

CURRICULUM VITAE

AHMAD SANA

Associate Professor

Department of Civil and Architectural Engineering
Sultan Qaboos University

February 2018

PERSONAL INFORMATION:

Mailing Address:

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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 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.

CONSULTING 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*

Project Supervision:

B. Sc. (Final Year Projects):	15
M. Sc.:	14
Ph.D. :	3

SERVICE:

Committees:

Department of Civil and Architectural Engineering:

ABET Accreditation Committee
Role: Coordinator (2014-present)

ABET Accreditation Committee
Role: Member (2010-2014)

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:

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. 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
2. **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.
3. 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).
4. 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.
5. 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.
6. 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.

Refereed Journal Papers

1. **Sana, A.**, 2017. Teaching Fundamental Concepts of Coastal Engineering Using Excel Spreadsheet, Computer Applications in Engineering Education, Wiley Inc., 25(2): 304-310.
2. 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 J Geosciences, 9: 85. doi:10.1007/s12517-015-2186-8
3. 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
4. **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.
5. **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.
6. 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.
7. **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.
8. 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.
9. 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.
10. **Sana, A.** and Tanaka, H. (2007), "Full-range equation for wave boundary layer thickness", Coastal Engineering, Elsevier, Vol.54, 639-642.
11. **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.
12. 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.
13. 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.
14. **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.
15. **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.
16. **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.
17. 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.
18. 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.
19. Tanaka, H., **Sana, A.**, Yamaji, H. and Samad, M.A. (1998), "Experimental and numerical investigation on asymmetric oscillatory boundary layers", Journal of Hydro-science and Hydraulic Engineering, Vol.16, No.1, 117-126.
20. 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).
21. **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.
22. **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.

23. 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).
24. 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).
25. **Sana, A.** and Tanaka, H. (1996) “The performance of low-Reynolds number k-e model to analyze an oscillatory boundary layer”, Journal Hydroscience and Hydraulic Engineering, Vol.40, pp.779-785 (in Japanese).
26. Tanaka, H. and **Sana, A.** (1994) “Application of the low-Reynolds number k-e model to an oscillatory flow”, Journal Hydroscience and Hydraulic Engineering, JSCE, Vol.38, pp.481-486 (in Japanese).

Refereed Conference Proceedings

1. **Sana, A.** and Tanaka, H. (2018), Numerical Modeling of a Turbulent Bottom Boundary Layer under Solitary Waves on a Smooth Surface, 36th International Conference on Coastal Engineering (ICCE 2018), U.S.A.(accepted).
2. Chitrakar, P., **Sana, A.** and Baawain, M. (2017), Hydrodynamic Modeling of Sea of Oman, 37th IAHR World Congress, 13-18 August, 2017, Kuala Lumpur, Malaysia.
3. Chitrakar, P., **Sana, A.** and Baawain, M. (2016), “The Hydrodynamics of Sea of Oman and Arabian Gulf”, Arabian Coast 2016 Conference, Dubai , UAE, 20-22 Nov. 2016, Book of Abstracts (USB flash disk).
4. **Sana, A.** (2016), “Numerical Modelling of Wave-Current Combined Motion using Two-Equation Turbulence Models”, Proceedings of The 12th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2016), Tehran, Iran, 31 Oct- 2 Nov. 2016, pp.37-38 (Book of Abstracts).
5. **Sana, A.** (2014), “Modeling of Boundary Layers under Wave-Current Combined Motion”, Proceedings of The 11th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2014), Tehran, Iran, 24-26 Nov. 2014, pp.95-102.
6. **Sana, A.** and Baawain, M. (2014), “Groundwater Modeling of a Coastal Plain Aquifer in Southern Oman”, 19th Congress of The Asia and Pacific Division of International Association for Hydro-Environment Engineering and Research (IAHR-APD 2014), Hanoi, Vietnam.
7. **Sana, A.** and Tanaka, H. (2014), “Modification of a Turbulence Model to Analyze Oscillatory Boundary Layers on a rough bottom”, Proceedings of 34th International Conference on Coastal Engineering, Seoul, South Korea.
8. **Sana, A.** (2014), “Hydrodynamic and Thermal Dispersion Modeling of the Effluent in a Coastal Channel”, International Conference on Desalination, Environment and marine Outfall Systems (ICDEMOS 2014), Muscat, Oman.
9. **Sana, A.** (2013), “Enhancing Water Resources and Coastal Engineering Curricula Using Visual Basic Programs in MS-Excel”, International Civil and Infrastructure Engineering Conference (InCIEC-2013), Kuching, Malaysia, pp. 196-199.
10. **Sana, A.**, Baawain, M. and Al-Sabti, A. (2013), “Feasibility Study of Using Treated Wastewater to Mitigate Seawater Intrusion along Northern Coast of Oman”, 5th International Conference on Water Resources and Arid Environments 2013, Riyadh, K.S.A.
11. **Sana, A.** and Tanaka, H. (2012), “Using a Two-Equation Turbulence Model to Study Irregular Wave Bottom Boundary Layers”, Proceedings of The 10th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2012), Tehran, Iran, 19-21 Nov. 2012, pp.95-102.
12. **Sana, A.** and Baawain, M. (2012), “Verification of a turbulence model for rough oscillatory boundary layers”, Proceedings of 10th International Congress on Advances in Civil Engineering (ACE 2012), Ankara, Turkey.
13. **Sana, A.**, and Baawain, M. (2011), “Assessment of seawater quality along northern coast of Oman”, Proceedings of 6th International Conference on Asian and Pacific and Coasts (APAC 2011), Hong Kong, pp.2002-2009.
14. **Sana, A.** (2010), “Prediction of transition in wave boundary layers by $k-\varepsilon$ Model”, Proceedings of the 15th Physics of Estuaries and Coastal Seas (PECS) conference, Colombo, Sri Lanka, 14–17 September 2010, pp.194-197.

15. **Sana, A.**, Al-Yaqoubi, A. and Tanaka, H. (2009), "Seawater quality in Gulf of Oman", Proceedings of 3rd International Conference on Estuaries and Coasts (ICEC 2009), Sendai, Japan, pp.167-174.
16. **Sana, A.**, Tanaka, H. and Suntoyo (2008), "Turbulence modeling of wave boundary layers on a rough bottom", Proceedings of 31st International Conference on Coastal Engineering, Hamburg, Germany, Vol. 2, pp.1572-1582.
17. **Sana, A.** and Al-Shibli, S. (2006), "Numerical modeling of seawater intrusion into coastal aquifers in Sultanate of Oman", Regional Conference on Groundwater Protection, Tripoli, Libya, 2006.
18. **Sana, A.**, Al-Jamrah, A., Claereboudt, M., Al-Kindi, S., Tanaka, H. and Kwarteng, A. (2006), "Measurement of Water Quality Parameters in the Gulf of Oman", IAHR-APD Conference, Chennai, India, pp. 1155-1165.
19. Tanaka, H., Suntoyo and **Sana, A.** (2006), "Numerical investigation on a rough bed turbulent boundary layer under cnoidal wave motion", Proceedings of 7th International Conference on Hydro-science and Engineering, Philadelphia, U.S.(CD-ROM).
20. Ghumman, A. R., **Sana, A.** and Tanaka, H. (2006), "Using a modified $k-\varepsilon$ Model to Analyze Transitional Oscillatory Boundary Layers", Annual Conference of Canadian Society of Civil Engineers, 2006, Paper No. GC-011, pp.1-8.
21. Suntoyo, Tanaka, H. and **Sana, A.** (2006), "Bottom shear stress and sediment transport calculation characterized by the acceleration effect under non-linear wave motion", International Conference on Coastal Engineering (ASCE), 2006, Book of Abstracts, Paper No. 301.
22. **Sana, A.** and Tanaka, H., and Ghumman, A. R., (2006), "Modification of k- ε model to study oscillatory boundary layers", International Conference on Coastal Engineering (ASCE), 2006, Book of Abstracts, Paper No. 234.
23. **Sana, A.** (2005), "Measurement of oil related pollution in the coastal region of Sultanate of Oman", Oceans 2005 MTS/IEEE Conference, Washington D.C., USA.
24. **Sana, A.**, Al-Hatrushi, S., Machlachlan, A., Hamed, K., Kwarteng, A., Al-Belushi, A. and Kumar, V. (2005), "Implementation of a Numerical Model to Study Coastal Erosion along Al-Batinah, Sultanate of Oman", Arabian Coast 2005 Conference, Dubai , Book of Abstracts, pp.379-382.
25. **Sana, A.**, Al-Jamrah, A., Claereboudt, M., Al-Kindi, S., Tanaka, H. and Kwarteng, A. (2005), "Measurement of Water Quality in Gulf of Oman", Arabian Coast 2005 Conference, Dubai, Book of Abstracts, pp.21-24.
26. Al-Hatrushi, S., Kwarteng, A., Machlachlan, A., **Sana, A.**, Al-Belushi, A., Hamed, K., and Kumar, V. (2005), "A preliminary assessment of coastal erosion along the Batinah: Sultanate of Oman", Arabian Coast 2005 Conference, Dubai , Book of Abstracts, pp.145-149.
27. Kwarteng, A., Al-Hatrushi, S., Machlachlan, A., **Sana, A.**, Al-Belushi, A., Hamed, K., and Kumar, V. (2005), "Monitoring changes along the Batinah coast of Oman using remotely sensed data", Arabian Coast 2005 Conference, Dubai , Book of Abstracts, pp.9-12.
28. **Sana, A.**, Ghumman, A. R. and Tanaka, H. (2005), "Modification of $k-\varepsilon$ Model to Analyze Oscillatory Boundary Layers", Proceedings, International Conference on Mathematical Models and Methods in Fluid Mechanics, July 4-6, 2005, COMSATS, Islamabad, Pakistan.
29. **Sana, A.**, Tanaka, H. and Suzuki, T. (2004), "Experimental and numerical study of irregular wave boundary layers on a rough bottom", Proceedings, International Conference on Coastal Engineering (ASCE), Lisbon, Portugal, Vol. 1, pp.521-528.
30. **Sana, A.** and Tanaka, H. (2004), "Numerical modeling of oscillatory boundary layers using two-equation turbulence models", Proceedings, 6th International Conference on Hydro science and Engineering (ICHE-2004), Brisbane, Australia (Invited paper).
31. **Sana, A.** (2004), "Implementation of a numerical model to study oil spill fate in the coastal region of Sultanate of Oman", Proceedings, The Joint Kingdom of Bahrain-Japan Symposium 2004-Challenges on New Horizons, Manama, Bahrain, pp.374-386 (Invited paper).
32. **Sana, A.** and Al-Shibli, S. H. (2003), "Modeling of seawater intrusion into a coastal aquifer in the Sultanate of Oman", Proceedings, 30th International Association of Hydraulic Engineering and Research (IAHR) Congress, Greece, August 24-29, pp.581-588.
33. **Sana, A.**, Tanaka, H. (2001), "Utilization of Two-Layer Turbulence Models to analyze an Oscillatory Boundary Layer on a Smooth Bottom", Proceedings, 8th International Symposium. Flow Modeling and Turbulence Measurements, Tokyo, Japan, pp.517-524.

34. Mzila, N., Shuy, E.B., Tan, H.C. and **Sana, A.** (2001), Preliminary groundwater quality investigations at a reclaimed land in Singapore”, Proceedings, 29th International Association of Hydraulic Engineering and Research (IAHR) Congress, Beijing, China, pp.140-144.
35. **Sana, A.**, Shuy, E. B., Mzila, N. and Hoong, C. K. M. (2001), “A Preliminary Study On Feasibility Of Using Treated Wastewater To Recharge Reclaimed Land”, Proceedings, 29th International Association of Hydraulic Engineering and Research (IAHR) Congress, Beijing, China, pp.152-156.
36. **Sana, A.** and Shuy, E. B. (2001), “Analysis of a Transitional Oscillatory Boundary Layer by k-ε Model”, Proceedings, 29th International Association of Hydraulic Engineering and Research (IAHR) Congress, Beijing, China, pp.224-228.
37. Tanaka, H., **Sana, A.**, Kawamura, I. And Yamaji, H., (2000), “Stability of asymmetric wave boundary layers”, Proceedings, International Conference on Computational. Hydrodynamics (ICHHD 2000), Yokohama, Japan, pp. 563-568.
38. Itonaga, N, **Sana, A.**, Tanaka, H. and Samad, M.A. (2000), “Modeling of Natori river mouth topography change due to a heavy flood”, Proceedings, International Conference on Computational Hydrodynamics (ICHHD 2000), Yokohama, Japan, pp. 653-658.
39. Tanaka, H., Yamaji, H., **Sana, A.** (1998), “Experimental study on non-linear wave boundary layers”, Proceedings, International Conference on Coastal Engineering (ASCE), Copenhagen, Denmark, pp.471-483.
40. Tanaka, H., **Sana, A.**, and Samad, M.A. (1997), “The modes of Sediment Transport under pulsatile motion”, Proceedings, Fourth International Conference on Measurement and Control of Granular Materials (MCGM 97), pp.160-165.
41. Tanaka, H. and **Sana, A.**, (1997), “The variation of frictional resistance under long waves in cross-shore direction”, Proceedings, Computer Modeling of Seas and Coastal Regions III, Ed. J.R. Acinas and C.A. Brebbia, Computational Mechanics Publications, pp.233-242.
42. Kawamura, I., Tanaka, H., Yamaji, H. and **Sana, A.** (1997) “Transition to turbulence in an asymmetric wave boundary layer -difference from sinusoidal waves-“, Proceedings of Coastal Engineering, JSCE, Vol.44, pp.136-140 (in Japanese).
43. **Sana, A.** and Tanaka, H., (1996), “The testing of low Reynolds number k-epsilon models by DNS data for an oscillatory boundary layer”, Proceedings, 6th Int. Symposium on Flow Modeling and Turbulence Measurements, Sep. 1996, Florida, U.S.A. pp.363-370.
44. **Sana, A.** and Tanaka, H., (1996), “A comparative study of low Reynolds number k-epsilon models based on wave-current combined motion”, Proceedings, 10th Congress of International Association for Hydraulic Research- Asia-Pacific Division, (IAHR-APD), Langkawi, Malaysia, pp.486-493.
45. Tanaka, H. and **Sana, A.**, (1996), “The quasi-steady behavior of wave boundary layer- a theoretical and experimental study”, Proceedings, 10th Congress of International Association for Hydraulic Research- Asia-Pacific Division, (IAHR-APD), Langkawi, Malaysia, pp.381-388.
46. Kawamura, I., **Sana, A.** and Tanaka, H. (1996) “Asymptotic behavior of wave boundary layers with increasing wave period”, Proceedings of Coastal Engineering, JSCE, Vol.43, pp.451-455 (in Japanese).
47. **Sana, A.** and Tanaka, H., (1995), “The performance of low Reynolds number k-epsilon model to analyze an oscillatory boundary layer”, Proceedings, International Symposium on Mathematical Modeling of Turbulent Flows, Tokyo, pp.291-296.
48. **Sana, A.** and Tanaka, H., (1995), “Application of low Reynolds number k-epsilon model to wave-current combined motion”, Proceedings, Computer Modeling of Seas and Coastal Regions II, Ed. C.A. Brebbia, L. Traversoni and L.C. Wrobel, Computational Mechanics Publications, pp.213-220.
49. **Sana, A.** and Tanaka, H., (1995), “A full-range equation for wave boundary layer thickness”, Proceedings, Advances in Hydro-Science and Engineering, Vol.2, China, pp.1487-1494.
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Conference Attendance and Presentations

1. 11th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2014), Tehran, Iran.
2. 19th Congress of the Asia and Pacific Division of International Association for Hydro-Environment Engineering and Research (IAHR-APD 2014), Hanoi, Vietnam.
3. International Workshop on Water Extreme Events, Muscat, Oman, 2014.
4. 34th International Conference on Coastal Engineering, Seoul, South Korea, 2014
5. International Conference on Desalination, Environment and marine Outfall Systems (ICDEMOS 2014), Muscat, Oman.
6. International Civil and Infrastructure Engineering Conference (InCIEC-2013), Kuching, Malaysia
7. 5th International Conference on Water Resources and Arid Environments (ICWRAE 2013), Riyadh, K.S.A.
8. 10th International Conference on Coasts, Ports and Marine Structures (ICOPMAS 2012), Tehran, Iran
9. 10th International Congress on Advances in Civil Engineering (ACE 2012), Ankara, Turkey
10. 6th International Conference on Asian and Pacific Coasts (APAC 2011), Hong Kong
11. 2nd Tropical Cyclones Symposium, Sur, Sultanate of Oman, 2012
12. 15th Physics of Estuaries and Coastal Seas (PECS) conference, Colombo, Sri Lanka, 2010
13. 3rd International Conference on Estuaries and Coasts, Sendai, Japan, 2009
14. 31st International Conference on Coastal Engineering, Hamburg, Germany, 2008
15. 2nd International Conference on Recent Developments in Fluid Mechanics, Islamabad, Pakistan, 2008
16. Summer Conference in Mathematics, Lahore, Pakistan, 2008
17. Regional Conference on Groundwater Protection, Tripoli, Libya, 2006.
18. 30th International Conference on Coastal Engineering, San Diego, United States of America, 2006
19. Arabian Coast Conference, Dubai, UAE, 2005

20. Oceans 2005 MTS/IEEE Conference, Washington D.C., USA, 2005
21. International Conference on Mathematical Models and Methods in Fluid Mechanics, COMSATS, Islamabad, Pakistan, 2005.
22. Symposium on New Space Services for Maritime Users: The Impact of Satellite Technology on Maritime Legislation, 2005, UNESCO Headquarters, Paris, France
23. International Conference on Coastal Engineering (ASCE), Lisbon, Portugal, 2004.
24. 6th International Conference on Hydro science and Engineering (ICHE-2004), Brisbane, Australia, 2004.
25. The Joint Kingdom of Bahrain-Japan Symposium 2004-Challenges on New Horizons, Manama, Bahrain, 2004.
26. 30th International Association of Hydraulic Engineering and Research (IAHR) Congress, Greece, 2003.
27. Meeting of the Tohoku Researchers Association, Nasu-Shiobara, Japan, 2003.
28. 8th International Symposium on Flow Modeling and Turbulence Measurements, Tokyo, Japan, 2001.
29. Natural Resources and Environmental Studies Research Colloquium, University of Northern British Columbia, Canada, 2000.
30. 10th Congress of International Association for Hydraulic Research- Asia-Pacific Division, (IAHR-APD), Langkawi, Malaysia, 1996.
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Funded Research

1. **Sana, A.**, “Development and Verification of a Turbulence Model for Wave Boundary Layers”, Internal Research Fund, Sultan Qaboos University, IG/ENG/CAED/06/02, Jan. 2006, (Funding: R.O. 7,650=US\$20,000, Year 2006-2007).
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3. **Sana, A.**, “Modeling of the Groundwater Quality in Al-Batinah Plain of Sultanate of Oman”, Internal Research Fund, Sultan Qaboos University, IG/ENG/CIVL/02/04, May 2002, (Funding: R.O. 5,095=US\$13,000, Year 2002-2005).
4. Al-Hatrushi, S., Kwarteng, A., **Sana, A.**, McLachlan, A., Hamed, K., Al-Belushi, A., “Coastal Erosion in the Batinah”, His Majesty’s Strategic Research Fund, Sultan Qaboos University, SR/ART/GEOG/04/01, May 2004. (Funding: O.R. 73,650=US\$191,300, Year 2004-2006).

Recent Consultancy Projects

1. Engineering Consultancy Services for Dry Dock at Duqm Shipyard Area, Oman Dry Dock Company. 2016. (Prof. Khalifa Al-Jabri (PI), Dr. A. W. Hago, Prof. Ali Al-Harthy, Dr. Yahia Mohamedzein, Dr. Ali Al-Nuaimi, Dr. Ahmed Sana (Co-investigator),
2. Assessment of Ambient Air Quality in Urban Areas of Muscat Governorate and Four Industrial Areas (Rusail, Nizwa, Sur and Raysut) in the Sultanate of Oman, Ministry of Environment and Climate Affairs, 2015. (PI: Dr. Mahad Baawain, Co-Investigators: Dr. B.S. Choudri, Dr. Ahmed Sana, Dr. Abdullah Al-Mamun).
3. Feasibility of marine water quality monitoring network in the coastal region of Sultanate of Oman, Ministry of Environment and Climate Affairs, 2015. (PI: Dr. Mahad Baawain, Co-Investigators: Dr. Ahmed Sana, Dr. Abdullah Al-Mamun, Dr. Andy Kwarteng).
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