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Civil & Environmental Engineering Department
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EDUCATION

2016

Ph.D. Civil Engineering, University of Ottawa, Ottawa, Canada.

Thesis Title: Seismic Retrofitting of Conventional Reinforced Concrete Moment Resisting Frames Using Buckling Restrained Braces

Advisors: Prof. Murat Saatcioglu and Prof. Dan Palermo

Courses completed with a GPA of A+ (3.92/4)

Thesis Link:

<http://dx.doi.org/10.20381/ruor-5884>

<http://hdl.handle.net/10393/34755>

1996

M.Sc. Civil Engineering, University of Technology, Baghdad, Iraq.

Thesis Title: Analysis of Soil-Structure Interaction in Tunnels Using the Finite Element Method

1993

B.Sc. Civil Engineering, Al-Nahrain University, Baghdad, Iraq

Final Year Project: Dynamic Analysis of Arch Bridge

EXPERIENCE

Associate Professor

Department of Civil and Environmental Engineering, University of Sharjah, Sharjah, UAE (June 2024 – Present)

Assistant Professor

Department of Civil and Environmental Engineering, University of Sharjah, Sharjah, UAE (Jan. 2017 – May 2024)

A/Director, Facility Management and Planning Department, University of Sharjah, Sharjah, UAE (Dec. 2019 – Nov. 2020)

Teaching Assistant

Department of Civil Engineering, University of Ottawa, Ottawa, Canada. (Sept. 2008 – June 2016)

Lecturer

Construction Engineering Department, Higher Colleges of Technology, Sharjah, UAE (Sept. 2005 – Aug. 2008)

Lecturer

Department of Civil and Environmental Engineering, University of Sharjah, Sharjah, UAE (Sept. 2000 – Aug. 2005)

Senior Structural Design Engineer

Oryx Engineering Consultants, Sharjah, UAE

Oct. 1998 – Aug. 2000

Civil & Structural Design Engineer

ICEP Engineering Consultants Sdn. Bhd, Kuala Lumpur, Malaysia.

Mar. 1997– Sept. 1998

COURSES TAUGHT:

A- Graduate courses:

0401711 Bridge Engineering

0401513 Advanced Concrete Behavior and Design

0401519 Special Topics in Structural Engineering

B- Undergraduate courses

Structural Steel Design, Reinforced Concrete Design I, Structural Analysis, Mechanics of Materials Statics, Dynamics, Engineering Economics, Materials for Civil Engineering Laboratory, Introduction to Engineering.

C- Final Year Students Design Projects:

Senior Design Project I and II

D- Supervision of Graduate Students

1. Hussain Osama Hussain Salah (2024). Advanced Geotechnical and Mechanical Characterization of Hydraulically Dredged Gravelly Soils for UAE Land Reclamation. Ph.D. Thesis, University of Sharjah (Co-supervisor), in progress.
2. Humam Al Sebai (2024). Material Constitutive Relations for Finite Element Modeling of Structural Elements Incorporating Macro Synthetic Fibers. Ph.D. Thesis, University of Sharjah (Co-supervisor), in progress.
3. Hadif Al Suwaidi (2024) Effect of Grout and Duct Materials on Bond Behavior of Prestressing Strands Subjected to Accelerated Corrosion and Implications on Structural Response. Ph.D. Thesis, University of Sharjah (Co-supervisor), in progress.
4. Mazen Shrif (2023). Shear Strength Predictive Model for Corrugated Web Steel Beams using Machine Learning, M.Sc. Thesis, University of Sharjah (Co-supervisor).
5. Usama Faisal Al Sabouni (2022). Progressive Collapse of Reinforced Concrete Building: Parametric Study, M.Sc. Thesis, University of Sharjah (Main supervisor).
6. Ahmed Fath Elrahman Fageeri (2021). Numerical and Experimental Evaluation of a Steel Damper for Steel Structures. M.Sc. Thesis, University of Sharjah (Co-supervisor).

7. Aghyad Ibrahim Almasri (2020). Value Engineering Framework for Evaluating Structural Systems of Building Construction: The Case of Steel Structure in Villa Construction, M.Sc. Thesis, University of Sharjah. (Co-supervisor).
8. Ibrahim Al-Jumaili (2019). Experimental compression tests on the Stability of Structural Steel Tubular Props, M.Sc. Thesis, University of Sharjah (Main supervisor).

E- Participation in Thesis and Oral Examination Committees:

1. Mohamad Tarabin (2023). Investigation of the Bond Behavior Between Polyethylene ECC and Deformed Steel Rebar Under Various Load Conditions. M.Sc. Thesis, University of Sharjah. (Internal examiner)
2. Mohammad ALAyoub (2022). An integrated methodology to select bridge structural system during the conceptual design phase. M.Sc. Thesis, University of Sharjah. (Internal examiner)
3. Omar Adel Mostafa (2021). 3D Finite Element Modeling of Suction Caissons used as Foundations for Offshore Wind Turbines in Clayey Soils. M.Sc. Thesis, University of Sharjah. (Internal Examiner)
4. Firass M. Al Marawi (2021). Fiber Reinforced Polymers Reinforced Concrete Beams: Reliability Analysis and Calibration of Strength Reduction Factors. M.Sc. Thesis, University of Sharjah. (Internal Examiner)
5. Mohamad Ihsan Taklas (2021). Concrete-to-Concrete Shear Friction Behavior Under Cyclic Loading. M.Sc. Thesis, University of Sharjah. (Internal Examiner)
6. Ahmed Hassan (2021). Mechanical Properties of Geopolymer Concrete: Statistical Analysis and Prediction Models. M.Sc. Thesis, University of Sharjah. (Internal Examiner)
7. Saif Uddin M. Al-Khaled (2019). Stability Analysis of Thin-Walled Steel Multi-Column Bundles. M.Sc. Thesis, University of Sharjah. (Internal Examiner)

GRADUATE COURSES COMPLETED

Credited (Ph.D.)

- CVG 5155 Earthquake Engineering
- CVG 6307 Bridge Design
- CIVE 5104 Earthquake Engineering and Analysis
- CVG 6313 Seismic Analysis and Design of Reinforced Concrete Structures
- CVG 5144 Advanced Reinforced Concrete

Audited (Ph.D.)

- CIVE 5106 Dynamics of Structures
- CVG 6305 Advanced Composite Structures
- CVG 6304 Rehabilitation of Concrete Structures
- CVG 5156 Finite Element Methods I
- CIVE 5708 Finite Elements in Field Problems
- CVG 5149 Structural Stability

Credited (M.Sc.)

- Numerical Analysis
- Applied Mechanics
- Earth Structures
- Advanced Foundation Engineering
- Soil Investigation
- Advanced Soil Mechanics
- Flow-through Porous Media
- Soil Improvements

TEACHING INTERESTS

Undergraduate Courses:

- Statics
- Dynamics
- Mechanics of Materials I, II
- Theory of Structures I, II
- Reinforced Concrete Design I, II
- Steel Structures I, II
- Prestressed Concrete
- Special Topics in Structural Engineering

Graduate Courses:

- Earthquake Engineering
- Structures Seismic Analysis and Design
- Dynamics of Structures
- Design of Blast Resistant Structures
- Advanced. Reinforced Concrete
- Advanced Composite Structures
- Bridge Design
- Finite Element Method
- Rehabilitation of Concrete Structure

RESEARCH EXPERIENCE

Principal Investigator (PI)

- Targeted Research Grant, University of Sharjah, 2023. "Development of seismic resistant hybrid FRP Steel reinforced concrete shear walls." Amount: 200,000 AED. (Submitted)
- Competitive Research Grant, University of Sharjah, 2022. Project Title "Progressive Collapse of Reinforced Concrete Building and Strengthening Assessment Through the Use of FRP: Parametric Study." Amount: 114,000 AED.
- Competitive Research Grant, University of Sharjah, 2018/2020. Project Title "Seismic Retrofitting of Reinforced Concrete Buildings using Buckling Restrained Braces and Innovative Materials". Amount: 80,000 AED.
- SEED fund Grant, University of Sharjah, 2017/2019. Project Title "Seismic Vulnerability Assessment of UAE Low Rise Reinforced Concrete Buildings and Suggested Retrofitting Methods". Amount: 40,000 AED.

Co- Investigator (CI)

- External Funded Project, 2024. "Development of Seismic Fragility Curves for Bridge Infrastructure: A Generalized Methodology for Enhanced Resilience in the the UAE and Malaysia. Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA) – United Arab Emirates (UAE). 82,000 (RM)
- Targeted Research Grant, University of Sharjah, 2023. "Development of earthquake-resistant concrete elements using engineered cementitious composites (ECC)". Amount: 200,000 AED. (Submitted)
- Competitive Research Grant, University of Sharjah, 2022. Project Title: "Investigating the Punching Shear Behavior of Fiber Reinforced Polymer (FRP) Flat Slabs Incorporating Macro-Synthetic Fibers." Amount: 114,000 AED. (Submitted)
- Competitive Research Grant, University of Sharjah, 2022. Project Title: " Experimental Study on Shear Strength of Steel Beams with Sinusoidally Corrugated Webs." Amount: 120,000 AED.
- SEED Grant, University of Sharjah, 2022/2023. Project Title " Functionally Graded Plastic Aggregate Concrete." Amount: 40,000 AED.
- College of Engineering Dean's office, University of Sharjah, Project Title "Integration of Virtual Reality and Fabrication for Improving Sustainable Design and Livability in the UoS Campus". Amount: 40,000 AED.

Research Assistant

The Canadian Seismic Research Network fund award, University of Ottawa, Ottawa, Canada. 2009-2015
Project Title "Seismic Retrofitting of Conventional Reinforced Concrete Moment Resisting Frames Using Buckling Restrained Braces.

Research Engineer

Research grant, Al-Farouq Contracting Company, Baghdad, Iraq, 1994-1996. Project Title "Analysis of Soil-Structure Interaction in Tunnels Using the Finite Element Method."

RESEARCH INTERESTS

- Seismic risk mitigation of concrete structures
- Design of earthquake-resistant concrete structures
- Seismic repair and retrofit of concrete structures
- Buckling restrained braces for seismic risk mitigations
- Performance-Based Seismic Design
- Dynamic time history inelastic analysis
- Large-scale testing and design of structural frames

PATENTS

- 1- Title: A New Type of Radially Perforated Plate Damper for Using in Steel Beam-to-Column Connections. Inventors: Mohammad Almohammad-albakkar and Zaid Al-Sadoon. (2023). Status: Submitted to the Technology Transfer Unit, Office of the Vice Chancellor for Research and Graduate Studies. UOS-083-2023, Aug. 29, 2023.
- 2- Title: Apparatus for Thaw Detection of A Frozen Item and Method of Manufacturing The Same; Inventors: Aktham Al Ahababi, Muhannad Abd, **Zaid Al-Sadoon**, and Mohamed Al Hemaury. (2023). US Patent and Trademark Office. Patent application No. 17499188, US Non-Provisional Patent. Filed 12/10/2021. The University of Sharjah. Patent No.: US 11561137, Publication Date: January 24, 2023. <https://patentcenter.uspto.gov/applications/17499188>
- 3- Title: Seismic Retrofitting Buckling Restrained Braces; Inventors: **Zaid, Al-Sadoon A**, SAATCIOGLU MURAT, PALERMO DANIEL, U.S. Patent Cooperation Treaty, International Application No.: PCT/IB2015/058588, International Filing Date: 06.11.2015. Pub. No.: WO/2016/071879, Publication Date: 12.05.2016
https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2016071879&_fid=CA197859417
- 4- Title: SEISMIC RETROFITTING BUCKLING RESTRAINED BRACE; Inventors: **Zaid, Al-Sadoon A**, SAATCIOGLU MURAT, PALERMO DANIEL, Canadian Intellectual Property Office, Application Number: CA 2966846, Application Date: 06.11.2015, Publication Number: 2966846, Publication Date: 12.05.2016.
https://patentscope.wipo.int/search/en/detail.jsf?docId=CA197859417&_fid=CA197859417
http://brevets-patents.ic.gc.ca/opic-cipo/cpd/eng/patent/2966846/summary.html?type=number_search&tabs1Index=tabs1_1
- 5- Title: Seismic retrofitting of conventional reinforced concrete anti-bending frame by using buckling restrained brace. Inventors: **Zaid, Al-Sadoon A**, SAATCIOGLU MURAT, PALERMO DANIEL, The State Intellectual Property Office of the People's Republic of China (CNIPA), Application

Number: 2015000072833, Application Date: 06.11.2015, Publication Number: 107109841, Publication Date: 29.08.2017.

<https://patentscope.wipo.int/search/en/detail.jsf?docId=CN204771485&fid=CA197859417>

PUBLICATIONS

Papers in Refereed Journals:

1. Hadif Al Suwaidi, **Zaid Al-Sadoon**, Salah Al-Toubat; Samer Barakat, Mohamed Maalej (2024). Evaluation and Restoration of Chloride-Induced Corrosion in Post-Tensioned Concrete Structures: A Case Study from the UAE. **Status: Ready for submission**
2. Ahed Habib, **Zaid A. Al-Sadoon**, Murat Saatcioglu, Ausamah AL Hourri, Mohamed Maalej, Salah Al-Toubat, Mazen Shrif. (2024). A Review on the Seismic Behavior of Squat Reinforced Concrete Shear Walls. **Status: Ready for submission**
3. Hadif Al Suwaidi, Ahed Habib, **Zaid A. Al-Sadoon**, Mohamed Maalej, Salah Al-Toubat, Samer Barakat, (2024). Enhancing Durability in Post-Tensioned Concrete Structures: Strategies Review for Mitigating Chloride-Induced Corrosion. Discover Materials. **Status: Ready for submission**
4. Ahed Habib, **Zaid A. Al-Sadoon**, Murat Saatcioglu, M. Talha Junaid, Salah Al-Toubat, Samer Barakat, Mohamed Maalej (2024). Developing Machine Learning Models for Estimating the Shear Capacity of Barbell Squat Shear Walls Under Seismic Forces. Structures. **Status: Submitted**
5. Mohammad Shooshtari, **Zaid A. Al-Sadoon**, Murat Saatcioglu, Ahed Habib (2024). Instantaneous Optimal Control Algorithm-Based Active Control of Reinforced Concrete Structures Subjected to Strong Ground Motions. Computers and Structures. CAS-D-24-01213. **Status: Submitted**
6. Ahed Habib; Ausamah AL Hourri; **Zaid A. Al-Sadoon**; Samer Barakat (2024). A Critical Review on Energy Dissipation Benefits and Design and Analysis Challenges of Multi-Stage Friction Pendulum Bearings. International Journal of Dynamics and Control. IJDY-D-24-00764. **Status: Submitted**
7. M. Almohammad-albakkar, **Zaid A. Al-Sadoon**, Moussa Leblouba (2024). Enhancing Seismic Resilience of Beam-to-Column Connections: Numerical Study on Radially Perforated Plate Damper for Using in Beam Column Connections. Structures. S-24-06211. **Status: Under Review**
8. Ahed Habib, M. Talha Junaid, Samir Dirar, Samer Barakat, **Zaid A. Al-Sadoon** (2024). Machine Learning-Based Estimation of Concrete Columns Stiffness Modifiers for Improved Accuracy in Linear Response History Analysis. Journal of Earthquake Engineering. **Status: Under Review**
9. **Zaid A. Al-Sadoon**, M Talha Junaid, Usama Al-Sabouni, Saleh Abu Dabous, Haytham Almaghari (2024). Evaluating the Resilience of Pre-Code Reinforced Concrete Buildings to Progressive Collapse: A Numerical Analysis Approach. Results in Engineering. RINENG-D-24-03281. **Status: Under Review**
10. M. Almohammad-albakkar, **Zaid A. Al-Sadoon** (2024). Enhancing Seismic Resilience of Beam-to-Column Connections: An In-depth Analysis of Steel Slit Dampers in Structural Engineering. Innovative Infrastructure Solutions. IISS-D-24-00761. **Status: Under Review**
11. Moussa Leblouba, **Zaid A. Al-Sadoon**, **Samer Barakat**, **Ahmed Fageeri**, **Raghad Awad** (2024). Assessing the Performance of a Novel Granular Material-Based Energy Dissipation Box Damper for Earthquake-Resistant Structures. Journal of Building Engineering. JBE-D-24-06399. **Status: Under Review**

12. Mazen Shrif, **Zaid A. Al-Sadoon**, Ahed Habib (2024). Seismic Performance and Configuration Assessment of Deficient Steel Frames Equipped with Buckling Restrained Braces. Journal of Rehabilitation in Civil Engineering. JRCE-2404-2034. **Status: Under Review**
13. Hussein Hamada, Farid Abed, **Zaid A. Al-Sadoon**, Arhum Hassan (2024). Enhancing Concrete Strength and Microstructure with Basalt and Steel Fibers in Acid and Base Environments Incorporating Desert Sand. International Journal of Concrete Structures and Materials. CSTR-D-23-00234. **Status: Under Review**
14. Moustafa M. Kassem; Fadzli M. Nazri, **Zaid A. Al-Sadoon**, Salmia Beddu (2024). Assessing the Impact of Multi-directional Ground Motion on RC Frame Buildings: A Data Driven Approach using Vulnerability Functions and Regression Analysis. Bulletin of Earthquake Engineering. BEEE-D-24-00519. **Status: Accepted**
15. Ausamah AL Hourri, Ahed Habib, **Zaid A. Al-Sadoon** (2024). Artificial Intelligence Based-Design and Analyses of Passively Control Structures: An Overview. Journal of Soft Computing in Civil Engineering. **Status: Accepted**
16. Ahed Habib, Samer Barakat, Samir Dirar, Salah Al-Toubat, **Zaid A. Al-Sadoon** (2024). Evaluating Suitability of Regression Models in Small Data Regimes Using Concrete with Recycled Copper Tailings as a Case Study. Sustainable Structures. SUST-24-007. **Status: Accepted**
17. **Zaid A. Al-Sadoon**, Murat Saatcioglu, Dan Palermo (2024). Enhancing Seismic Resilience of Non-Ductile RC Frames with a Novel Buckling Restrained Brace System: A Nonlinear Analysis Approach. Structures. <https://doi.org/10.1016/j.istruc.2024.107089>
18. Mazen Shrif, Samer Barakat, Zaid A. Al-Sadoon, and Omar Mostafa (2024). Shear Strength of Trapezoidal-Corrugated Steel Webs Prediction Model Using Optimized Neural Networks. Heliyon. <https://doi.org/10.1016/j.heliyon.2024.e35778>
19. Humam MHD Sebai, **Zaid A. Al-Sadoon** , Salah Altoubat, Mohamed Maalej (2024). Constitutive Relations for Modeling Macro Synthetic Fiber Reinforced Concrete. Civil Engineering Journal. <https://doi.org/10.28991/CEJ-2024-010-06-06>
20. Mazen Shrif, **Zaid A. Al-Sadoon**, Samer Barakat, Ahed Habib, and Omar Mostafa (2024). Optimizing Gene Expression Programming to Predict Shear Capacity in Corrugated Web Steel Beams. Civil Engineering Journal. <https://doi.org/10.28991/CEJ-2024-010-05-02>
21. Hussein Hamada, Farid Abed, **Zaid A. Al-Sadoon**, Adnan Alashkar (2024). Enhancing Pozzolanic Activity of Fly Ash through Dry and Wet Milling: A Comparative Study for Sustainable Construction Material Enhancement. Journal of CO2 Utilization. <https://doi.org/10.1016/j.jcou.2024.102811>
22. **Zaid A. Al-Sadoon**, M. Almohammad-albakkar (2024). Enhancing Seismic Performance in Steel Braced Frames using Steel Slit Dampers: A Comprehensive Review and Applied Perspectives. Civil Engineering Journal. <https://doi.org/10.28991/CEJ-2024-010-04-019>
23. Abdullah M. Sagheer, Mohammad AlHamaydeh, Jawad Fayaz, and Zaid A. Al-Sadoon (2024). Deep Learning-Based Modeling of the Cyclic Behavior of Replaceable Fuse Buckling-Restrained Braces (BRBs). Structures. <https://doi.org/10.1016/j.istruc.2024.106484>
24. Hussein Hamada, Farid Abed, **Zaid A. Al-Sadoon**, Zeinah Elnassar, Gaith Nasrullah (2024). Effect of Basalt and Steel Fibers on the Microstructure and Strength of Concrete with Desert Sand. Arabian Journal for Science and Engineering. AJSE-D-23-11062. <https://doi.org/10.1007/s13369-024-08930-w>
25. Nadia Nassif, M Talha Junaid, **Zaid A. Al-Sadoon**, Khaled Hamad, Salah Altoubat (2024). Performance-Based Prediction of Shear and Flexural Strengths in Fiber-Reinforced Concrete

- Beams via Machine Learning, Structural Engineering International. TSEI 2310520. <https://doi.org/10.1080/10168664.2024.2310520>
26. Raghad Awad, Aroob Al Ateyat, M. Talha Junaid, **Zaid A. Al-Sadoon**, Salah Altoubat, Mohammed Maalej, and Samer Barakat (2024). Punching Shear Capacity of Fiber-Reinforced Concrete Suspended Slabs: Journal of Building Engineering. Vol. 83, 108433. <https://doi.org/10.1016/j.jobe.2023.108433>
 27. **Zaid A. Al-Sadoon**, Samer Barakat, Farid Abed, Aroob Al Ateyat (2023). Stability of Structural Steel Tubular Props: An Experimental, Analytical, and Theoretical Investigation. Steel and Composite Structures. Vol.49 No.2. <https://www.techonpress.org/content/?page=article&journal=scs&volume=49&num=2&ordernum=2#>
 28. **Zaid A. Al-Sadoon**, Emran Alotaibi, Maher Omar, Mohamed G. Arab, Ali Tahmaz, (2023). AI-Driven Prediction of Tunneling Squeezing: Comparing Rock Classification Systems. Geotechnical and Geological Engineering. <https://doi.org/10.1007/s10706-023-02665-5>
 29. Ahmed Fageeri, Moussa Leblouba, **Zaid A. Al-Sadoon**, Mohamad Taklas, Firass Mohamad (2023). Experimental investigation on a novel curved steel damper for the beam-column joints of steel structures. Structures. Volume 57, 105300. <https://doi.org/10.1016/j.istruc.2023.105300>
 30. Hussein Hamada, Farid Abed, **Zaid A. Al-Sadoon**, Zeinah Elnassar, Arhum Hassan (2023). The use of treated desert sand in sustainable concrete: A mechanical and microstructure study. Journal of Building Engineering. Volume 79, 107843. <https://doi.org/10.1016/j.jobe.2023.107843>
 31. **Zaid A. Al-Sadoon**, Moussa Leblouba, Ahmed Fageeri (2023). Experimental validation of a novel curved steel damper for steel frames with flexible beam-column joints. Structures, Volume 56, 105010, <https://doi.org/10.1016/j.istruc.2023.105010>
 32. Aghyad Ibrahim Almasri, Saleh Abu Dabous, **Zaid A. Al-Sadoon**, and Fatma H. Moamed (2023). Evaluating the efficiency of using lightweight steel in villa construction in the United Arab Emirates: A case study. Journal of Building Engineering, Volume 72, 106524. <https://doi.org/10.1016/j.jobe.2023.106524>
 33. Abdul Saboor Karzad, Moussa Leblouba, **Zaid A. Al-Sadoon**, Mohamed Maalej, and Salah Altoubat (2023). Modeling the flexural strength of steel fibre reinforced concrete. AIMS Materials Science, 2023, 10(1): 86-111. <https://doi: 10.3934/mat.2023006>
 34. Abdul Saboor Karzad, **Zaid A. Al-Sadoon**, Abdullah Sagheer, Mohammad AlHamaydeh (2022). Experimental and Nonlinear Finite Element Analysis Data for an Innovative Buckling Restrained Bracing System to Rehabilitate Seismically Deficient Structures. Data 7(12),171; <https://doi.org/10.3390/data7120171>
 35. Karzad, A. S., **Al-Sadoon, Z.**, Sagheer, A., & AlHamaydeh, M. (2022). Dataset from Experimental and Nonlinear Finite Element Modeling Investigating an Innovative Buckling Restrained Bracing System for Rehabilitation of Seismic Deficient Structures (1.0) [Data set]. Zenodo. <https://zenodo.org/records/6795612>
 36. Nadia Nassif, **Zaid A. Al-Sadoon**, Khaled Hamad, Salah Altoubat (2022). Cost-Based Optimization of Shear Capacity in Fiber Reinforced Concrete Beams Using Machine Learning, Structural Engineering and Mechanics. Volume 83, Number 5, pages 671-680. DOI: <https://doi.org/10.12989/sem.2022.83.5.671>
 37. Moussa Leblouba Ahmed Fageeri, **Zaid A. Al-Sadoon** (2022). A Novel Seismic Energy Dissipation Device: Laboratory Tests, Mathematical Modeling, and Numerical Analysis. Soil Dynamics and Earthquake Engineering. Volume 162, November 2022, 107493. <https://doi.org/10.1016/j.soildyn.2022.107493>

38. **Zaid A. Al-Sadoon**, Abdul Saboor Karzad, Abdullah Sagheer, Mohammad AlHamaydeh (2022). Replaceable fuse buckling-restrained brace (BRB): Experimental cyclic qualification testing and NLFEA modeling. Structures, Volume 39, Pages 997-1015, ISSN 2352-0124, <https://doi.org/10.1016/j.istruc.2022.03.081>.
39. Muhammad Masood Rafi, Sarosh Hashmat Lodi, **Zaid A. Al-Sadoon**, Murat Saatcioglu, and Dan Palermo (2022). Experimental Investigation of Dynamic Behaviour of Reinforced Concrete Frame Strengthened with Buckling Restrained Bracing. Journal of Structural Engineering. 2022, 148(7). [https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0003371](https://doi.org/10.1061/(ASCE)ST.1943-541X.0003371)
40. Maksoud, Aref, Emad Mushtaha, **Zaid Al-Sadoon**, Hala Sahall, and Ahmed Toutou. (2022). "Design of Islamic Parametric Elevation for Interior, Enclosed Corridors to Optimize Daylighting and Solar Radiation Exposure in a Desert Climate: A Case Study of the University of Sharjah, UAE". Buildings 12 (2), 161. <https://doi.org/10.3390/buildings12020161>
41. Muhammad Masood Rafi, Sarosh Hashmat Lodi, **Zaid A. Al-Sadoon**, Murat Saatcioglu and Dan Palermo (2021). Shake-Table Testing of Deficient Reinforced Concrete Frame Retrofitted with Buckling Restrained Brace. ACI Structural Journal, V. 118, No. 3, Pages 161-173. <https://doi.org/10.14359/51729351>
42. **Al-Sadoon, Z.**, Saatcioglu, M., and Palermo, D. (2020). New Buckling Restrained Brace for Seismically Deficient Reinforced Concrete Frames, (ASCE), Vol. 146, Issue 6. [https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0002439](https://doi.org/10.1061/(ASCE)ST.1943-541X.0002439)
43. M Talha Junaid, Abdalla Elbana; Salah Altoubat, **Zaid A. Al-Sadoon** (2019). Experimental Study on the Effect of Matrix on the Flexural Behavior of Beams Reinforced with Glass Fiber Reinforced Polymer bars, Composite Structures, Vol. 222, 110930 <https://doi.org/10.1016/j.compstruct.2019.110930>
44. Maher Omar, Abdallah Shanableh, Khaled Hamad, Ali Tahmaz, Mohamed Arab, **Zaid Al-Sadoon** (2019). Nomographs for Predicting Allowable Bearing Capacity and Elastic Settlement of Shallow Foundation on Granular Soil. Arabian Journal of Geosciences. Vol. 12: 485, <https://doi.org/10.1007/s12517-019-4644-1>
45. Moussa Leblouba, Samer Barakat, **Zaid A. Al-Sadoon** (2018). Shear Behavior of Corrugated Web Panels and Sensitivity Analysis, Journal of Constructional Steel Research (JCSR), 151(2018):94-107. <https://doi.org/10.1016/j.jcsr.2018.09.010>

Papers in Refereed Conferences:

1. Samer Barakat, **Zaid A. Al-Sadoon**, Ahed Habib, Mazen Shrif (2024). Applications of Machine Learning Models for Predicting Shear Strength of Corrugated Web Steel Beams. IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2024), Sharjah, UAE. **Status: Submitted.**
2. Murat Saatcioglu, **Zaid Al-Sadoon**, Amir Sabri, and Sadegh Khosravi (2024). Seismic retrofit of non-ductile reinforced concrete frame buildings. The fib Symposium 2024. New Zealand ReConStruct, 11-13 November 2024. Paper ID: 583. **Status: Accepted**
3. M. Almohammad-albakkar, **Zaid A. Al-Sadoon** (2024). Developing and Evaluating a Novel Yielding Damper for Enhanced Performance in Steel Beam-to-Column Connections. Proceedings of the 9th International Conference on Civil Structural and Transportation Engineering (ICCSTE 2024), Toronto, Canada – June 13-15, 2024. <http://dx.doi.org/10.11159/iccste24.194>

4. Hussein Hamada, Farid Abed, **Zaid Al-Sadoon** (2023). The effect of palm oil waste on the properties of geopolymer concrete: A review. Proceedings of International Structural Engineering and Construction. Vol. 10 (1), ISCE 12. SUS-23. [Microsoft Word - ISEC Word SUS-23 v3.docx \(isec-society.org\)](#)
5. M. Taklas, **Z. A. Al-Sadoon**, M. Leblouba (2022). Assessment of Progressive Collapse in RC Buildings and Retrofit Strategy. Fourteenth International Conference on Computational Structures Technology. Montpellier, Paper# 219. France. <http://dx.doi.org/10.4203/ccc.3.12.7>
6. **Zaid A. Al-Sadoon**, Abdul Saboor Karzad, Abdullah Sagheer, Mohammad AlHamaydeh (2022). Proof of Concept and Experimental Qualification for A Repairable Buckling-Restrained Brace (BRB). CESARE 22, Coordinating Engineering for Sustainability and Resilience, Irbid, Jordan. <https://www.just.edu.jo/cesare22/documents/papers/172.pdf>
7. U. F. M. H. Al Sabouni, Z. A. Al-Sadoon, and M. Talha Junaid. (2022). The Effect(s) of Height of Dual-System Reinforced Concrete Buildings upon the Performance and Progression of Collapse using Nonlinear Dynamic Analysis. Advances in Science and Engineering Technology International Conferences, ASET 2022, Dubai, February 2022, Code 177890, pp. 1-7, <https://doi.org/10.1109/ASET53988.2022.9734974>
8. Ahmed Fageeri, Moussa Leblouba, Zaid A. Al-Sadoon, and Samer Barakat, (2022). Evaluation of the energy dissipation capacity of a steel damper. 2nd International Conference on Civil and Environmental Engineering (ICCEE). E3S Web of Conferences 347. <https://doi.org/10.1051/e3sconf/202234703011>
9. Mohamad Taklas, Moussa Leblouba, Samer Barakat, **Zaid A. Al-Sadoon** (2022). Concrete-to-concrete shear friction behavior under cyclic loading. 2nd International Conference on Civil and Environmental Engineering (ICCEE). E3S Web of Conferences 347. <https://doi.org/10.1051/e3sconf/202234701001>
10. Firass Mohamad, Moussa Leblouba, Samer Barakat, **Zaid A. Al-Sadoon**, and Mohamad Taklas (2022). Reliability analysis of concrete beams reinforced with FRP bars. 2nd International Conference on Civil and Environmental Engineering (ICCEE). E3S Web of Conferences 347. <https://doi.org/10.1051/e3sconf/202234701003>
11. Mohsin Siddique, Lucy Semerjian, Imad Alsyouf, Maamar Bettayeb, **Zaid A. Al-Sadoon**, Bushra Hussein Al Jaberi, Fatma Eltarabishi, Shahd Ibrahim AlSane (2020). Water Conservation and Management Practices at the University of Sharjah to Achieve Sustainability Excellence. 6th International Workshop on UI GreenMetric and the 3rd International Conference on Green University, Zanjan, Iran. <https://doi.org/10.14710/jsp.2021.11746>
12. Abdul Saboor Karzad, **Zaid A. Al-Sadoon**, Moussa Leblouba, and Mohamed Maalej (2019). Experimental Investigation of the Flexural Behavior of Steel Fiber Reinforced Concrete. IOP Conference Series: Materials Science and Engineering. 943(1). <https://iopscience.iop.org/article/10.1088/1757-899X/943/1/012013>
13. Ibrahim Al-Jumaili, Samer Barakat and **Zaid A. Al-Sadoon** (2019). Experimental compression tests on the Stability of Structural Steel Tubular Props. Proceedings of the 4th International Sustainable Buildings Symposium (ISBS2019), 18-20 July 2019 / Dallas, Texas-USA. Ch. 17. https://www.academia.edu/es/61662631/ISBS_2019_4th_International_Sustainable_Buildings_Symposium

14. **Al-Sadoon, Z. A.**, and Hayati, F. G. (2017). Challenges Facing Fresh Engineering Students in The UAE - Adding A Learners Perspective, 8th IFEE2017, Sharjah, United Arab Emirates, (Paper # 99)
15. **Al-Sadoon, Z.**, Palermo, D., and Saatcioglu, M. (2017). A New Buckling Restrained Frame for Reinforced Concrete Frames. 16th World Conference on Earthquake Engineering, Chile. Paper 1930.
16. **Al-Sadoon, Z.**, Palermo, D., and Saatcioglu, M. (2015). Retrofit of Seismically Deficient Reinforced Concrete Frames with Buckling Restrained Braces. The 11th Canadian Conference on Earthquake Engineering, B.C., Canada. Paper 94331.
17. **Al-Sadoon, Z.**, Saatcioglu, M., and Palermo, D. (2011). Seismic Retrofitting of Non-Ductile Reinforced Concrete Moment Resisting Frame Structures. Canadian Society for Civil Engineers 2nd International Engineering Mechanics and Materials Specialty Conference, Ottawa, Canada, EM-074.
18. Hisham Ibrahim, **Zaid A. Al-Sadoon**, and Osman Ibrahim (2004). Ductility of Concrete Structures, 2nd International Conference on protection of structures against hazards, Singapore, pp. 73 -78.
19. **Zaid A. Al-Sadoon**, Adnan A. Basma, and Kais Taha Shlash (2004). Static Analysis of Deep Concrete Tunnel Linings Under Soil Creep Effect - A Case Study. International Conference on Geotechnical Engineering, The University of Sharjah, UAE, pp. 90-95.
20. **Zaid A. Al-Sadoon**, and Kais Taha Shlash (2003). Finite Element Analysis of a Buried Circular Concrete Tunnel Due to a Time-Dependent Effect (2003) 1st International Symposium on Geotechnical and Material Engineering, GEOMAT ', M'sila, Algeria, pp. 79-90.

REVIEWER FOR REFEREED JOURNALS/ CONFERENCES

- Journal of Construction and Building Materials, Scientific Paper Reviewer
- Journal of Building Engineering, Scientific Paper Reviewer
- ACI Structural and Materials Journal, Scientific Paper Reviewer
- Journal of Structural Engineering, Scientific Paper Reviewer
- Journal of Advances in Civil Engineering Materials
- Journal of Engineering Structures, Scientific Paper Reviewer
- Journal of Structural Engineering and Mechanics, Scientific Paper Reviewer
- Journal of Earthquakes and Structures, An International Journal
- Journal of Journal of King Saud University - Engineering Sciences, Scientific Paper Reviewer
- Member of the International Scientific Committee of the First South Asia Conference on Earthquake Engineering (SACEE), 21-22 February 2019, Karachi, Pakistan, under the auspices of South Asia Earthquake Network (SHAKE)
- International Conference on Advances in Sustainable Construction Materials & Civil Engineering Systems (ASCMCES-17)

MEDIA FEATURING

- Interview with Al-Arabia Broadcast Channel: (Feb. 19, 2023). Earthquake-resistant buildings; How are they designed to resist the tremendous forces?
<https://www.youtube.com/watch?v=4YtxQeXowY4>
- Interview with Al-Arabia Broadcast Channel: Safety measures during an earthquake: (Feb. 7, 2023) https://www.youtube.com/watch?v=whQTIsr_2Dk
- His Highness Sharjah Ruler to the Dining's Hall of the University of Sharjah, September 2020.
<https://www.instagram.com/p/CFeWEb9DbCm/?igshid=4sfuzz7p81ue>
https://twitter.com/akhbar_aldar/status/1308839123579527168?s=24
- Upfront story at the University of Ottawa front web page for the "Defy the Conventional: the Campaign for uOttawa": (Posted on Apr. 15 2016), URL:
<http://www.uottawa.ca/give/muratsaatcioglu>

INDUSTRIAL EXPERIENCE

Senior Structural Design Engineer

Oryx Engineering Consultants, Sharjah, UAE

Oct. 1998 – Aug. 2000

Self-Designed Project:

- Multi-story building of basement + Grd.+18 stories, Al-Majaz area, Sharjah, UAE. Multi-story building of basement + Grd.+ Mezzanine+ 15 stories, Al-Majaz area, Sharjah, UAE.
- Multi-story building of Grd.+6 stories, Al Buteena area, Sharjah, UAE.
- Multi-story building of Grd.+5 stories, Al Khalidiya, Sharjah, UAE.
- Youth Centre, Al-Gail, Ras Al Khaimah, Ministry of Public Work, Dubai, UAE.
- Youth Centre, Sharjah, Ministry of Public Work, Sharjah, UAE.
- Mosque, warehouse, and labor building, Sharjah, UAE.
- Warehouse and labor quarters, Industrial area 11, Sharjah, UAE.
- Villa's complex, Al-Azra, Sharjah, UAE.
- Villa of Grd.+1 story, Umm Sequiem, Dubai, U.A.E.
- Mosque, Al Nukhailat, Sharjah, Sharjah Government, UAE.
- Building of labor quarter, Industrial area II, Sharjah, UAE.
- Villa's complex at Al-Qurain, Sharjah, UAE.
- Villa of Basement+Grd.+1, Shargan, Sharjah, U.A.E.
- Warehouse and building of Grd.+2 stories, Industrial area 11, Sharjah, UAE.
- Villa of Grd.+1 story, Al Ramla area, Sharjah, U.A.E.
- Car Wash, Industrial Area 10, Sharjah, UAE.

Civil & Structural Design Engineer

ICEP Engineering Consultants Sdn. Bhd, Kuala Lumpur, Malaysia.

Mar. 1997– Sept. 1998

Team-Designed Projects:

- Multi-story building of basement+Grd.+18 stories, Atria project, Kuala Lumpur, Malaysia.
- Administration building, Rompin Village, Pahang, Malaysia.
- Multi-story Building of 20 stories, The Desa Sri Puteri, Kuala Lumpur, Malaysia.

Supervised Projects (Resident Engineer):

- Remedial works of multi-story condominium (Eastern Court) of 18 Stories, Penang, Malaysia.

CONSULTANCY SERVICES

- RMD Kwikform Middle East L.L.C, May 2018
- Steel Canada Limited, Toronto, Canada, 2015-2017. (Technical Assistance)
- Directorate of Public Work, Sharjah, UAE, 2004.
- Al-Moosa Contracting Company, Sharjah, UAE, 2003- 2004.
- Golf Scaffolding Factory LLC, Sharjah, UAE, 2001.

DELIVERED WORKSHOPS/SEMINARS/PRESENTATIONS

- May 2024 Apparatus for Thaw Detection of A Frozen Item and Method of Manufacturing The Same. The 16th Scientific Research Forum. UOS
- Feb. 2023 Buckling-Restrained Brace (BRB): Experimental Cyclic Qualification Testing and NLFEA Modeling. Workshop on Building Design for Extreme Loads: Earthquakes and Blasts, University of Sharjah, Sharjah, United Arab Emirates.
- Mar. 2019 Buckling Restrained Braces: Applications for Buildings in Earthquake Prone Areas, Research Institute of Sciences & Engineering, University of Sharjah.
- Feb. 2019 Buckling Restrained Braces: Concept, Applications, and Performance-Based Seismic Design Aspects. Workshop on Building Design for Extreme Loads: Blasts and Earthquakes, University of Sharjah, Sharjah, United Arab Emirates.
- Jan. 2019 Survival Tips from recently joined Faculty. New faculty orientation program by the Institute of Leadership in Higher Education, University of Sharjah, Sharjah, United Arab Emirates
- Nov. 2018 Buckling Restrained Braces for Steel Structures, Scientific Seminars at Sharjah Municipality.
- Apr. 2018 Engineering Structural drawings and Checking, for the benefit of Ministry of Human Resources & Emiratisation. Center for Continuing Education and Professional Development, University of Sharjah, 3 days Workshop.

COMPUTER & SOFTWARE SKILLS

- Structural Analysis & Design Software: SAP2000, ETABS, SAFE, STAAD PRO, RAM, PROKON, Response-2000, RcSection, StructurePoint, DRAIN 2D, and VecTor
- Programming Language: Fortran
- Web Page Design: Front Page, Dreamweaver MX, and Swish.
- General: Microsoft Office 365, AutoCAD, and others.

PROFESSIONAL AFFILIATIONS

- Member of Professional Engineers Ontario (PEO)
- Member of Canadian Association for Earthquake Engineering (CAEE)
- Member of American Concrete Institute (ACI)
- Member of American Society of Civil Engineers (ASCE)
- Member of Canadian Society for Civil Engineering (CSCE)
- Member of Iraqi Engineers Union.
- Member of Society of Engineers. United Arab Emirates.

PROFESSIONAL TECHNICAL COMMITTEES

- Member, American Concrete Institute Committee 369, Seismic Repair and Rehabilitation (2022 – present).
- Member, American Concrete Institute Committee 374, Performance Based Seismic Design of Concrete Buildings (2022 – present).
- Member, American Concrete Institute Committee 370, Blast and Impact Load Effects (2022 – present).

AWARDS

- Best graduate student paper award, Canadian Society for Civil Engineering, 2011. Paper titled "Seismic Retrofitting of Non-Ductile Reinforced Concrete Moment Resisting Frame Structures". 2nd International Engineering Mechanics and Materials Specialty Conference, CSCE, Ottawa, Canada.
- 2nd Place - Research Poster Competition in Civil Engineering 2011, Faculty of Engineering Research Day, University of Ottawa, Canada.