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### تحصيلات

از می سال 2006 تا مارچ 2007 ، دانشگاه یاماگوچی ، اوبه، ژاپن محقق مدعو در سمت پست داک برای پروژه: مدیریت دوره عمر سامانه های زیرساختی در قرن 21 (توسعه سامانه پایش سلامت پل)

> از سال 1373 تا 1379 ، دانشگاه صنعتی امیر کبیر، تهران، ایران، دکتری مهندسی عمران – سازه عنوان رساله: بررسی و مدلسازی کربناتاسیون بتن های معمولی و میکروسیلیسی

از سال 1371 تا 1373، دانشگاه تهران، تهران، ایران، کارشناسی ارشد مهندسی عمران – سازه عنوان پایان نامه: رفتار ارتجاعی اتصالات موسوم به خورجینی

از سال 1364 تا 1369، دانشگاه علم و صنعت ايران، تهران، كارشناسي مهندسي عمران - عمران

از سال 1360 تا 1364، دبيرستان البرز، تهران، ديپلم رياضي – فيزيک

## دروس تدريس شده

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- تحلیل سیستم های پیشرفته (کاشناسی ارشد در دانشگاه یاماگوچی، اوبه، ژاپن)

**سو ابـق حرفـه ای** از سال 1380 تا کنون، عضو هیئت علمي دانشگاه تربیت دبیر شهید رجايي، استادیار دانشکده عمر ان

از سال 1386 تا 1387، عضو شوراي پژوهشي دانشگاه تربيت دبير شهيد رجايي

از سال 1381 تا 1382، معاونت پژوهشي و دانشجوئي دانشكده فني و مهندسي دانشگاه تربيت دبير شهيد رجائي

از سال 1375 تا 1380، عضو هيئت علمي واحد علوم و تحقيقات و واحد مركزي دانشگاه آزاد اسلامي، تهران – دانشكده هاي مهندسي عمران و مهندسي مكانيك

از سال 1382 تا 1388، عضو كميته بازنگري مبحث نهم مقررات ملي ساختماني ايران: طرح و اجراي ساختمانهاي بتن آرمه، دفتر تدوين و ترويج مقررات ملي ساختمان، سازمان مديريت و برنامه ريزي كشور

سال 1383، عضو كميته تدوين آيين نامه ملي پايايي بتن در محيط خليج فارس و درياي عمان (پيشنهادي) ، مركز تحقيقات ساختمان و مسكن، وزارت مسكن و شهرسازي

سال 1387 تا كنون، عضو كميته بررسي نهايي آيين نامه بهسازي لرزه اي پل ها، معاونت برنامه ريزي و نظارت راهبردي رئيس جمهور ، دفتر تدوين و ترويج مقررات ملي ساختمان

سال 1393 تا كنون، عضو كميته راهبردي ابنيه فني راه هاي كشور با ابلاغ معاونت وزارت راه و شهرسازي و رياست سازمان راهداري و حمل ونقل جاده اي

از سال 1382 تا 1384، عضو كميته سيستم مديريت پل ايران، مركز تحقيقات وزارت راه

از سال 1382 تا 1384، مجري سيستم نگهداري پيشگيرانه سازه هاي بتن مسلح بنادر ايران، همكار شركت شيبراهه بندر، سازمان بنادر و كشتيراني ايران

سال 1375، مشاور سازه در معاونت فنی شرکت سولیران

سال 1374، پروژه تعميرات بتن اسكله شهيد رجايي بندر عباس، شركت ايتوك راسخ

سال 1373، تدريس در كارگاه كامپيوتري روش اجزاي محدود دانشكده فني مترو

از سال 1371 تا 1373، طراح و كنترلر محاسبات سازه، شركت متروي تهران و حومه

از سال 1376 تا 1386، مشاور تكنولوژي بتن و سازه در پروژه هاي: سد كوثر شركت سابير، طرح سد و نيروگاه سيمره و سازبن، سد و نيروگاه گتوند عليا، سد كرخه شركت توسعه منابع آب و نيروي ايران و سد و نيروگاه سياه بيشه شركت كيسون

از سال 1377 تا 1387، برگزاري و ارائه سمينارهاي آموزشي تكنولوژي بتن پيشرفته، اتصالات سازه هاي فولادي، مهندسي زلزله، خرابي ها، نگهداري و تعميرات سازه هاي بتني، بهسازي لرزه اي ساختمان ها و ... براي سازمان مديريت و برنامه ريزي استان تهران، مركز تحقيقات ساختمان و مسكن، سازمان نظام مهندسي استان هاي مختلف، انجمن بتن ايران، انجمن مهندسين عمران ايران و ...

از سال 1377 تا 1378، تدريس و مسئوليت آزمايشگاه بتن دانشكده مهندسي عمر ان، دانشگاه صنعتي امير كبير

از سال 1375 تا 1377، تدريس و مسئوليت آزمايشگاه مقاومت مصالح، دانشكده مهندسي مكانيك، دانشگاه آزاد اسلامي، واحد علوم و تحقيقات تهران

ژ انويه و فوريه سال 2000 ميلادي، محقق مدعو به دانشكده مهندسي سيستم ها و علوم كامپيوتري دانشگاه ياماگوچي، اوبه، ژ اپن

نوامبر و دسامبر سال 2002 ميلادي، محقق مدعو براي همكاري(Visiting Researcher for Collaboration) در دانشكده مهندسي سيستم ها و علوم كامپيوتري دانشگاه ياماگوچي، اوبه، ژاپن ـ در مدت اقامت در اين دانشگاه 12 سخنراني مختلف در ارتباط با خرابي سازه هاي بتن مسلح، پلهاي بنتي، مهندسي سيستمها، سيستم مديريت پل (BMS)، روش هاي نوين بهينه سازي مانند الگوريتم ژنتيك و ايمني(Genetic and Immune Algorithms) و ... ارائه گرديد.

از سال 2010 تا كنون، داور بيش از 80 مقاله ژورنال هاي بين المللي الزوير (بيش از 55 مقاله)، مواد انجمن بتن آمريكا، عمران شريف، عمران مدرس، پلي تكنيك، علم و صنعت، سمنان و ...

# علاقه مندی های پژوهشی

- 1. Advanced concrete/geopolymer technology considering sustainable development requirements.
  - a. Using natural/local pozzollans
  - b. Durability improvement
  - c. Introducing High Performance Concrete (HPC)
  - d. Application of natural clays for production of geopolymeric concrete
  - e. Decreasing Carbon Dioxide emission into atmosphere and tracking of its footprints
  - f. Multiscale Modeling/Simulation of cementitious materials
  - g. Nano/Molecular scale modeling/simulation of clinker and hydrated cement products
  - h. Atomistic/molecular dynamics analysis of cementitious/geopolymeric materials
  - i. Activation of natural pozzolans by chemical, mechanical and hybrid techniques
  - j. ...
- 2. Structural Health Monitoring and Damage Detection
  - a. Application of various computational techniques to find out the current health condition of structures especially concrete bridge decks
  - b. Damage detection of concrete bridge decks for the location and extension of the damage/deterioration
  - c. Development of fuzzy or automated concrete surface cracks detection system
  - d. ...
- 3. Data Science, Soft Computing and Artificial Intelligence
  - a. Application of fuzzy logic to develop expert system to diagnose concrete deteriorations/damages
  - b. Application of artificial neural networks for structural damage detection
  - c. Introducing neuro-fuzzy system for damage location and its extension for concrete bridge decks
  - d. Data mining for rule extraction/properties from material databases
  - e. Machine learning methods for finding out more about material properties
  - f. ...
- Some of the above-mentioned research topics have been already done and some of them are currently underway. If needed more information would be available.

## مقالات ژورنالي

1. Tarighat, A. and Ramezanianpour, A. A., "Deterministic Modeling and Stochastic Monte Carlo Simulation of Relatively High-Strength Concrete Carbonation Depth for Hot-Marine Regions of Persian Gulf", Amirkabir Journal of Science & Technology, Iran, Vol.13. No. 49, Jan. 2002, pp. 56-68.

- 2. Tarighat, A., "Evaluation of Concrete Structures by Extending the Results of 1D Tests to 2D Finite Element Analysis", ASAS Journal of Iranian Society of Civil Engineers, Tehran, Iran, Sep. 2002, (In Persian).
- 3. VIROLA, J. and Tarighat, A., "Long-span cable-supported bridges- general review", Bana Journal, Iran, Vol. 31, May 2007, pp. 41-56, (In Persian).
- 4. Rissanen, Tommi, Miyamoto, Ayaho, Tarighat, Amir and Ishida, Jun-ichi, "Knowledge Discovery in Bridge Database by Rough Set Based Data Mining", Advances in Fuzzy Sets and Systems, Vol. 2, Issue 2, Pushpa Publishing House (Vijaya Niwas, India), pp.179-216, June 2007.
- Tarighat, Amir and Miyamoto, Ayaho, "Fuzzy Concrete Bridge Deck Condition Rating Method for Practical Bridge Management System", Expert Systems with Applications, 36 (2009), pp.12077– 12085.
- Tarighat, Amir, "Stochastic modeling and calibration of chloride content profile in concrete based on limited available data", International Journal of Civil Engineering, Vol. 10, No. 4, Dec 2012, pp. 309-316.
- 7. Tarighat, Amir, "Model based damage detection of concrete bridge deck using adaptive neuro-fuzzy inference system", International Journal of Civil Engineering, Vol. 11, No. 3, Sep 2013, pp. 170-181.
- Tarighat, Amir and Jalalifar, Fahimeh, "Assessing the Performance of Corroding RC Bridge Decks: A Critical Review of Corrosion Propagation Models", Civil Engineering Infrastructures Journal, Vol. 47 (2), Dec 2014, pp. 173-186.
- 9. Haghollahi, Abbas, Ghiami Ardabili, Omid and Tarighat, Amir, "Effect of diaphragm on the foundations of building structures with steel seismic base isolators", International Journal of Advanced Structures and Geotechnical Engineering, Vol. 02, No. 03, July 2013, pp. 83-89.
- 10. Jalalifar, Fahimeh and Tarighat, Amir, "Condition Assessment of RC Bridges Using Reliability Model Incorporating Health Monitoring System", International Journal of Engineering and Technology sciences (IJETS), 2(3), June 2014, pp. 243-256.
- 11. Tarighat, Amir, Hajian, Alireza and Mousavi, Seyed Rouhollah, "Surface crack detection on concrete by Digital Image Processing methods", ASAS Journal of Iranian Society of Civil Engineering, Vol. 15, No. 36, Fall and Winter 2013, pp. 45-50, (in Persian).
- 12. KAWAMURA, Kei, YOSHINO, Kousuke, Tarighat, Amir, NAKAMURA, Hideaki, "A Valid Parameter Range Identification Method of a Digital Image Processing Algorithm for Concrete Surface Cracks Detection Using Genetic Algorithm and Decision Tree", Journal of Japan Society of Civil Engineers, Ser. F3 (Civil Engineering Informatics), Vol. 69, No. 2, 2013, pp. 13-23.
- 13. Afzali Naniz, Oveys, Farahani Tajar, Saeed, Tarighat, Amir, "Utilization of Artificial Neural Network (ANN) to Predict Compressive Strength of Concrete Containing Slag and Silica fume", International Journal of Material Science Innovations", Vol. 3, No. 1, 2015, pp. 6-15.
- 14. Haghollahi Abbas, Tarighat, Amir and Shafieezadeh, Mohammad, "Compressive prediction of concretes containing silica fume and styrene butadiene rubber by mathematical model", Ferdowsi Civil Engineering Journal, Vol. 28, No. 2, 2016, pp. 125-138, (in Persian).
- 15. Tarighat, A., Zehtab, B., Tavakoli, D., "An introductory review on simulation methods for the structure of cementitious material hydrates at different length scales", Pertanika Journal of Science & Technology (JST), Vol. 24, No. 1, 2016, pp. 27-39.
- Tarighat, Amir and Zehtab, Behnam, "Structural Reliability of Reinforced Concrete Beams/Columns Under Simultaneous Static Loads and Steel Reinforcement Corrosion", Arabian Journal for Science and Engineering, Vol. 41, No. 10, Feb. 2016, pp. 3945-3958.
- 17. Tavakoli, Davoud and Tarighat, Amir, "Molecular dynamics study on the mechanical properties of Portland cement clinker phases", Computational Materials Science, 119, 2016, pp. 65-73.
- 18. Tavakoli, Davoud and Tarighat, Amir, "Application of Molecular Dynamics method for estimation of mechanical properties of hardened cement paste in nano scale", Moddares Mechanical Engineering Journal, Vol. 16, No. 6, 2016, pp. 71-78, (in Persian).
- 19. Nguyen, Kim Cuong, Kawamura, Kei, Tarighat, Amir, "A study on semi-automatic concrete cracks detection using interactive genetic algorithm", Proceedings of the Japan Concrete Institute, 33, 2016.
- 20. Zehtab, Behnam and Tarighat, Amir, "Diffusion study for chloride ions and water molecules in C-S-H gel in nano-scale using molecular dynamics: Case study of Tobermorite", Advances in Concrete Construction, Vol. 4, No. 4, 2016, pp. 305-317.

- Soltani, Abolfazl, Tarighat, Amir and Rostami Rouhollah, "Effect of calcined clays and silica fume on compressive strength of concrete", Structural Engineering and Construction, Vol. 4, Spring 2017. pp. 33-50, (in Persian).
- 22. Tarighat, Amir and Afzali Naniz, Oveys, "Investigation of mechanical properties and some durability indices of concrete containing microfiber wollastonite and silica fume", Civil and Environmental Engineering Journal, Vol. 47, No. 1, 2017, pp. 47-57, (in Persian).
- 23. Zehtab, Behnam and Tarighat, Amir, "Molecular dynamics simulation to assess the effect of temperature on diffusion coefficients of different ions and water molecules in C-S-H", Mechanics of Time-Dependent Materials, 2017, pp. 1-15.
- 24. Daneshpayeh, Sajjad, Tarighat, Amir, Ashenai Ghasemi, Faramarz and Bagheri, Mohammad Sadegh, "A fuzzy logic model for prediction of tensile properties of epoxy/glass fiber/silica nanocomposites", Journal of ELASTOMERS & PLASTICS, 2017, pp. 1-10.
- 25. Tarighat, Amir and Moazzenchi, Sanaz, "Experimental evaluation of geopolymerization reactions in producing bricks", Concrete Research Journal, Vol. 10, No. 3, Fall 2017, pp. 71-80, (in Persian).
- 26. Tarighat, Amir, Moddares, Yaghoot and Mohammadi, Milad, "Thermodynamics simulation of sulfate attack for cementitious mortars", Omran Moddaress Journal, Vol. 18, No. 2, 2018, pp. 159-168, (in Persian).
- 27. Soltani, Abolfazl, Tarighat, Amir, and Varmazyari, Masoud, "Calcined Marl and Condensed Silica Fume as Partial Replacement for Ordinary Portland Cement", International Journal of Civil Engineering, Feb 2018.
- 28. Ahmadnejad Zarnaghi, Amir and Tarighat, Amir, "Damage Localization in Plate-Like Structures Using Wavelet Energy Analysis", Journal of Modeling in Engineering, Volume 16, Issue 53, Summer 2018, pp. 25-25.
- 29. Tarighat, Amir, Modarres, Yaghoot and Mohammadi, Milad, "Thermodynamic Modeling of the Effects of Wollastonite-Silica Fume Combination in the Cement Hydration and Sulfate Attack", Civil Engineering Infrastructures Journal, 51(1), June 2018, pp. 87-100.
- 30. Tarighat, Amir and Moddares, Yaghoot, "Thermodynamics modeling of sulfate attack on the hardened cement paste containing slag for different sulfate solutions", Journal of Concrete Materials and Structures (Iranian Concrete Institute), Vol. 2, No. 2, Winter 2018, pp. 32-43, (in Persian).
- 31. Tarighat, Amir, Moddares, Yaghoot and Mohammadi, Milad, "Thermodynamics evaluation of hydration and chemical shrinkage of combined cement and slag", Sharif University Journal, (in Press), (in Persian).
- 32. Soltani, Abolfazl, Amir Tarighat and Bayazidi, Mohammad, "Pozzolanic effects of meta-hallosite and silica fume on strength and durability of concrete", Ferdowsi Civil Engineering Journal, Vol. 32, No. 1, 2018, pp. 71-81, (in Persian).
- Tarighat, Amir and Tavakoli, Davoud, "Estimation of the Elastic Properties of Important Calcium Silicate Hydrates in Nano Scale - a Molecular Dynamics Approach", Journal of Rehabilitation in Civil Engineering, Volume 7, Issue 3, Summer 2019, pp. 60-78.
- 34. Tavakoli, Davoud, Tarighat, Amir and Beheshtian, Javad, "Nanoscale investigation of the influence of water on the elastic properties of C–S–H gel by molecular simulation", Journal of Materials: Design and Applications, Vol. 233, No. 7, 2019, pp. 1295-1306.
- 35. Tavakoli, Davoud, Gao, Peng, Tarighat, Amir and Ye, Guang, "Multi-scale Approach from Atomistic to Macro for Simulation of the Elastic Properties of Cement Paste", Iranian Journal of Science and Technology, Transactions of Civil Engineering, Shiraz University, June 2019.
- 36. Hasani, Mohammad and Tarighat, Amir, "Proposing new pozzolanic activity index based on water adsorption energy via molecular dynamics simulations", Construction and Building Materials, Volume 213, 20 July 2019, pp. 492-504.
- 37. Zehtab, Behnam and Tarighat, Amir, "Effects of aluminum incorporation in tobermorite structure on chloride diffusion: A Molecular dynamics simulation study", Tehran, University, Civil Engineering Infrastructure Journal, (re-submitted).
- 38. Bozorgirad, Maryam and Tarighat, Amir, "An investigation of the mechanical properties of the main phases of Portland cement using molecular dynamics", Journal of Materials for Renewable and Sustainable Energy, (submitted).

- 39. Mohammadi, Milad, Tarighat, Amir and Soltani, Abolfazl, "Effect of Ball Clay Addition with and without Silica Fume on Strength and Durability of Concrete", Periodica Polytechnica Civil Engineering, (submitted).
- 40. Karkhaneh, Sama, Tarighat, Amir and Ghaffarpour Hahromi, Saeed, "Thermodynamic Study of Cement Paste under Sulfate Attack: A Review Paper", Techno Press, June 2019, (submitted).

#### مقالات كنفرانسي

- 5. Ramezanianpour, A. A., Tarighat, A. and Araghian, H. R., "Application of Stochastic Differential Equation Based on Fick's Diffusion Theory for Concrete Carbonation", First Conference of Iranian Society of Civil Engineers, Tehran, Iran, Oct. 1999, (In Persian).
- 6. Ramezanianpour, A. A. and Tarighat, A., "Modeling Carbonation Process for Concretes with and without Condensed Silica Fume in Bandar-Abbas (Southern Iran) Ambient Conditions", Third International Conference on Concrete, Amirkabir University of Technology, Tehran, Iran, May 2000, (In Persian).
- 7. Ramezanianpour, A. A. and Tarighat, A., "Application of Monte Carlo Simulation Method for Stochastic Modeling of Concrete Carbonation Depth", Third International Conference on Concrete, Amirkabir University of Technology, Tehran, Iran, May 2000, (In Persian).
- 8. Ramezanianpour, A. A. and Tarighat, A., "Capillary Absorption Index and Its Application for Predicting Carbonation Depth of Concretes with and without Silica Fume", Fifth International Conference on Civil Engineering, Ferdowsi University, Mashhad, Iran, May 2000, (In Persian).
- Ramezanianpour, A. A., Tarighat, A. and Miyamoto, A., "Concrete Carbonation Modeling and Uncertainty Analysis of Stochastic Front Depth", Memoirs of the Faculty of Engineering, Yamaguchi University, Vol. 50, No. 2, Japan, 2000, <u>http://donald.lib-e.yamaguchiu.ac.jp/hokoku/502/09.pdf</u>
- Ramezanianpour, A. A. and Tarighat, A., "Modeling Carbonation of Concrete with and without Condensed Silica Fume for the Persian Gulf Region of Iran", Second International Symposium on Cement and Concrete Technology in the 2000s, Istanbul, Turkey, Sep. 2000.
- 11. Ramezanianpour, A. A. and Tarighat, A., "Pozzolans and Their Role in Dams", Fourth National Conference on Dam Engineering, Iran Power Research Center, Tehran, Iran, Feb. 2001, (In Persian).
- 12. Ramezanianpour, A. A. and Tarighat, A., "Neural Network Modeling of Concrete Carbonation", Seventh CANMET/ACI International Conference on Fly Ash, Silica Fume, Slag and Natural Pozzolans in Concrete, Chennai, India, July 2001.
- Ramezanianpour, A. A. and Tarighat, A., "Carbonation Models for Concrete Containing Silica Fume", Second International Conference on Engineering Materials, San Jose, California, USA, Aug. 2001.
- 14. Tarighat, A., "Evaluation of Concrete Structures by Extending the Results of 1D Tests to 2D Finite Element Analysis", First Conference on Strengthening & Retrofitting of Structures, Tehran, Iran, May 2002, (In Persian).
- 15. Tarighat, A., "Application of Neural Network for Prediction of Deterioration Depth/Rate of Affected Reinforced Concrete Structures", 5<sup>th</sup> Conference on Intelligent Systems, Mashhad, Iran, Oct. 2002, (In Persian).
- Tarighat, A., "Application of Neural Network Model and Monte Carlo Method Stochastic Concrete Durability Analysis", IABMAS'04, Second International Conference on Bridge Maintenance, Safety and Management, Kyoto, Japan, Oct. 2004.
- 17. Tarighat, A., "Development of Preventive Maintenance System for Port Structures in Iran", Invited Speaker, International Workshop on Lifetime Engineering of Civil Infrastructure, Ube, Japan, Nov. 2005.
- Tarighat, A., "Deterioration Modeling of Concrete Structures by Finite Element Method Based on One Dimensional Test Results", European Symposium on Service Life and Serviceability of Concrete Structures ESCS-2006, Helsinki, Finland, June 2006.
- Tarighat, A. and Miyamoto, A., "Bayesian Regression Modeling of Concrete Carbonation Depth for Inclusion in J-BMS", 3<sup>rd</sup> International Conference on Bridge Maintenance, Safety and Management, Porto, Portugal, July 2006.

- 20. Tarighat, Amir, Emoto, Hisao and Miyamoto, Ayaho, "Signal Processing of Experimental Results for Bridge Health Monitoring System(BHMS)", LIFETIME ENGINEERING OF CIVIEL INFRASTRUCTURE 2, Practical Maintenance Engineering Institute of Yamaguchi University, Ube, pp. 145-169, February 2008.
- 21. Tarighat, Amir and Erfanimanesh, Amir Hossein, "Artificial Neural Network Modeling of Chloride Diffusion Coefficient and Electrical Resistivity for Ordinary and High Performance Semi-Lightweight Concretes", The 34th Conference on OUR WORLD IN CONCRETE & STRUCTURES, Theme "Green Concrete", Singapore, 16-18 Aug 2009.
- 22. Tarighat, Amir and Erfanimanesh, Amir Hossein, "Studying the Correlation among Performance Related Parameters of Ordinary and High Strength Semi-Lightweight Concretes", International ECCE Conference EUROINFRA 2009 on the Current State and Challenges for Sustainable Development of Infrastructure, SYMPOSIUM 1: State Analysis and Condition Management of Buildings and Civil Infrastructure, October 15-16, 2009, Helsinki, Finland.
- 23. Tarighat, Amir, "Simulation of Concrete Diffusion-Based Deteriorations by Stochastic Partial Differential Equations (SPDEs)" Overseas Invited Lecturer, 4<sup>th</sup> Lifetime Engineering Symposium in Changsha, Hunan, China, 26<sup>th</sup>–28<sup>th</sup> October, 2009.
- 24. Tarighat, Amir and Khaledi, Khaled, "Artificial Neural Network Modeling of Compressive Strength and Modulus of Elasticity for Ordinary and High-Strength Normal and Semi-Lightweight Concretes", The Third International CEB•FIP Congress and Exhibition Think GLOBALLY build LOCALLY, THE PCI ANNUAL CONVENTION AND BRIDGE CONFERENCE I N, MAY 29— JUNE 2, 2010, WASHINGTON, USA.
- 25. Tarighat, Amir and Miyamoto, Ayaho, "Application of Bayes Belief Network for Concrete Bridge Condition Rating", IABMAS2010, The Fifth International Conference on Bridge Maintenance, Safety and Management, July 11-15, 2010, Philadelphia, Pennsylvania, USA.
- 26. Tarighat, Amir and Khaledi, Khaled, "Proposing the finite element model for concrete meso-scale structure by digital image processing", 6th National Congress of Civil Engineering, Semnan, Iran, 2011, (in Persian).
- 27. Tarighat, Amir and Eliyasi, Mehdi, "Fuzzy expert system for diagnosis of chemical deterioration of concrete structures", 6th National Congress of Civil Engineering, Semnan, Iran, 2011, (in Persian).
- 28. Tarighat, Amir and Dadar, Ehsan, "Application of new digital image and video processing methods for determining of mechanical properties of flexural members", 6th National Congress of Civil Engineering, Semnan, Iran, 2011, (in Persian).
- 29. Tarighat, Amir and Eliyasi, Mehdi, "Fuzzy expert system for diagnosis of mechanical deterioration of concrete structures", International Conference on Water Resources Management and Engineering (ICWRME2011), Zhengzhou, China, 2011.
- 30. Tarighat, Amir and Vossough, Shahram, "Application of the Principal Component Analysis as a Tool for Reinforced Concrete Corrosion Management", THE 2011 WORLD CONGRESS ON ADVANCES IN STRUCTURAL ENGINEERING AND MECHANICS (ASEM'11+), Seoul, Korea, 2011.
- 31. Tarighat, Amir and Dehghan, Hossein, "Overall investigation of algorithms for stochastic arrangement of particles in a closed 2D domain", Technical Conference of Iranian Ceramics Producers, Yazd, Iran, 2011, (in Persian).
- 32. Tarighat, Amir and Dehghan, Hossein, "Proposing a new algorithm for stochastic arrangement of non-conforming circles in a rectangle", Technical Conference of Iranian Ceramics Producers, Yazd, Iran, 2011, (in Persian).
- 33. Tarighat, Amir and Dehghan, Hossein, "Review of algorithms for ordered arrangement of circles in a closed 2D domain", Technical Conference of Iranian Ceramics Producers, Yazd, Iran, 2011, (in Persian).
- 34. Tarighat, Amir and Mahdipour, Shabnam, "Investigation and comparison of the performance of steel structures for progressive collapse", 2nd National Conference of Structure and Steel, Tehran, Iran, 2011, (in Persian).
- 35. Eliyasi, Mehdi, Tarighat, Amir and Dadar, Ehsan, "Fuzzy expert system for diagnosis of the alkali aggregate reaction in concrete structures", 9th International Congress of Civil Engineering, Isfahan, Iran, 2012, (in Persian).

- 36. Tarighat. Amir and Jalalifar, Fahimeh, "Performance evaluation of the reinforced concrete decks by different corrosion propagation models", 1st National Conference of Concrete Industry, Kerman, Iran, 2012, (in Persian).
- 37. Tarighat, Amir and Mahdipour, Shabnam, "Performance investigation of bending moment frame and concentric braced steel structures in progressive collapse", 2nd National Conference of Crisis Management, Tehran, Iran, 2012, (in Persian).
- 38. Tarighat. Amir and Jalalifar, Fahimeh, "Application of probabilistic structural reliability model incorporating health monitoring in condition assessment of reinforced concrete structure under corrosion", 10th International Congress on Advances in Civil Engineering, Ankara, Turkey, 2012.
- 39. Tarighat. Amir and Freidooni, Maryam, "Artificial neural network (ANN) model for damage detection of a concrete multi-span bridge", 10th International Congress on Advances in Civil Engineering, Ankara, Turkey, 2012.
- 40. Tarighat. Amir, Hajian, Alireza and Mousavi, Seyed Rouhollah, "Application of morphology and fuzzy image processing for automatic detection of concrete surface cracks", National Conference of Computer Science and Engineering, Najafabad, Iran, 2012, (in Persian).
- 41. Tarighat, Amir, Soltani, Abolfazl and Zamanidoost, Masoomeh, "Evaluation of metakaolinite effect on the mechanical properties and durability concrete for railway structures", 3rd International Conference of Recent Advancements in Railway Engineering (ICRARE2013), Tehran, Iran, 2013, (in Persian).
- 42. Sobhani, Bahman and Tarighat, Amir, "Artificial Neural Network model for high performance concrete mix design", 7th National Congress of Civil Engineering, Zahedan, Iran, 2013, (in Persian).
- 43. Tarighat, Amir, Soltani, Abolfazl and Zamanidoost, Masoomeh, "Investigan of metakaolinite effect on the mechanical properties and durability of concrete", 7th National Congress of Civil Engineering, Zahedan, Iran, 2013, (in Persian).
- 44. Tarighat, Amir, Mohammadi Bizhaem, Mehdi and Afzali Naniz, Oveys, "Effect of different values of steel slag and wollastonite on mechanical properties of concrete", 5th National Annual Conference of Concrete, Tehran, Iran, 2013, (in Persian).
- 45. Tarighat, Amir and Yazdani, Samira, "Effect of wollastonite on mechanical properties of concrete", 5th National Annual Conference of Concrete, Tehran, Iran, 2013, (in Persian).
- 46. Tarighat, Amir, Afzali Naniz, Oveys and Mohammadi Bizhaem, Mehdi, "Investigation of the mechanical properties of concrete containing silica fume and wollastonite", 5th National Annual Conference of Concrete, Tehran, Iran, 2013, (in Persian).
- 47. Tarighat, Amir and Moazzenchi, Sanaz, "Effect of Laterite soil in geopolymer brick", 5th National Annual Conference of Concrete, Tehran, Iran, 2013, (in Persian).
- 48. Tarighat, Amir and Moazzenchi, Sanaz, "Production of environmental friendly bricks by geopolymerization of Laterite soil", International Conference on Civil Engineering Architecture & Urban Sustainable Development, Tabriz, Iran, 2013, (in Persian).
- 49. Tarighat, Amir and Afzali Naniz, Oveys, "Effect of wollastonite and silica fume on compressive and flexural strengths of concrete", International Conference on Civil Engineering Architecture & Urban Sustainable Development, Tabriz, Iran, 2013, (in Persian).
- 50. Tarighat, Amir and Mohammadi Biznaem, Mehdi, "Effect of slag and wollastonite on compressive and flexural strengths of concrete", International Conference on Civil Engineering Architecture & Urban Sustainable Development, Tabriz, Iran, 2013, (in Persian).
- 51. Tarighat, Amir and Freidooni, Maryam, "Application of back propagation neural network for structural damage detection of concrete bridges", Nationa Conference of Applied Civil Engineering and New innovations, Karaj, Iran, 2014, (in Persian).
- 52. Tarighat, Amir and Yazdani, Samira, "Effect of wollastonite on mechanical properties of concrete", 2nd National Conference of New Materials and Structures in Civil Engineering, Isfahan, Iran, 2014, (in Persian).
- 53. Tarighat, Amir and Mohammadi Bizhaem, Mehdi, "Effect of slag and wollastonite on compressive strength and sorptivity of concrete", 8th National Congress of Civil Engineering, Babol, Iran, 2014, (in Persian).
- 54. Tarighat, Amir and Yazdani, Samira, "Effect of wollastonite on mechanical properties of concrete", 8th National Congress of Civil Engineering, Babol, Iran, 2014, (in Persian).

- 55. Tarighat, Amir nd Afzali Naniz, Oveys, "Experimental investigation of compressive strength and electrical conductivity of concretes containing wollastonite and silica fume", 8th National Congress of Civil Engineering, Babol, Iran, 2014, (in Persian).
- 56. Tarighat, Amir and Moazzenchi, Sanaz, "Environmental friendly production of brick", 1st National Conference of Architecture, Civil Engineering and bio-city environment, Hamedan, Iran, 2014, (in Persian).
- 57. Tarighat, Amir, Soltani, Abolfazl and Bayazidi, Mohammad, "Pozzolanic effect of meta-hallosite and silica fume on increase of compressive strength and electrical conductivity of concrete", 1st Global Conference of development in Civil Engineering, Architecture, Electrical and Mechanical Engineering, Golestan, Iran, 2014, (in Persian).
- 58. Tarighat, Amir, Soltani, Abolfazl and Bakhtiyari, Vahid, "Experimental investigation of compressive strength and ultrasonic velocity of concrete containing ball clay and silica fume", 1st Global Conference of development in Civil Engineering, Architecture, Electrical and Mechanical Engineering, Golestan, Iran, 2014, (in Persian).
- 59. Tarighat, Amir, Soltani, Abolfazl and Bakhtiyari, Vahid, "Experimental investigation of compressive strength and electrical conductivity of concrete containing ball clay and silica fume", 1st National Conference of Iranian Structural Engineering, Tehran, Iran, 2015, (in Persian).
- 60. Tarighat, Amir and Mohammad Beigi, Adel, "Damage detection of concrete bridge decks by wavelet method", 1<sup>st</sup> National Conference of Iranian Structural Engineering, Tehran, Iran, 2015, (in Persian).
- 61. Tarighat, Amir and Mohammad Beigi, Adel, "Damage detection of concrete bridge decks by wavelet analysis method", 4th International Bridge Conference, Tehran, Iran, 2015, (in Persian).
- 62. Tarighat, Amir, Soltani, Abolfazl and Bayazidi, Mohammad, "Experimental investigation of compressive strength and durability of concretes containing meta-hallosite and silica fume", 1<sup>st</sup> National Conference of Civil Engineering, Unbanning and Sustainable Development, Tehran, Iran, 2015, (in Persian).
- 63. Ahmadnejad Zarnaghi, Amir, Ghafarpour Jahromi, Saeed and Tarighat, Amir, "Effect of soilstructure interaction on flexural concrete frames under earthquake loading", 2nd National Conference of Applied Researches in Civil Engineering, Architecture and Urban Management, Tehran, Iran, 2015, (in Persian).
- 64. Khaledi, Khaled, Tarighat, Amir and Fanaee, Nader, "Finite element modeling of two-phase hardened cement paste and aggregate in concrete by digital image processing", International Conference of Science and Engineering, Dubai, United Arab Emirates, 2015, (in Persian).
- 65. Rostami, Rouhollah, Tarighat, Amir and Soltani, Abolfazl, "Comparison effects of meta-kaolinite, zeolite and silica fume pozzolans on durability and density of concrete", 3rd National Conference and 1st International Conference of Applied Researches in Civil Engineering, Architecture and Urban Management, Tehran, Iran, 2016, (in Persian).
- 66. Tarighat, Amir, Soltani, Abolfazl and Rostami, Rouhollah, "Comparison effects of meta-kaolinite, marl and silica fume on durability and density of concrete by non-destructive tests", 2nd International Conference of Cement and Concrete Industry and 2nd National Conference of Civil Engineering, Urbanning and Sustainable Development, Tehran, Iran, 2016, (in Persian).
- 67. Rostami, Rouhollah, Tarighat, Amir and Soltani, Abolfazl, "Comparison effects of meta- kaolinite, zeolite and silica fume pozzolans on tensile strength of concrete", International Congress of Innovation in Engineering and Technology development, Tabriz, Iran, 2016, (in Persian).
- 68. Tarighat, Amir, Moddares, Yaghoot and Mohammadi, Milad, "Thermodynamics modeling of cementitious mortars containing slag exposed to sulfate environments", 2nd International Conference of Research Innovations in Civil Engineering, Architecture and Urban Management, Tehran, Iran, 2016, (in Persian).
- 69. Tarighat, Amir, Mohammadi, Milad and Moddares, Yaghoot, "Thermodynamics modeling of cement hydration containing slag", 2nd International Conference of Research Innovations in Civil Engineering, Architecture and Urban Management, Tehran, Iran, 2016, (in Persian).
- 70. Tarighat, Amir and Kian, Hamid, "Effect of corrosion based on Chloride ion on the reinforced concrete materials", 2nd National Conference of Civil Engineering Researches, Tehran, Iran, 2016, (in Persian).

- 71. Tarighat, Amir, Mohammadi, Milad and Moddares, Yaghoot, "Thermodynamics modeling of cement hydration containing silica fume", 8th Iran National Conference of Concrete, Tehran, Iran, 2016, (in Persian).
- 72. Tarighat, Amir and Moddares, Yaghoot, "Investigation of sulfate attack mechanism in mortars containing silica fume by thermodynamics modeling", 8th Iran National Conference of Concrete, Tehran, Iran, 2016, (in Persian).
- 73. Nguyen, Kim Cuong, Kawamura, Kei, Tarighat, Amir, Matsumoto, Junji and Shiozaki, Masando, "Development of semi-automatic crack detection software for concrete structures", 11th fib International PhD Symposium in Civil Engineering, Tokyo, Japan, 2016.
- 74. Mousavi Natanzi, Seyed Mohammad Amin and Tarighat, Amir, "Health monitoring of structures by application of smart cell phone built in accelerometer with digital image verification", 4th International Congress of Civil Engineering, Architecture and Urban Development, Tehran, Iran, 2016, (in Persian).
- 75. Tarighat, Amir and Tavakoli, Davoud, "Investigation on Mechanical Properties of Gypsum at Nano Scale by Molecular Dynamics Simulation", International Conference on Smart Materials Technologies (ICSMT 2016), Moscow, Russia, May 18-20, 2016.
- 76. Tarighat, Amir, Soltani, Abolfazl and Safilou, Hesamedin, "Experimental investigation of marl, slag and silica fume effects on tensile strength of concrete", 2nd National Conference of Modern Research Findings in Civil Engineering, Architecture and Urbanism, Gorgan, Iran, 2017, (in Persian).
- 77. Tarighat, Amir, Soltani, Abolfazl and Safilou, Hesamedin, "Review study on marl usage as cement replacement", 2nd National Conference of Modern Research Findings in Civil Engineering, Architecture and Urbanism, Gorgan, Iran, 2017, (in Persian).
- 78. Tarighat, Amir and Gharedaghi, Abdullah, "Effect of corrosion on the load bearing capacity of reinforced concrete columns", 2nd International Conference of New Horizons in Civil Engineering, Architecture and Urban and Cities Cultural Management, Tehran, Iran, 2017, (in Persian).
- 79. Tarighat, Amir and Gharedaghi, Abdullah, "Effect of corrosion on the load bearing capacity of reinforced concrete columns", 2nd International Conference of Urban, Civil and Architecture Engineering, Tehran, Iran, 2017, (in Persian).
- 80. Mousavi Natanzi, Seyed Mohammad Amin and Tarighat, Amir, "Damage detection in cantilever beam by smart cell phone built in accelerometer", 4th National Conference of Applied Researches in Civil Engineering, Architecture and Urban Management and 3rd Conference and Exhibition of Mass Producers of Houses and Buildings in Tehran Province, Tehran, Iran, 2017, (in Persian).
- 81. Soltani, Abolfazl, Tarighat, Amir and Hosseini, Seyed Reza, "Effects of natural meta-tuff and silica fume on the increase of the concrete tensile strength", 2nd International Conference of Civil Engineering, Architecture and Crisis Management, Tehran, Iran, 2017, (in Persian).
- 82. Tarighat, Amir, Soltani, Abolfazl, and Hosseini, Seyed Reza, "Effect of meta-tuff and silica fume on the improvement of the concrete compressive strength", 2nd International Conference of Civil Engineering, Architecture and Crisis Management, Tehran, Iran, 2017, (in Persian).
- 83. Tarighat Amir, Soltani, Abolfazl and Mousave Dehmourdi, Ali, "Investigation of modulus of rupture, ultrasonic pulse velocity and electrical resistivity in concretes containing natural zeolite and silica fume", International Conference of Civil Engineering, Architecture and Urban of Iran, Tehran, Iran, 2017, (in Persian).
- 84. Tarighat, Amir and Mohammadi, Milad, "Thermodynamics investigation of void solution during hydration of mortars containing cement and slag", 9th National Conference of Iran Concrete, Tehran, Iran, 2017, (in Persian).
- 85. Nguyen, C. K., Kawamura, K., Shiozaki, M. and Tarighat, A., "Development of an Automatic Crack Inspection System for Concrete Tunnel Lining Based on Computer Vision Technologies", IOP Conf. Series: Materials Science and Engineering, 371, 2018.
- 86. Karkhane, Sama, Tarighat, Amir and Ghaffarpour Jahromi, Saeed, "Simulation of sulfate attack on Concrete", 1<sup>st</sup> International Conference Interdisciplinary Studies in Management and Engineering, Tehran, Iran, University of Tehran, 14 March 2019, (in Persian).
- 87. Bashshash, Ali, Tarighat, Amir and Bohlouli, Navid, "Investigation of poly propylene fiber addition on erosion strength increase of water transmission concrete canals", Concerence of civil engineering, arcltecture ad urbanism of Islamic World countries, Tabriz, Iran, 2019, (in Persian).

88. Adresi, Mostafa, Tarighat, Amir, Soltani, Abolfazl and Yekrangnia, Mohammad, "Estimation of remaining service life and damage level of concrete pavements based on the self-diagnosis property", 3<sup>rd</sup> National Conference of Concrete Pavements, Tehran, Iran, Iran University of Science and Technology, April 2019, (in Persian), (Awarded paper).

## کتاب های منتشر شده

- 1. National Code for Concrete Durability for Persian Gulf and Oman Sea Environmental Conditions, Building and Housing Research Center, 2005, (in Persian).
- 2. Volume 9 of Iranian National Code: Design and Practice of Reinforced Concrete Buildings, 2006, (in Persian).
- 3. A. Miyamoto & A. Tarighat, "3rd Choshu-London Memorial Symposium in Lifetime Engineering of Civil Infrastructure", Ube, Japan, January 2007.
- 4. A. Tarighat & A. Miyamoto, "State-of-the-Art Report of Bridge Health Monitoring", Second part of the book Questionnaire Study on Management and Health Monitoring of Bridges, Final report of Investigation Results, Ube, Japan, June 2007.
- 5. Code No. 511, Guidebook of seismic rehabilitation of bridges, Executive technical office of Iran Presidency Organization, Member of scientific/technical code team, 2011, (in Persian).
- 6. Chapter 21 of book "Fuzzy Inference System" entitled "Fuzzy Inference System as a Tool for Management of Concrete Bridges", Intech Open Access Publisher, Croatia, January, 2012.
- 7. Tarighat, Amir and Jila, Pashaee, Live load capacity rating of steel bridges, Mashghe Shab Publishing Publishing Company, Ordered by Road and Urbanism Ministry, Road Maintenance and Transportation Organization, 2018, (in Persian).
- 8. Artificial intelligence concepts and applications for civil engineering (in Persian), ready for publication.

اختراعات

- Tarighat, Amir and Moazzenchi, Sanaz, "Lateritic Brick and Concrete", Patented by the Iranian Organization of Scientific and Industrial researches, 2016.
- Two more are submitted

### عضويت ها

- Iranian Concrete Institute
- Tehran Construction Engineers Organization
- Research member of the Practical Maintenance Engineering Institute of Yamaguchi University (REHATEC), Yamaguchi University, Ube, Japan, 2007