Pennsylvania, USA, 2011.
- International Conference on Engineering, UBI'2013, University Beira, Covilha, Portugal, Nov. 2013.
- 2nd International Conference on Innovations in Engineering and technology, ICCET'2014, Penang, Malaysia, Sep. 2014.
- ASCE Geotechnical and Structural Engineering Congress, Phoenix, Arizona USA Feb. 2016

Countries visited in the last 10 years:

Saudi Arabia (6 times), U. A. Emirates (3 times), USA (twice), Ethiopia (twice), China (4 times), Egypt (5 times), Qatar, Morocco, Portugal, Malaysia (3 times), Sweden, Turkey, Tanzania, and Germany,

Skills:

Skill	Skill level	Years of experience	Last used
Head of academic institutions	Expert	More than 10 years	1 month or less
University teaching	Expert	More than 10 years	1 month or less
Supervision of postgraduate studies	Expert	More than 10 years	1 month or less
Project management	Expert	More than 10 years	1 month or less
Project evaluation	Expert	More than 6 years	1 month or less
Structural analysis design of infrastructures projects	Expert	More than 10 years	1 month or less
Team Building, Leadership, Negotiation, Logistics, Analytical Thinking & Creative Problem Solving	Expert	More than 10 years	1 month or less
Technical and HR Management, Contractual and Corporate Negotiations	Expert	More than 10 years	1 month or less

Computer Skills:

Skill	Skill level	Years of experience	Last used
Programming with FORTRAN and BASIC languages	Expert	More than 10 years	1 month or less
Utilizing the following computer software: Microsoft: Word, Excel, and Power Point. MS Project, StaadPro, Osays.	Expert	More than 10 years	1 month or less

Languages:

	Writing	Speaking	Reading
Arabic	Very Good	Very Good	Very Good
English	Very Good	Very Good	Very Good

Postgraduate Supervision and Examinations:

Supervision:

More than 20 B.Sc. final year projects.

13 M.Sc. researches.

5 PhD researches.

External examiner for MSc and PhD students of:

Faculties of Engineering at:

University of Khartoum,

Sudan University for Science and Technology,

Karary University.

Building and Road research Institute, at University of Khartoum.

Areas of Interest:

1. Structural Engineering,
2. Bridge Engineering.
3. Computational structural analysis.
4. Soil-structure interaction.
5. Soil Mechanics and Foundation Engineering.
6. Applications of Fuzzy Analytical Hierarchy Process.
7. Applications of Neural Network Analysis in Flood Level Estimation.

Publications:

A. Research articles:

1. **Eltayeb H. Onsa Elsadig**, Anis Ben Messaoud, Ghassan M. T. Abdalla, Wael S. Al-Rashed, Abderrahim Lakhout, Ahmed H. A. Yassin. **“Opportunities for Adopting Sustainable Transportation Modes by University Commuters through Population survey and FAH Process”**. Jordan Journal of Civil Engineering, Volume 20, No. 1, 2026. <https://doi.org/10.14525/JJCE.v20i1.09>
2. **Eltayeb H. Onsa Elsadig**, Isam Mohammed Abdel-Magid, Abderrahim Lakhout, Ghassan M. T. Abdalla, and Ahmed Hassan A. Yaseen. **“Integrated Fuzzy-GIS Approach for Optimal Landfill Site Selection in Tabuk, Saudi Arabia, Supporting Sustainable Development Goals”**. Sustainability 2025, 17, 7935. <https://doi.org/10.3390/su17177935>
3. **Eltayeb H. Onsa Elsadig**, Tareg Abdalla Abdalla, Turki S. Alahmari, Dafalla A. El Turabi, and Ahmed H. A. Yassin. **“Analysis and Design of Anchored Sheet-pile Walls: Theoretical Comparisons, Experimental Validation, and Practical Procedures”**, Buildings 2025, 15, 3527. <https://doi.org/10.3390/buildings15193527>.
4. Lakhout, A.; Abdalla, Ghassan M. T.; **Eltayeb H. Onsa Elsadig**; Al-Rashed, W.S.; Abdel-Magid, I.; Ben Messaoud, A.; Yassin, A.H.A.; Sayed, O.A.; Elsayy, M.B.; Hayder, G. **“Sustainable**

5. *Tasneem I.M. Abdelmagid, Isam Abdel-Magid, **Eltayeb H. Onsa Elsadig**, et al*, “**Site Selection Optimization Using Fuzzy-GIS Integration for Wastewater Treatment Plant**”. *Limnological Review*, 2024, 24, 354–373. <https://doi.org/10.3390/limnolrev24030021>
6. ***Eltayeb H. Onsa Elsadig**, Muna M. Eltahir, Ghassan Abdalla, Gasim Hayder, et.al*, “**Application of Fuzzy Analytical Hierarchy Process for Revising OIU Main-Campus Masterplan to ensure Sustainable Environment**”, Springer Nature Switzerland AG 2023, https://doi.org/10.1007/978-3-031-26580-8_15, pp 83-90.
7. *A. H. Jagaba, S. R. M. Kutty, G. Hayder, **E. H. Onsa Elsadig**, I. M. Lawal, K. Sayed, S. Abubakar, I. Hassan, I. Umaru, I. Zubairu, M. A. Nasara, U. B. Soja*, “**Evaluation of the Physical, Chemical, Bacteriological and Trace Metals Concentrations in Different Brands of Packaged Drinking Water**”. *Engineering Letters*, 29:4, EL_29_4_28, Volume 29, Issue 4: December 2021.
8. *Hauwa Mohammed Mustaf, Gasim Hayder, and **Eltayeb H. Onsa Elsadig***, “**Bibliometric Analysis of Sediment Concentration Prediction Using Artificial Neural Network**”, Universiti Tenaga Nasional, Malaysia, Journal of Energy and Environment, JEE VOL. 12 (2), 2020.
9. *Omer Awad Ibnouf, and **Eltayeb H. Onsa***, “**Effects of temperature changes on voided slab integral abutment bridge**”, A paper accepted for publication in Journal of Engineering Sciences at Omdurman Islamic University, 2020.
10. *Abulgasim Y. Abusubayi and **Eltayeb H. Onsa***, “**Prediction of Future Concrete Compressive Strength under effect of Chlorides and Sulphates using MATLAB**”. A paper accepted for publication in Journal of Engineering Sciences at Omdurman Islamic University, 2020.
11. *Salih Muftah Hwida and **Eltayeb H. Onsa***, “**Assessment of Locally Produced and Imported Portland cement in Libya with Reference to European and Libyan Standards**”. *Taqnya Journal*, Vol.12 No. 1/2, February (2017), Libya, pp. 31- 54.
12. ***Eltayeb H. Onsa**, Salah Eldin Yousif Hassan, and Ahmed G. Mahmoud*, “**Applied Assessment Process for Priority of Bridge Maintenance in Sudan**” *Int'l Journal of Research in Chemical, Metallurgical and Civil Engg. (IJRCMCE)* Vol. 3, Issue 1 (2016).
13. ***Eltayeb H. Onsa***, “**Lateral Earth Pressure between two Parallel Rigid Retaining Walls**”, *International Journal of Scientific & Engineering Research*, Volume 6, Issue 8, pp. 73-78, August-(2015).
14. *Hashim M. Ahmed and **Eltayeb H. Onsa***, “**Effect of the Superstructure Construction Method on the Cost and Duration of Bridge Projects in Sudan**”, *Journal of Omdurman Islamic University*, Issue #26, March (2015).
15. *Taymour Z., **Eltayeb H. Onsa**, and Omer Abulzein*, “**Editing the Solar Radiation values during all Stages of Building Projects in Sudan**”, *International Journal of Scientific & Engineering Research*, Volume 6, Issue 7, July-(2015).

16. **Eltayeb H. Onsa** and Ahmed G. Mahmoud, “**Bridge Projects in Sudan in the Last Two Decades**”. Accepted for Publication at Journal of Omdurman Islamic University. Issue #27, Dec. (2015).
17. **Eltayeb H. Onsa**, et. al. “**Editing the Environmental Data in all Stages of Building Projects in the Hot-Dry Tropical Regions**”. Proceedings of the 40th IAHS World Congress in Housing, December 16-19, 2014, Madeira, Portugal.
18. **Eltayeb H. Onsa**, Anwar Adam Ahmed & Ahmed G. Mahmoud, “**Effect of Temperature Variation and Type of Embankment Soil on Integral Abutment Bridges in Sudan**”, Global Journal of Researches in Engineering: (E) Civil and Structural Engineering Volume 15 Issue 3 (Ver. 1.0), 2015.
19. **Eltayeb H. Onsa**, K. Habbani, and Mahmoud H. Onsa, “**Potential Sites for Hydropower Generation at Khor Langeib**”, Journal of Sudan Engineering Society”. Volume 60, No. 2, pp. 37-45, Sept., 2014.
20. Taymour Z., **Eltayeb H. Onsa**, and Omer A. Abulzein, “**Editing the Solar radiation data in all Stages of Building Projects**” Journal of Building and Roads Research Institute, University of Khartoum, Vol. 17, Dec. 2014, pp. 45-30.
21. **Eltayeb H. Onsa**, K. Habbani, and Anwar Adam Ahmed, “**Suggested Route for Conveying Water from Atbara River to the Red Sea Coast**”. Journal of Engineering Sciences at Omdurman Islamic University, Issue No. 7, December 2014.
22. Salah Eldeen Yousof and **Eltayeb H. Onsa**, “**Application of the Fuzzy Analytical Hierarchy Process in the Assessment of Priority of Bridge Maintenance**”, Proceedings of the 2nd International Conference on Innovations in Engineering and Technology (ICCET’2014), Penang, Malaysia, Sept. 2014.
23. **Eltayeb H. Onsa** and Hashim M. Ahmed, “**Application of Fuzzy AHP in Selection of Appropriate Superstructure Construction Method for Tuti - Bahri Bridge**”. Journal of Engineering Sciences at Omdurman Islamic University, Issue No. 7, December 2014.
24. Hashim M. Ahmed and **Eltayeb H. Onsa**, “**Effect of the Construction Method on the Cost and Duration of Bridge Projects in Sudan**”, International Conference on Engineering UBI2013, 27 – 29, Nov. 2013, Covilha, Portugal.
25. **Eltayeb H. Onsa**, et. al. “**Long-term Deflections in Balanced Cantilever Prestressed Concrete Bridges**” Journal of Engineering Sciences, Omdurman Islamic University, Issue #4, Dec. 2009.
26. **Eltayeb H. Onsa**, “**Towards Less Disastrous Results from Earthquakes in the Developing Countries**”, Journal of Engineering Sciences, Omdurman Islamic University, Vol. 1, 2004.

27. Under preparation research articles:

1. Experimental Testing of Anchored Sheet-pile walls.
2. Prediction of Earth Pressure Distribution between Two Parallel Retaining Walls.

28. Textbooks:

1. Plastic Analysis and Yield Line Theory, (under preparation)