

# CURRICULUM VITAE

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## Personal and Contacts

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First Name: Hamed

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Date of Birth: 1984

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## Educations and Qualifications

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### Civil Engineering – Hydraulic Structures

Diploma, Bagher-ol-Oloom High School, Sabzevar-Iran, 1998-2002.

B.Sc., Ferdowsi University of Mashhad, Mashhad-Iran, 2002-2006.

M.Sc., Amirkabir University of Technology (Tehran Polytechnic), Tehran-Iran, 2006-2009.

Ph.D., Iran University of Science and Technology (IUST), Tehran, Iran, 2009-2013.

Post-Doc in Mechanical Engineering–Fluid Mechanics, Amirkabir University of Technology, Tehran, Iran, 2014-2015.

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## Teaching and Technical Experiences

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- From 2007 till now Teaching B.Sc. and M.Sc. Courses, Department of Civil Engineering, Faculty of Engineering, Hakim Sabzevari University, Sabzevar, Iran.

- Invited lecturer in School of Civil Engineering, Iran University of Science and Technology (IUST), Tehran, Iran.

- Invited lecturer in Department of Civil Engineering, International University of Chabahar, Chabahar, Iran.
- From 2007 till 2016 Co-operation with Hydraulic Structures Division as hydraulic modeller and senior researcher, Water Research Institute, Tehran, Iran.
- Higher advisor of Sabzevar Construction Engineering Organization (SCEO), Iran.
- Advisor of HSU-YPN in IAHR from 2015 till now.
- Reviewer of prestigious international and national journals and conferences
- Supervisor and Advisor in M.Sc. and Ph.D. thesis in Civil and Mechanical Engineering
- Expert in Physical and Numerical Modelling

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### **Technical Activities**

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- Member of Int. Association for Hydro-Environment Engineering & Research (IAHR)
- Member of American Society of Civil Engineers (ASCE)
- Member of Iranian Committee of Large Dams (IRCOLD) - Design and Analysis of Dams Committee, Management Technology and Constructions of Dams, Hydraulics in Dams
- Member of Iranian Concrete Society (ICI)
- Member of Iranian Hydraulic Association (IHA)
- Member of Iranian Hydropower Association (IHA-IR)

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### **Honors and Awards**

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- Ranked FIRST in 4<sup>nd</sup> ASRAR Research Festival, Engineering Book, Sabzevar, Iran, 2007.
- Ranked FIRST in 4<sup>nd</sup> ASRAR Research Festival, Research Project, Sabzevar, Iran, 2007.
- Best Researcher in Water Research Institute, Tehran, Iran, 2010.
- Won the Iranian Season Book Award, Engineering Session, Tehran, Iran, 2012.
- Member of Scientific Committee of the 37<sup>th</sup> IAHR World Congress 2017

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### **Journal and Scientific Conference Reviewer**

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J. Dam and Hydroelectric Powerplant (In Persian) – J. Modeling in Engineering (In Persian) - Proceedings of the ICE – J. Water Management - International Journal of Civil Engineering - 37th IAHR World Congress 2017 – J. Geomechanics and Engineering – J. Soil Research – J. Sustainability in Environment – J. Risk and Reliability – 3th International Symposium Environmental & Water Resources Engineering – J. Water Science and Technology - 10th International Congress on Civil Engineering – 1st National Conference on Soil Mechanics

and Foundation Engineering – J. Building Performance – J. Hydrodynamics, Ser. B – J. Engineering Applications of Computational Fluid Mechanics - International Journal of Modelling and Simulation – J. Ferdowsi Civil Engineering (In Persian) – J. Rehabilitation in Civil Engineering – J. Irrigation & Water Engineering (In Persian) – J. Water Science and Engineering - Arabian Journal for Science and Engineering - 15th National Hydraulic Conference (In Persian) - Iranian Journal of Irrigation & Drainage (In Persian) – 1st Water Science and Engineering Conference - 15th Civil Engineering Students Conference (In Persian) - Sharif Journal of Civil Engineering (In Persian) – J. Water Supply (IWA) – J. Complexity – J. Flow Measurement and Instrumentation – Ain Shams Engineering Journal - Modares Civil Engineering journal (In Persian)

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### **Books in Farsi**

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- 1- Translation of Soil Mechanics Book (By Arnold Verruijt) to Farsi, Tarbiat Moallem University of Sabzevar Publication, 2008.
- 2- Translation of Soil Dynamics Book (By Arnold Verruijt) to Farsi, Fadak Isatis Publisher, 2010.
- 3- Design of Steel Structures Book, Fadak Isatis Publisher, 2010.
- 4- An Introduction to Computational Hydraulics Book, Fadak Isatis Publisher, 2011.
- 5- Translation of Design of Hydraulic Structures (By Larry Mays) to Farsi, Water Research Institute Publisher, 2012.
- 6- Translation of Design of Water Supply Systems Book to Farsi, Amirkabir University Publisher, 2012.
- 7- Translation of Mechanical Equipments in Hydropower Plants Book to Farsi, Fadak Isatis Publisher, 2012.
- 8- Translation of Engineering Hydrology Book to Farsi, Fadak Isatis Publisher, 2014.
- 9- Design and Analysis by Flow 3D software, Fadak Isatis Publisher, 2014.
- 10- Management in Engineering, Hakim Sabzevari University Publisher, 2014.
- 11- Water, Hydropower, Development, Amirkabir University of Technology Publisher, 2015.

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### **Books in English**

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- Chapter 9: CFD Modeling of Floor Heating System in Dome Shape Rooms According to the Thermal Comfort Condition, Book: Computational Fluid Dynamics Applications in Green Design, Publisher: International Energy and Environment Foundation, 2013.

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### **Published Papers in National Journals**

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- 1- Experimental Study of Vortex on Orifice Spillways (Case Study of Karun III Dam), Iranian Journal of Water Resource Management, 2010.
- 2- Assessment of Micro-Silica Performance on Concrete Strength, Khesht Journal, 2011.
- 3- Circular Aerators in Tunnels, Iranian Hydraulic Journal, 2011.
- 4- Introducing the Hydropower Plants, Khesht Journal, 2013.
- 5- Investigating the effect of intake withdrawal direction on critical submergence and strength of vortices, Journal of Modares Mechanical Engineering, 2014.
- 6- Hydraulic Simulation of a Morning Glory Spillway and Its Reservoir, Khesht Journal, 2015.
- 7- Study and Analysis of Effect of Roughness on Energy Dissipation at Stilling Basins, Khesht Journal, 2015.
- 8- Study of Electromechanical Performance of Pressure Transducers in Fluid Measurements, Khesht Journal, 2015.
- 9- Analysis and Assessment of Installing Blocks on Performance of Stilling Basins, Journal of Modares Mechanical Engineering, 2015.
- 10- Difference between Steel and Concrete Structures Using BIM, Khesht Journal, 2017.
- 11- Comparison and Analysis of Energy Dissipation in USBR Stilling Basins Types I,II,III, Khesht Journal, 2017.
- 12- Experimental investigation of dynamics of the air-core vortices and estimating the air entrainment rate at a horizontal intake, Journal of Modares Mechanical Engineering, 2017.
- 13- Hydrodynamic Analysis of flow in USBR Stilling Basin Types I, II, III, Journal of Dam and Hydroelectric Power Plant, 4(13): 43-54, 2017.
- 14- Effect of Outlet Submergence in Bottom Outlet on Aeration between Emergency and Service Gates at high Dams, Journal of Water Science Engineering, Vol. 7, Issue 16, pp: 73-82, 2017.
- 15- Seismic Analysis of Different Masonry Arches Using Numerical Simulation, Journal of Structural and Construction Engineering, 2019.

- 16- Experimental study of the effect of the trashrack on the vortex at the intake of the hydroelectric power plants in various flow rates and submergence depths, *Journal of Dam and Hydroelectric Power Plant*, 6(21):49-62, 2019.
- 17- Numerical Simulation of the Effect of Waves on the Vortex Formed in the Vertical Intake, *Modares Civil Engineering Journal*, 19(5), 2019.
- 18- Effect of Arch Height on Wind Load in Dome Buildings, *Amirkabir Journal of Civil Engineering*, 2020.
- 19- Numerical Modeling of Hydraulic Jump in Stilling Basin of High Dams, *Journal of Irrigation and Water Engineering*, 11(1): 14-37, 2020.
- 20- Identification, categorize and evaluation of supply chain risks in concrete dam in terms of cost, *Journal of Dam and Hydroelectric Power Plant*, 7(26):39-47, 2020.

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### **Presented Papers in National Conferences**

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- 1- Water Hammer Analysis in Cooling System of NEKA Combine Cycle Power Plant and Recommending Solution for Decrease the Harmful Effects, 22<sup>nd</sup> International Power System Conference, 2007, Iran.
- 2- Controlling and Management of Leakage in Water Distribution System, 14<sup>nd</sup> Student Conference on Civil Engineering, Semnan, 2006, Iran.
- 3- Experimental Study of Anti-Vortex Wall on Instability of Vortices at Karun III Dam, 14<sup>nd</sup> Student Conference on Civil Engineering, Semnan, 2006, Iran.
- 4- Determination of Flow Pattern around a Spur Dick by using a 3D Model, 7<sup>th</sup> Iranian Hydraulic Conference, 2008, Tehran, Iran.
- 5- 3D Simulation of Flow over Stepped spillways, 8<sup>th</sup> International Congress in Civil Engineering, 2007, Shiraz, Iran.
- 6- Velocity Fluctuation Measurement at Hydraulic Structures, First National Workshop on experimental measurement Facilities, 2008, Birjand, Iran.
- 7- Experimental Analysis of Pressure Changes on power generation (case study of Karun III dam), First National Conference on Infrastructures Engineering and Management, 2008, Tehran, Iran.
- 8- Calculating Minimum Operation Water Level in Hydropower Dams, 8<sup>th</sup> Hydraulic Conference, 2009, Tehran, Iran.
- 9- Design of Circular aerators for bottom outlet Tunnels, 9<sup>th</sup> Hydraulic Conference, 2010, Tehran, Iran.

- 10- Design of Guide Walls in Spillways (Case Study of Galabar Dam), 10<sup>th</sup> Hydraulic Conference, 2011, Rasht, Iran.
- 11- Numerical Study of Stresses at Flip Buckets, First National Conference on Civil Engineering, Zibakenar, Iran, 2012.
- 12- Design of Anti-Vortex Structures in Hydropower Dams, 11<sup>th</sup> Hydraulic Conference, 2012, Urmia, Iran.
- 13- Effect of Pier on Performance of Stepped Spillway of Zhaveh Dam, 11<sup>th</sup> Hydraulic Conference, 2012, Urmia, Iran.
- 14- Flow and Sediment Transport Simulation in Rivers (Part I: 1D Simulation), 7th National Congress on Civil Engineering, Zahedan, Iran, 2013.
- 15- Flow and Sediment Transport Simulation in Rivers (Part II: 2D Simulation), 7th National Congress on Civil Engineering, Zahedan, Iran, 2013.
- 16- Flow and Sediment Transport Simulation in Rivers (Part III: 3D Simulation), 7th National Congress on Civil Engineering, Zahedan, Iran, 2013.
- 17- Hydraulics of Intake and Bottom Outlet of Kheirabad Dam, 12<sup>th</sup> Hydraulic Conference, 2013, Karaj, Iran.
- 18- Economical Design of Concrete Slab in Bottom of Stilling Basin (Case Study of Namroud Dam), 7<sup>th</sup> National Conference of International Environmental Day, Tehran, 2013.
- 19- Determination of the Maximum Pressure Flactuation Location along the Stilling Basins in High Dams (Case Study of Namroud Dam), Civil Engineering and Sustainable Development Conference, Mashhad, 2013.
- 20- Thermal Analysis in Dome Shape Room, First National Conference in Green House, Mashhad, 2014.
- 21- 3D Simulation of Flow over the Buckets, 13<sup>th</sup> Hydraulic Conference, 2014, Tabriz, Iran.
- 22- Sustainability in Road Construction, 1<sup>st</sup> National Conference in Civil Engineering and Sustainability, 2015, Tehran, Iran.
- 23- Analysis and Assessment on Effect of Bed Roughness on Hydraulic Jump Parameters in Stilling Basins, 1<sup>st</sup> Water Science & Engineering Conference, 2015, Tehran, Iran.
- 24- Numerical Simulation of Flow over Broad-Crested Weir with Different Slopes, 14<sup>th</sup> Hydraulic Conference, 2015, Zahedan, Iran.
- 25- Numerical of Energy Dissipation over Stepped Spillway with Different Number of Steps, 3<sup>th</sup> International Congress on Civil Engineering, Architecture and Urban Development, 2015, Tehran, Iran.

- 26- Analytical Study of Air Concentration in Channels with Free Surface, 15<sup>th</sup> Hydraulic Conference, 2016, Ghazvin, Iran.
- 27- Numerical Simulation of Morning Glory Spillway of Haraz Dam Using Flow 3D, 15<sup>th</sup> Hydraulic Conference, 2016, Ghazvin, Iran.
- 28- Numerical Analysis of Air-Core Vortex at Intake Entrance, 16<sup>th</sup> Hydraulic Conference, 2017, Ardabil, Iran.
- 29- Analysis and Assessment of Energy Loss and Submerged Depth in Entrance Trashracks of Hydropower Plants, 11<sup>th</sup> International Congress on Civil Engineering, 2018, Tehran, Iran.
- 30- Assessment of Air Bubble Movement in a 90° Curve, 17<sup>th</sup> Hydraulic Conference, 2018, Shahr-e-Kord, Iran.
- 31- Application of Regression Trees Method and Gene Expression Programming to Estimate Scour Depth around the Pile Group, 17<sup>th</sup> Hydraulic Conference, 2018, Shahr-e-Kord, Iran.
- 32- Application of Regression Tree M5 Method and ANN Programming to Estimate the Maximum Pressure in Phillip Buckets, 18<sup>th</sup> Hydraulic Conference, 2020, Tehran, Iran.

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### **Published Papers in International Journals**

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- 1- Effect of Intake Head Wall and Trash Rack on Vortices, Journal of Hydraulic Research, 48(1): 108-112, 2010.
- 2- 3D Simulation of Flow around a Single Spur Dike with Free-Surface Flow, Journal of River and Basin Management, 8(1): 55-62, 2010.
- 3- Hydraulics of Stepped Spillways with Different Numbers of Steps, Proceedings of the ICE –Journal of Dams and Reservoirs, 20(3): 131-136, 2010.
- 4- Hydraulic Evaluation of Neyrpic-Moduls at Water Distribution Network of Garmsar Plain, World Applied Sciences Journal, 10(11): 1363-1367, 2010.
- 5- Vortex Study at Orifice Spillways of Karun III Dam, Journal of Dam Engineering, XXI(2): 131-142, 2010.
- 6- Validation of the Volume of Fluid Method for Free Surface Flow over a Stepped Spillway, Journal of Dam Engineering, XXI(2): 171-183, 2010.
- 7- Prevention of Vortex at Power Intakes by Horizontal Plates, Proceedings of the ICE – Journal of Water Management, 164(4): 193-200, 2010.
- 8- 3D Simulation of Flow over Flip Buckets at Dams, Journal of American Science, 7(6): 931-936, 2011.

- 9- Simulating Flow over Circular Spillways by Using Different Turbulence Models, *Engineering Applications of Computational Fluid Mechanics*, 6(1): 100-109, 2012.
- 10- Discussion of “Prediction of Intake Vortex Risk by Nearest Neighbors Modeling” by Quentin B. Travis and Larry W. Mays, *Journal of Hydraulic Engineering (ASCE)*, 137(6): 701-705, 2012.
- 11- Hydraulic Optimization of Flow Over a Gated Spillway, *Journal of Dam Engineering*, XXII(4): 1-11, 2012.
- 12- 3D-Simulation of Flow over Submerged Weirs, *International Journal of Modeling and Simulation (ACTA)*, 32(4): 237-243, 2012.
- 13- Anti-Vortex Structures at Hydropower Dams, *International Journal of the Physical Sciences*, 7(28): 5069-5077, 2012.
- 14- 3D Simulation of Dam Break Flows, *Journal of Dam Engineering*, XXIII(2): 1-17, 2012.
- 15- Seismic Response of Different Earthfill Dams to a Recorded Earthquake, *Middle-East Journal of Scientific Research*, 16(8): 1134-1140, 2013.
- 16- Velocity Field in a Reservoir in the Presence of an Air-Core Vortex, *Proceedings of the ICE – Journal of Water Management*, 167(6): 356–364, 2013.
- 17- CFD Modeling of Floor Heating System in Dome Shape Rooms According to the Thermal Comfort Condition, *International Energy and Environment Foundation: Computational Fluid Dynamics Applications in Green Design*, 2013.
- 18- Vortices in dam reservoir: A case study of Karun III dam, *Journal of SADHANA*, 39(5): 1201-1209, 2014.
- 19- Numerical Simulation and Analysis of Flow in a Reservoir in the Presence of Vortex, *Engineering Applications of Computational Fluid Mechanics*, 8(4): 598–608, 2014.
- 20- Dynamic Pressure Analysis at Chute Flip Buckets of Five Dam Model Studies, *International Journal of Civil Engineering*, 13(1): 45-54, 2015.
- 21- Sedimentation control in the reservoirs by using an obstacle, *Journal of SADHANA*, 40(4): 1373-1383, 2015.
- 22- Experimental Study of Pressure Fluctuation in Stilling Basins, *International Journal of Civil Engineering*, 13(5): 45-54, 2015.
- 23- Stepped spillway optimization through numerical and physical modeling, *International Journal of Energy and Environment*, 6(6): 597-606, 2015.
- 24- Effect of soil physical properties on infiltration rate, *Journal of Geomechanics and Engineering*, 10(6): 727-736, 2016.



- 25- Effect of vortex formation on sediment transport at dual pipe intakes, *Journal of SADHANA*, 41(9): 1055-1061, 2016.
- 26- Development of a Device for Measuring Air–Water Flow Characteristics, *International Journal of Civil Engineering*, 15(2): 195–203, 2017.
- 27- Accuracy of Numerical Simulation in Asymmetric Compound Channels, *International Journal of Civil Engineering*, 16(2):155-167, 2018.
- 28- Numerical simulation of anti-vortex devices at water intakes, *Proceedings of the ICE – Journal of Water Management*, 171(1): 18-29, 2016.
- 29- Calibration of pan coefficient for a semi-arid area: a case study, *Int. J. Hydrology Science and Technology*, 7(3): 256–267, 2017.
- 30- Effect of Natural Zeolite-Pozzolan on Compressive Strength of Oil-Polluted Concrete Marine Structures, *Civil Engineering Journal*, 2(12): 623-636, 2016.
- 31- An analytical model for simulating air concentration in drop and deflector jets, *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 39(7): 2505-2517, 2017.
- 32- Numerical Calculation of Air Entrainment Rates Due to Intake Vortices, *Journal of Meccanica*, 52(15): 3629–3643, 2017.
- 33- Minimum Reservoir Water Level in Hydropower Dams, *Chinese Journal of Mechanical Engineering*, 30(4): 1017-1024, 2017.
- 34- Numerical Simulation of Air-Core Vortex at Intake, *Journal of Current Science*, 113(1): 141-147, 2017.
- 35- Comparison between hydraulic and structural based anti-vortex methods at intakes, *European Physical Journal Plus*, 132(8): 329, 2017.
- 36- Effect of Steel Fiber and Different Environments on Flexural Behavior of Reinforced Concrete Beams, *Journal of Applied Sciences*, 7(10): 1011, 2017.
- 37- Effect of Silica Fume on Compressive Strength of Oil-Polluted Concrete in Different Marine Environments, *China Ocean Engineering*, 31(6): 716-723, 2017.
- 38- Vortex Dissipation Using a Hydraulic-Based Anti-Vortex Device at Intakes, *International Journal of Civil Engineering*, 2017.
- 39- Effect of inlet flow condition on hydrodynamic parameters of stilling basins, *Journal of ACTA Mechanica*, 2017
- 40- Thermal stress control using waste steel fibers in massive concretes, *European Physical Journal Plus*, 132(11): 491, 2017
- 41- Effect of the end sill angle on the hydrodynamic parameters of a stilling basin, *European Physical Journal Plus*, 133(1): 10, 2018

- 42- Effect of using guide walls and piers with different geometries on the flow at entrance of a spillway, *European Physical Journal Plus*, 133(1): 91, 2018
- 43- A New Approach on Anti-Vortex Devices at Water Intakes Including a Submerged Water Jet, *European Physical Journal Plus*, 133:143, 2018
- 44- Strength of Different Fiber Reinforced Concrete in Marine Environment, *Materials Science*, 24(2): 204-211, 2018.
- 45- Effect of Dual Intake Direction on Critical Submergence and Vortex Strength, *Journal of Hydraulic Research*, 2018.
- 46- An experimental study on free surface vortex dynamics, *Meccanica*, 2018.
- 47- Numerical Study on Effect of Coastal Pile Arrangements on Wave Characteristics, *Journal of Marine Science and Application*, 2018.
- 48- An Efficient Radial Basis Function Meshfree Local Petrov–Galerkin Method for Modeling the Unidirectional Fully Developed Fluid Flow, *Journal of Applied Fluid Mechanics*, 13(2): 491-497, 2020.
- 49- Analysis of the Impact of Effective Length of Morning Spillway on Its Performance (Numerical Study), *Instrumentation Measure Metrologie*, 18(2): 211-221, 2019.
- 50- Effect of water flow characteristics on gypsum dissolution, *European Physical Journal Plus*, 134:591, 2019.
- 51- Prediction of current-induced scour depth around pile groups using MARS, CART, and ANN approaches, *Journal of Marine Georesources & Geotechnology*, 2020.
- 52- Application of Multivariate Adaptive Regression Splines and Classification and Regression Trees to Estimate Wave-Induced Scour Depth Around Pile Groups, *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 2020.
- 53- Explicit data-driven models for prediction of pressure fluctuations occur during turbulent flows on sloping channels, *Stochastic Environmental Research and Risk Assessment*, 2020.
- 54- Experimental and numerical investigation on effect of trashrack on flow properties at power intakes, *Journal of Applied Mathematics and Mechanics*, 2020.
- 55- Elimination of vortices by wave generation as a hydraulic anti-vortex method, *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 2020.
- 56- Prediction of the dynamic pressure distribution in hydraulic structures using soft computing methods, *Soft Computing*, 2020.

- 1- Hydraulic Design of a Multi-Level Intake Structure, 3<sup>rd</sup> IAHR International Symposium on Hydraulic Structures, 2008, China
- 2- Experimental Study of Vertical Anti-Vortex Wall at Power Intakes of Karun III Dam, 2<sup>nd</sup> International Junior Researcher and Engineer Workshop on Hydraulic Structures, 2008, Italy
- 3- Experimental Study of Flow Aeration in the Bottom Outlet Tunnel, Hydro-2008 Conference, 2008, India
- 4- Vortex Study on Hydraulic Model of Godar-e-Landar Dam and Hydropower Plant, Fifth International Conference on Computational and Experimental Methods in Multiphase and Complex Flow, 2009, UK
- 5- Lateral Bearing Capacity of Piles in Cohesive Soils, 5<sup>th</sup> National Civil Engineering Conference (AWAM '09), 2009, Malaysia
- 6- Prevention of Vortex Formation at Karun III Power Tunnels, 5<sup>th</sup> National Civil Engineering Conference (AWAM '09), 2009, Malaysia
- 7- Bridge Improvement against Earthquakes by Using Base Isolation Technology (Case study of AFRIGHA – HEMAT Bridge in Tehran, Iran), 5<sup>th</sup> National Civil Engineering Conference (AWAM '09), 2009, Malaysia
- 8- Design of Spillway Bucket for Kuhrang III Dam by Using a Physical Model, International Symposium on Hydraulic Physical Modeling and Field Investigation, Nanjing, China, 2010
- 9- A techno-economical view on energy losses at hydropower dams (case study of Karun III Dam and Hydropower Plant), 6<sup>th</sup> International Conference on Computational and Experimental Methods in Multiphase and Complex Flow, Greece, 2011
- 10- 3D Study of Scour Hole at Downstream of Khersan III Dam, The First International Conference on Dams and Hydropower, 2012.
- 11- Scouring Study at Karun IV Dam and Hydropower Plant, 3<sup>rd</sup> International Conference on Managing Rivers in the 21st Century, Malaysia, 2011.
- 12- Calculating air concentration along a free jet, 36<sup>th</sup> IAHR World Congress, 2015, the Netherlands.
- 13- Numerical and Experimental Optimization of Flow Pattern through Piers of Dam Spillways, 37<sup>th</sup> IAHR World Congress, 2017, Malaysia.
- 14- Numerical Simulation of Reinforced Concrete Cut-Off Wall with Steel Fibres under Dam, SynerCrete'18 International Conference on Interdisciplinary Approaches for Cement-based Materials and Structural Concrete, 2018, Portugal.