

CURRICULUM VITAE

AHMAD SANA

Associate Professor

Department of Civil and Architectural Engineering
Sultan Qaboos University

December 2022



PERSONAL INFORMATION:

Mailing Address:

Department of Civil and Architectural Engineering
Sultan Qaboos University
P.O. Box 33, Al-Khoud
Muscat-123, Sultanate of Oman
968-2414-2524 (Office Phone)
968-2441-3345 (Home Phone); Mobile: (968) 99658036
sana@squ.edu.om
sana092@yahoo.com

Web Profiles

<https://www.researchgate.net/profile/Ahmad-Sana>
<https://scholar.google.com/citations?user=HekRdFoAAAAJ&hl=en&oi=ao>
<https://www.scopus.com/authid/detail.uri?authorId=6602667584>
<https://orcid.org/0000-0001-7576-1072>

EDUCATION AND EMPLOYMENT INFORMATION:

Education:

Apr. 1994-Feb. 1997: Ph.D., Civil Engineering, Tohoku University, Sendai, Japan
Jan. 1991-Aug. 1992: M.Eng. Hydraulic and Coastal Engineering, Asian Institute of Technology, Bangkok, Thailand
Feb. 1983-Jan. 1988: B.Sc., Civil Engineering, University of Engineering and Technology, Lahore, Pakistan
June. 1979-May 1981: Senior High School, Government College, Lahore, Pakistan

Relevant Graduate Courses:

Hydraulic and Coastal Engineering

Fluid Dynamics
Unsteady Flow in Open Channels
Advanced Fluid Mechanics
Coastal and Offshore Engineering
Tidal and Estuarine Hydraulics
Coastal Sedimentation
Fluid Mechanics Laboratory
Selected topic: Mathematics for Hydraulic and Coastal Engineers

Water Resources Engineering

Groundwater Engineering
Design of Hydraulic Structures
River Engineering

Continuing Education:

“Sort Course on MOHID Water Modeling System”, Sultan Qaboos University, Nov. 2015.
“Workshop on using Latex”, Sultan Qaboos University, Nov. 2015.
“Workshop on Introduction to CDIO”, Sultan Qaboos University, May, 2016.
“Workshop on Numerical Optimization Software”, Sultan Qaboos University, January, 2017.
“Workshop on Creating Significant Learning Experiences”, Sultan Qaboos University, February, 2017.
“Workshop on GIS and Satellite Image Analysis”, Sultan Qaboos University, February, 2017.

“Workshop on Alternative Instructional Strategies”, Sultan Qaboos University, May, 2017.
 “Workshop on Critical Thinking Skills for the 21st Century”, Sultan Qaboos University, May, 2017.

Employment History:

May 2010-Present Associate Professor, Department of Civil and Architectural Engineering
Sultan Qaboos University, Oman

Aug. 2002- May 2010 Assistant Professor, Department of Civil and Architectural Engineering
Sultan Qaboos University, Oman

Jan. 2001-Aug.2002 Lecturer, Department of Civil and Architectural Engineering
Sultan Qaboos University, Oman

May 2000-Jan. 2001 Research Fellow, School of Civil and Environmental Engineering
Nanyang Technological University, Singapore

Dec. 1999-Apr. 2000 Instructor, Faculty of Natural Resources and Environmental Studies
University of Northern British Columbia, Canada

Oct. 1998-Sep. 1999 Postdoctoral Research Associate, Department of Civil Engineering,
Tohoku University, Japan

Apr. 1994-Mar. 1997 Research Associate, Department of Civil Engineering,
Tohoku University, Japan

Apr. 1993-Mar. 1994 Research Associate, School of Civil Engineering,
Asian Institute of Technology, Thailand

Apr. 1988-Mar. 1993 Lecturer, Department of Civil Engineering
University of Engineering and Technology, Lahore, Pakistan

SCHOLARSHIPS AND FELLOWSHIPS:

Visiting Research fellowship for 45 days by Tohoku University, Japan, 2022
 Visiting Research fellowship for one month by Tohoku University, Japan, 2015
 Visiting Research fellowship for one month by Tohoku University, Japan, 2010
 Visiting Researcher Fellowship for three months at Univ. of Engineering and Technology, Taxila, Pakistan,
 2008
 Postdoctoral fellowship for two months by Japan Society for the Promotion of Science (JSPS), 2007
 Visiting Research fellowship for one month by Tohoku University, Japan, 2006
 Visiting Researcher Fellowship for three months at Univ. of Engineering and Technology, Taxila, Pakistan,
 2005
 Visiting Researcher Fellowship for three months at Univ. of Engineering and Technology, Taxila, Pakistan,
 2004
 Postdoctoral fellowship for three months by Japan Society for the Promotion of Science (JSPS), 2003
 Young Engineer award by The Association of Researchers in Tohoku Region, Japan, 1995
 Merit Scholarship at Asian Institute of Technology, Bangkok by the Government of Denmark, 1991-1992.
 Merit Scholarship at the University of Engineering and Technology, Lahore, 1984-1985.

CONSULTANCY EXPERIENCE:

Jan. 1989-Dec.1990 Part-time Design Engineer, Multi-dimensional Consultants, Lahore, Pakistan.

Design of multi-storey buildings, Surveying, Field investigations for water resources development.

RESEARCH INTERESTS

Turbulence modeling of wave boundary layers
 Water quality measurement and modeling in the sea
 Numerical Modeling of coastal erosion and shoreline change
 Measurement and modeling of seawater intrusion into coastal aquifers
 Sediment transport in coastal environments
 Experimental investigation of rough boundary layers
 Analysis and design of water resources systems

TEACHING

Courses Taught:

*** Newly Developed Courses**

Undergraduate:

Engineering Drawing
 Engineering Mechanics
 Fluid Mechanics
 Hydraulics
 Coastal Engineering*
 Civil Engineering Design Project
 Water Resources Engineering
 Engineering Hydrology
 Hydraulic Structures

Graduate:

Surface Water Hydrology*
 Municipal Distribution and Collection Systems*
 Fluvial Hydraulics*
 Mathematical Hydrology*
 Groundwater Hydraulics*
 Water Resources Planning and Management*
 Advanced Engineering Statistics*
 Advanced Engineering Mathematics*
 Contaminant Transport Processes*

Project Supervision:

B. Sc. (Final Year Projects):	17
M. Sc.:	16
Ph.D. :	3

SERVICE:

Committees:

Department of Civil and Architectural Engineering:

ABET Accreditation Committee (Civil Engineering)
Role: Coordinator (2014-2020)

ABET Accreditation Committee
Role: Member (2010-2014), Consultant (2020-present)

Development Committee
Role: Member (2008-2010)

Postgraduate Studies and Research Committee
Role: Member (2002-2007)

Strategic Planning Committee
Role: Member (2002-2009), Coordinator (2005-2009)

Staff-Student Liaison Committee
Role: Member (2002-2003)

Textbooks Orders/Library Liaison
Role: Coordinator (2002-2013)

Civil and Architectural Engineering Society
Role: Advisor (2003-2005)

Undergraduate advisor
Role: Advisor (2001-Present)

College of Engineering:

College Accreditation Committee
Role: Departmental Representative (2014-present)

Strategic Planning and Development Committee
Role: Departmental Representative (2004-2005)

Ad hoc Committee on International Journal of Engineering and Technology
Role: Member (2002-2003)

University:

Library Executive Committee
Role: College Representative (2012-2014)

Agricultural Engineering Program
Role: College Representative (2010-Present)

Water Research Center
Role: Program Coordinator, Surface Water (2003-Present)

High Performance Computing Facility
Role: Member, Steering Committee (2010-Present)

Ad hoc Committee for the Proposal of Water Research Center
Role: College Representative (2002-2003)

Ad hoc Committee for the Proposal of Marine Engineering Program
Role: College Representative (2002-2004)

Ad hoc Review Committee for the Proposal of Marine Transport Program
Role: College Representative (2004-2005)

Ad hoc Committee for the Proposal of a new Research Vessel
Role: College Representative (2011-2012)

Ad hoc Committee for the College of Agricultural and Marine Sciences Building Problems
Role: College Representative (2011-2014)

International Professional Service and Honor Societies:

Member, Nominating Committee (NC 2017) for International Association for Hydro-Environment Engineering and Research Council Elections 2017

Member, Executive Committee, International Association for Hydro-Environment Engineering and Research (Asia-Pacific Division)

Member, American Society of Civil Engineers (ASCE), International Association for Hydro-Environment Engineering and Research.

Life-Member, Pakistan Engineering Council.

Reviewer, Ocean Engineering (Elsevier), Journal of Hydraulic Engineering (ASCE), Water and Environment Journal, International Journal for Numerical Methods in Fluids (Wiley), Coastal Engineering Journal (World Scientific), Proceedings of the Institution of Civil Engineers-Water Management

Former member, Japan Society for Civil Engineers, Tohoku Researchers Association for Hydraulic Engineering.

Regional/Local Professional Service:

Session Chair, International Conference on Advances in Civil and Construction Engineering (ACCE 2022), Lahore, Pakistan, December 1-2, 2022.

Session Chair, 12th International Conference on Geotechnique, Construction Materials and Environment (GEOMATE 2022), Bangkok, Thailand, November 22-24, 2022 (online session).

Member, Scientific Committee, 14th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2022), Tehran, Iran.

Chair, International Scientific Committee, International Conference on Estuaries and Coasts (ICEC 2015), Sultan Qaboos University, Muscat, Oman, November 2015.

Secretary, Local Organizing Committee, International Conference on Estuaries and Coasts (ICEC 2015), Sultan Qaboos University, Muscat, Oman, November 2015

Session Chair, 11th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2014), Tehran, Iran.

Session Chair, 19th Congress of The Asia and Pacific Division of International Association for Hydro-Environment Engineering and Research (IAHR-APD 2014), Hanoi, Vietnam.

Session Chair, International Conference on Desalination, Environment and marine Outfall Systems (ICDEMOS 2014), Muscat, Oman.

Session Chair, International Civil and Infrastructure Engineering Conference (InCIEC-2013), Kuching, Malaysia.

Chair, Scientific Committee, International Conference on Coastal Zones and Management (Arabian Coast 2010), Sultan Qaboos University, November 2010.

Chair, Local Arrangement Committee, Renewable Energy Development Oman Forum, REDOF' 09, Sultan Qaboos University, November 22-23, 2009.

Instructor, Short Course on Flood Management, College of Engineering, Sultan Qaboos University, April 27-30, 2008.

Instructor, Workshop on Advanced Modeling of Soil and Groundwater Systems, College of Agricultural and Marine Sciences, Sultan Qaboos University, May 15-19, 2004.

Member, Technical Committee, International Conference on Wastewater Management and its Effect on the Environment in Hot and Arid Countries, Muscat, Sultanate of Oman, October 12-14, 2002.

Coordinator and Instructor for a short course on "Computer-Aided Design of Coastal Structures," Department of Civil and Architectural Engineering, Sultan Qaboos University, June 24-27, 2001.

SCHOLARLY ACHIEVEMENTS:

Book Contributions

1. Baawain M. S., Al-Sabahi J. N., Al-Wardy M. M., **Sana A**, Chitrakar, P. and Al-Yaqoobi A. H. (2019) Oil and chemical spills, In Encyclopedia of Environmental Health, 2nd Ed., (4) 750-757. Burlington: Elsevier, (SENSE Rank: B)
2. Abbasi, I. A., Kakar, D. M., Khan, M. A., **Sana, A.** 2016. Mud volcanoes in an active fore-arc setting: A case study from the Makran Coastal belt, SW Pakistan. In Tsunami and Earthquakes in Coastal Environments: Significance and Restoration (eds Vicente Santiago-Fandiño, Tanaka H, Dr. Spiske M.). Springer's Coastal Research Library 14, 79-95. DOI: 10.1007/978-3-319-28528-3_6, B-Publisher (SENSE Rank: B).
3. **Sana A.** (2015) Hydrodynamic and Thermal Dispersion Modeling of the Effluent in a Coastal Channel. In: M. Baawain, B.S. Choudri, M. Ahmed and A. Purnama (Eds.) Recent Progress in Desalination, Environmental and Marine Outfall System, Springer, pp. 269–283, B-Publisher (SENSE Rank: B).
4. Al-Hatrushi, S., Kwarteng, A., **Sana, A.**, Al-Belushi, A., McLachlan, A., and Hamed, K. (Eds.) (2014), Coastal Erosion in Al-Batinah, Sultanate of Oman, Sultan Qaboos University Printing Press, Oman (ISBN 978-99969-0-300-7).
5. Baawain M. S., **Sana A**, Al-Sabahi J. N., Al-Wardy M. M. and Al-Yaqoobi A. H. (2011) Oil and chemical spills. In: Nriagu JO (ed.) Encyclopedia of Environmental Health, volume 4, pp. 231–239 Burlington: Elsevier, B-Publisher (SENSE Rank: B).
6. Al-Hatrushi, S., Kwarteng, A., McLachlan, A., Al-Belushi, A., **Sana, A.** and Hamed, K. (Eds.) (2009), Coastal Erosion and Groundwater, Sultan Qaboos University Printing Press, Oman.
7. Tanaka, H. and **Sana, A.** (1995), "Numerical study on transition to turbulence in a wave boundary layer", In Sediment Transport Mechanisms in Coastal Environments and Rivers (M. Belorgey, R.D. Rajaona and J.F.A. Sleath (Eds.)), World Scientific, pp.14-25, D-Publisher (SENSE Rank: D).

Clarivate Analytics and/or SJR Listed Journal Publications with Quartile Rank and Impact Factor

1. Akhtar, J., **Sana, A.**, Tauseef, S.M. and Tanaka, H. (2022). Numerical Modeling of Seawater Intrusion in Wadi Al-Jizi Coastal Aquifer in the Sultanate of Oman. *Hydrology*, <https://doi.org/10.3390/hydrology9120211>. Q2: CiteScore 3.6.
2. Juma Al Balushi, N., Nayak, J.K., Rahman, S., **Sana, A.**, Al-Mamun, A. A. (2022). Comprehensive Study on Air-Cathode Limitations and Its Mitigation Strategies in Microbial Desalination Cell—A Review. *Energies*, 15, 7459. <https://doi.org/10.3390/en15207459>. Q3: 3.252
3. Tanaka, H.; Tinh, N.X.; **Sana, A.** (2022). Tsunami Damping due to Bottom Friction Considering Flow Regime Transition and Depth-Limitation in a Boundary Layer. *Journal of Marine Science and Engineering*, 8(9), 700 (15pp). <https://doi.org/10.3390/jmse8090700>. Q2: 2.033
4. Akhtar, J., **Sana, A.** and Tauseef, S.M. (2022). Using MODFLOW to investigate the effect of persistent water deficit in Al-Jizi coastal aquifer, Sultanate of Oman. *Arabian Journal of Geosciences*. <https://doi.org/10.1007/s12517-022-10717-y>. Q3: 1.827
5. Siddiqi, S. A., Al-Mamun, A., Baawain, M.S. & **Sana, A.** (2022). A critical review of the recently developed laboratory-scale municipal solid waste landfill leachate treatment technologies. *Sustainable Energy Technologies and Assessments*. 52, 102011, <https://doi.org/10.1016/j.seta.2022.102011>. Q2: 5.353
6. Al-Sulaimi, I. N., Nayak, J. K., Alhimali, H., **Sana, A.** & Al-Mamun, A., (2022). Effect of Volatile Fatty Acids Accumulation on Biogas Production by Sludge-Feeding Thermophilic Anaerobic Digester and Predicting Process Parameters. *Fermentation*. 8, 4, 184, Q2: 5.123
7. Siddiqi, S. A., Al-Mamun, A., **Sana, A.**, Baawain, M. S. & Choudhury, M. R., (2022). Characterization and pollution potential of leachate from urban landfills during dry and wet periods in arid regions. *Water Supply*. 22, 3, p. 3462-3483, <https://doi.org/10.2166/ws.2021.392>. Q4: 1.768
8. Akhtar, J., **Sana, A.**, Tauseef, S.M., Chellaiah, G., Kaliyaperumal, P., Sarkar, H., Ayyamperumal, R. (2022). Evaluating the groundwater potential of Wadi Al-Jizi, Sultanate of Oman, by integrating remote sensing and GIS techniques. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-021-17848-x>. Q2: 4.223
9. Al-Nasri, A. Gunawardhana, L., Al-Rawas, G., Baawain, M. & **Sana, A.** (2021). Multi-layer groundwater flow simulation in Al-Khoud lower catchment in Oman. *Journal of Applied Water Engineering and Research*. <https://doi.org/10.1080/23249676.2021.1982027>. CiteScore: 1.8
10. Gunawardhana, L.N., Al-Harhi, F., **Sana, A.**, Baawain, M (2021). Analytical and numerical analysis of constant-rate pumping test data considering aquifer boundary effect. *Environ Earth Sci.*, 80, 543 (13pp). <https://doi.org/10.1007/s12665-021-09833-x>. Q2:2.784
11. Siddiqi, S. A., Al-Mamun, A., Baawain, M. S. and **Sana, A.** (2021). Groundwater contamination in the Gulf Cooperation Council (GCC) countries: a review, *Environmental Science and Pollution Research*, <https://doi.org/10.1007/s11356-021-13111-5>, ISSN 0944-1344. Q2: 3.056
12. Al Naamani, A. and **Sana, A.** (2021) Operational and technical performance of a water distribution network in Oman. *Water Supply*, 21(8), 4593–4607. <https://doi.org/10.2166/ws.2021.203>, Q4: 1.768
13. Rahman, S., Jafary, T., Al-Mamun, A., Baawain, M. S., Choudhury, M. R., Alhaimali, H., Siddiqi, S.A., Dhar, B.R., **Sana, A.**, Lam, S.S., Aghbashlo, M., Tabatabaei, M. (2021). Towards upscaling microbial desalination cell technology: A comprehensive review on current challenges and future prospects, *Journal of Cleaner Production*, ISSN 0959-6526, 288, 125597(23pp). Q1: 11.072.
14. Tanaka, H.; Tinh, N.X.; **Sana, A.** (2020). Transitional Behavior of Flow Regime in Shoaling Tsunami Boundary Layers. *Journal of Marine Science and Engineering*, 8(9), 700 (15pp), <https://doi.org/10.3390/jmse8090700>. Q2: 2.033
15. Tanaka, H.; Tinh, N.X.; **Sana, A.** (2020). Improvement of the Full-Range Equation for Wave Boundary Layer Thickness. *Journal of Marine Science and Engineering*, 8, 573(14pp), doi:10.3390/jmse8080573. Q2: 2.033
16. AL-Hashmi, S. Gunawardhana, L., **Sana, A.** and Baawain, M. (2020). Application of groundwater flow model in assessing aquifer layers interaction in arid catchment area, *International Journal of Environmental Science and Technology*, 17, 4577–4588, Q2: 2.54.
17. Chitrakar, P. , Baawain, M., **Sana, A.** and Al-Mamun, A. (2020). Multivariate statistical technique in the assessment of coastal water quality of Oman, *Journal of Environmental Engineering and Science*, ISSN 1496-2551 | E-ISSN 1496-256X, 15(3), 141-153. Cite Score Q3: 1.79.
18. AL-Hashmi, S. Gunawardhana, L., **Sana, A.** and Baawain, M. (2020). A Numerical Groundwater Flow Model of Wadi Samail Catchment using MODFLOW Software, *International Journal of GEOMATE*, 18(66), 85-91. SJR Q3: 0.302.

19. Chitrakar, P., Baawain, M., **Sana, A.** and Al-Mamun, A. (2020). Hydrodynamic Measurements and Modeling in the Coastal Regions of Northern Oman, *Journal of Ocean Engineering and Marine Energy*, Springer Inc. , 54(3):317–348. 0.97(SJR).
20. Baawain M, **Sana A.**, Al-Yahyai R and Amoatey P. (2019). Sustainable reuse options of treated effluents: a case study from Muscat, Oman, *Journal of Environmental Engineering and Science*, ICE, UK, 14(4): 195–202, <https://doi.org/10.1680/jenes.19.00019>. Cite Score Q3: 1.79.
21. Chitrakar, P. , Baawain, M., **Sana, A.** and Al-Mamun, A. (2019), Current Status of Marine Pollution and Mitigation Strategies in Arid Region: A Detailed Review, *Ocean Science Journal*, 54(3): 317-348, DOI: <https://doi.org/10.1007/s12601-019-0027-5>, Q4, 0.726.
22. Al-Busaidi, Z, Baawain, M, **Sana, A.**, Ebrahimi, A. and Omidvarborna, H, (2019). Sustainable risk-based analysis towards remediation of an aquifer impacted by crude oil spills, *Journal of Environmental Management* 247 (2019) 333–341, DOI: doi.org/10.1016/j.jenvman.2019.05.121, Q1, 5.647.
23. **Sana, A.**, 2017. Teaching Fundamental Concepts of Coastal Engineering Using Excel Spreadsheet, *Computer Applications in Engineering Education*, Wiley Inc., 25(2): 304-310, Q4, 0.856.
24. Kwarteng, A.Y., Al-Hatrushi, S.M., Illenberger, W.K., McLachlan A., **Sana, A.**, Al-Buloushi, A. S., Hamed, K. H. (2016), Beach erosion along Al Batinah coast, Sultanate of Oman, *Arabian Journal of Geosciences*, 9: 85. doi:10.1007/s12517-015-2186-8, Q4, 1.327.
25. Chitrakar, P. and **Sana, A.** (2015), Groundwater Flow and Solute Transport Simulation in Eastern Al Batinah Coastal Plain, Oman: Case Study, *Journal of Hydrologic Engineering*, ASCE, DOI: 10.1061/(ASCE)HE.1943-5584.0001284, Q3, 1.594.
26. **Sana, A.** and Tanaka, H. (2010), “Two-Equation turbulence modeling of an oscillatory boundary layer under steep pressure gradient”, *Canadian Journal of Civil Engineering*, Vol.37, No.4, 648-656, Q4, 0.985.
27. Ghumman, A. R., **Sana, A.** and Tanaka, H. (2009), “Grid dependence of k-epsilon model for oscillatory boundary layers”, *Water Management*, Vol.162 (WM6), 371-377, Q4, 0.965.
28. **Sana, A.**, Ghumman, A. R. and Tanaka, H. (2009), “Modeling of a rough-wall oscillatory boundary layer using two-equation turbulence models”, *Journal of Hydraulic Engineering (ASCE)*, Vol.135, No.1, 60-65, Q2, 1.993.
29. Ranjan, S.P., Kazama, S., Sawamoto, M., **Sana, A.** (2009), “Global scale evaluation of coastal fresh groundwater resources”, *Ocean and Coastal Management*, Elsevier, Vol.52, 197-206, Q2, 2.482.
30. Suntoyo, Tanaka, H. and **Sana, A.** (2008), “Characteristics of turbulent boundary layers over a rough bed under saw-tooth waves and its application to sediment transport”, *Coastal Engineering*, Elsevier, Vol.55, No.12, 1102-1112, Q1, 4.119.
31. **Sana, A.** and Tanaka, H. (2007), “Full-range equation for wave boundary layer thickness”, *Coastal Engineering*, Elsevier , Vol.54, 639-642, Q1, 4.119.
32. **Sana, A.**, Ghumman, A. R. and Tanaka, H. (2007), “Modification of the damping function in the k-e model to analyze oscillatory boundary layers”, *Ocean Engineering*, Vol.34, No.2, 320-326, Q1, 3.068.
33. **Sana, A.**, Tanaka, H., Yamaji, H. and Kawamura, I. (2006), “Hydrodynamic behavior of asymmetric oscillatory boundary layers at low Reynolds numbers”, *Journal of Hydraulic Engineering (ASCE)*, Vol.132, No.10, 1086-1096, Q2, 1.993.
34. **Sana, A.** and Shuy, E. B. (2002), “Two-Equation turbulence models for smooth oscillatory boundary layers”, *Journal of Waterway, Port, Coastal and Ocean Engineering (ASCE)*, Vol.128, No.1, 38-45, Q3, 1.325.
35. **Sana, A.** and Tanaka, H. (2000), “Review of k-e model to analyze oscillatory boundary layers”, *Journal of Hydraulic Engineering (ASCE)*, Vol. 126, No.9, 701-710, Q2, 1.993.
36. Tanaka, H., **Sana, A.**, Kawamura, I. and Yamaji, H. (1999), “Depth-limited oscillatory boundary layers on a rough bottom”, *Coastal Engineering Journal*, Vol.41, No.1, 85-105, Q2, 2.032.
37. Tanaka, H., Yamaji, H., **Sana, A.** and Shuto, N. (1998), “A generation method of asymmetric oscillatory motion simulating cnoidal waves”, *Coastal Engineering Journal*, Vol.40, No.3, 291-306, Q2, 2.032.
38. **Sana, A.** and Tanaka, H., (1997), “Improvement of the full-range equation for bottom friction under three-dimensional wave-current combined motion”, *Coastal Engineering*, Vol.31, Elsevier Science, pp.217-229, Q1, 4.119.

Other Journal Publications

1. Alwahaibi, B. M., Al-Mamun, A., Baawain, M. S., **Sana, A.** (2020), “Biological Efficiency and Control of a Membrane Bioreactor and Conventional Activated Sludge Process for Treating Municipal Wastewater”, *Journal of Agricultural and Marine Sciences* 2020, 25(1): 41–49, DOI: 10.24200/jams.vol24iss1pp41-49.

2. **Sana, A.**, Baawain, M.S., Al-Sabti, A. (2013), "Feasibility Study of Using Treated Wastewater to Mitigate Seawater Intrusion along Northern Coast of Oman", *International Journal of Water Resources and Arid Environments* 3(2): 56-63, ISSN 2079-7079.
3. Suntoyo, Tanaka, H. and **Sana, A.** (2007), "Turbulence models for rough turbulent boundary layers under asymmetric waves", *Tohoku Journal of Natural Disaster Science*, Tohoku University, Japan, Vol.43, 247-252.
4. Suntoyo, Tanaka, H., **Sana, A.** and Yamaji, H. (2006), "Characteristics of turbulent boundary layer over a rough bed under cnoidal wave motion", *Annual Journal of Hydraulic Engineering (JSCE)*, Vol.50, 121-126.
5. Tanaka, H., **Sana, A.**, Yamaji, H. and Samad, M.A. (1998), "Experimental and numerical investigation on asymmetric oscillatory boundary layers", *Journal of Hydrosience and Hydraulic Engineering*, Vol.16, No.1, 117-126.
6. Tanaka, H., **Sana, A.** and Kawamura, I (1998), "Theoretical and experimental study on quasi-steady boundary layer under wave motion", *Journal of Hydraulic, Coastal and Environmental Engineering, JSCE*, Vol.593/II-43, pp.155-164 (in Japanese).
7. **Sana, A.**, Tanaka, H. and Yamaji, H. (1997), "Transitional behavior of asymmetric oscillatory boundary layers", *Annual Journal of Hydraulic Engineering (JSCE)*, Vol.41, pp.651-656.
8. Tanaka, H., Yamaji, H., **Sana, A.** and Shuto, N. (1997) "A new generation method of asymmetric oscillatory flow", *Journal of Hydraulic, Coastal and Environmental Engineering, JSCE*, Vol.565/II-39, pp.111-118 (in Japanese).
9. Tanaka, H. and **Sana, A.** (1996) "Bottom shear stress prediction for three dimensional wave-current boundary layer", *Journal of Hydraulic, Coastal and Environmental Engineering, JSCE*, Vol.533/No.II-34, pp.273-277 (in Japanese).
10. **Sana, A.** and Tanaka, H. (1996) "The performance of low-Reynolds number k-e model to analyze an oscillatory boundary layer", *Journal of Hydrosience and Hydraulic Engineering*, Vol.40, pp.779-785 (in Japanese).
11. Tanaka, H. and **Sana, A.** (1994) "Application of the low-Reynolds number k-e model to an oscillatory flow", *Journal Hydrosience and Hydraulic Engineering, JSCE*, Vol.38, pp.481-486 (in Japanese).

Conference Proceedings

1. **Sana, A.** and Al-Malki, S. (2022). Development of Regional IDF Relationships for Oman. *International Conference on Advances in Civil and Construction Engineering (ACCE 2022)*, Lahore, Pakistan, December 1-2, 2022
2. **Sana, A.** (2022). Numerical Modeling of Oscillatory Boundary Layers using Two-Equation Models. The 10th International Seminar on Ocean and Coastal Engineering, Environmental and Natural Disaster Management, Surabaya, Indonesia, November 29, 2022 (keynote lecture)
3. Akhtar, J., **Sana, A.**, Tauseef, S.M. and Javed, S. (2022). Modeling the Effect of Climate Changes on Coastal Aquifers in Oman. *Proc. 12th International Conf. – GEOMATE 2022 Geotechnique, Construction Materials and Environment*, Bangkok, Thailand, November 22-24, 2022.
4. Akhtar, J., **Sana, A.** and Tauseef, S.M. (2022), Application of numerical modelling to predict the groundwater heads in coastal aquifers of Sultanate of Oman, In *International Conference on Water Resources Management and Sustainability: Solutions for Arid Regions* (Ed. Sherif, M., Faiz, M. A. and Sefelnasr, A.), March 22-24, 2022, Dubai, UAE, pp. 164-167.
5. Bait Kulaib, G., Al-Mamari, K., Al-Mahdori, M., **Sana, A.** (2022), Statistical analysis of flow for selected rivers in Pakistan, In *International Conference on Water Resources Management and Sustainability: Solutions for Arid Regions* (Ed. Sherif, M., Faiz, M. A. and Sefelnasr, A.), March 22-24, 2022, Dubai, UAE, pp.93-97.
6. **Sana, A.** (2021) Two-equation turbulence modelling of open channels, 24th International Congress on Modelling and Simulation 05 - 10 Dec 2021, Sydney, Australia.
7. Akhtar, J., **Sana, A.** and Tauseef, S.M. (2021) Groundwater flow modelling of Al-Jizzi aquifer, Oman, 24th International Congress on Modelling and Simulation 05 - 10 Dec 2021, Sydney, Australia.
8. **Sana, A.** and Chitrakar, P. (2020) Measurement of Hydrodynamic Parameters and Seawater Quality along the Coast of Oman, 8th International Seminar on Ocean and Coastal Engineering, Environmental and Natural Disaster Management (ISOCEEN2020), October 27-28, 2020, ITS, Indonesia (keynote lecture).
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