Curriculum Vitae of Prof. Rajai Z. Alrousan

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DATE OF BIRTH	MARITAL STATUS	CITIZENSHIP
April 18, 1977	Married	Jordanian

EDUCATIONAL BACKGROUND:

Degree	Field	Institution	Date Conferred
Ph.D.	Civil Engineering	University of Illinois at Chicago	December 2008
MS.	Structural Engineering	Jordan University of Science and Technology	March 2003
BS.	Civil Engineering	Jordan University of Science and Technology	June 2000

EMPLOYMENT HISTORY:

2/19 - Present	Professor of Civil Engineering, Civil Engineering Department, Jordan University of Science and Technology (JUST).
9/16 - 1/19	Associate Professor of Civil Engineering, Civil Engineering Department, Jordan University of Science and Technology (JUST).
9/15 - 9/16	Associate Professor, Civil and infrastructure engineering department, AURAK, UAE
2/14 - 9/15	Associate Professor of Civil Engineering, Civil Engineering Department, Jordan University of Science and Technology (JUST).
2/09 - 2/14	Assistant Professor of Civil Engineering, Civil Engineering Department, Jordan University of Science and Technology (JUST).
10/10 –9/11	Vice Director of the Consultative Center for Science and Technology
8/05 – 12/08	Teaching and Research Assistant, Department of Civil and Materials Engineering, University of Illinois at Chicago (UIC).
10/00 - 6/03	Teaching Assistant, Jordan University of Science and Technology (JUST), Jordan.
7/01 - 12/04	Ministry of Municipal & Rural Affairs, Irbid, Jordan.
6/00 - 6/01	Engineering Training, Ministry of Public Work, Jordan. Involved in the construction of municipality building and road construction projects.

EU Projects:

• ADDitively Manufactured OPTimized Structures by means of Machine Learning, ADDOPTML
• Optimization Driven Architectural Design of Structures

AWARDS:

- Listed among the World's Top 2% Scientists in the last three years (2020, 2021, and 2022) in the World, identified by Stanford University and Elsevier using Scopus data.
- Honorary Award by the American University of Ras Al Khaimah (AURAK), 2015.
- AAAEA Scholarship, 2007

RESEARCH EXPERIENCE:

- Nondestructive Testing of Concrete Including the Use of Schmidt Hummer, Impact Echo, Pulse Echo, Maturity Principle, and Acoustic Emission Technique
- Instrumentation and Full-Scale Testing of Reinforced Concrete Members
- Strengthening/Repairing of Reinforced Concrete Members such as Beams, Columns, Beam-Column Joints, and Slabs with CFRP-Composites.
- In Place Repair of Damaged Precast/Prestressed Concrete Girders with CFRP-Composites.
- Strength and durability assessment of advanced composite materials, such as Carbon Fiber Reinforced Polymers (CFRP) for rehabilitation of bridges
- Good Experience with the Analysis and Design of Buildings and Bridges according to the ACI Code and AASHTO Standards.
- Simulating the behavior and response of the testing full scale concrete members, full scale bridges, steel members, and strengthened concrete members with CFRP composite using ANSYS Package.
- Good Experience with the Analysis and Design of Buildings and Bridges according to the Sap 2000 and Staad Pro, Prokon
- Analysis, design, and testing of structural models and prototypes subjected to static, fatigue and simulated seismic loading.
- Durability and structural behavior of advanced composite materials, such as Carbon Fiber Reinforced Polymers (CFRP) for rehabilitation of structural members (bridges and buildings).

CONSULTING:

Working in the general area of structural design of buildings and bridges, bridge inspection and rating, fracture critical bridges, bridge and building investigations, actual bridge testing, damage assessment, concrete materials, and strengthening of structural elements of buildings and bridges with CFRP. General consulting in the areas of structural engineering and concrete materials:

- Member of the Technical Committee for Bridge Inspection and Maintenance Code, Ministry of Public Works and Housing, Amman-Jordan. November. 2010-2017.
- Bridge inspection, rating, rehabilitation; and finite element modeling, Ministry of Public Works and Housing, Amman-Jordan. November. 2010-Until Now.

TRAINING COURSES & PERIODS:

- PROKON, Irbid Greater municipality, Irbid, Jordan, 24 Hrs
- Staadpro, Irbid Greater municipality, Irbid, Jordan, 18 Hrs
- Ms Primavera, Irbid Greater municipality, Irbid, Jordan, 18 Hrs
- Autocad 2D & 3D, Irbid Greater municipality, Irbid, Jordan, 40 Hrs
- FIDIC, Engineering Training Centre, Amman, Jordan, 15 Hrs
- Technical Report Training, Irbid Greater municipality, Irbid, Jordan, 15 Hrs

COMPUTER SKILLS:

- Excellent Knowledge with Microsoft Word, Excel, and PowerPoint.
- Excellent Knowledge with AutoCAD 2010 for Drawing.
- Excellent Knowledge with Structural Analysis and Design Software.
- Good Experience with Franc2D for Fracture Analysis of Concrete.
- Excellent Knowledge with Finite Element Analysis (FEA) using ANSYS Package .
- Capability of Learning any Test Procedure or Commercial Software within Minimal Time

COURSES TOUGHT:

- Statics (CE 201)
- Strength of Materials (CE 202)
- Structure Analysis 1 (CE 332)
- Structure Analysis 2 (CE 431)
- Steel Design (CE 434)
- Design of Reinforced Concrete Structures 1 (CE 432)
- Design of Reinforced Concrete Structures 2 (CE 531)
- Prrestress Concrete Design (CE 532)
- Bridge Engineering (CE 536)
- Graduation Project I (CE 591) and Graduation Project II (CE 592)
- Advanced Bridge Engineering (CE 910)
- Advanced Concrete Design (CE 919)

COURSES TAKEN DURING MY M.S. STUDY AT JUST:

- Finite Element Methods
- Advanced Reinforced Concrete Design
- Advanced Mechanics of Materials
- Structural Dynamics
- Analytical Methods in Transportation Engineering

- Special Topics in Civil Engineering (Concrete Technology & Repair)
- Advanced Steel Design
- Advanced Concrete Technology
- Master Thesis: "Strengthening Shear-Deficient Reinforced Concrete Beams Using Steel Fiber Reinforced Concrete,"

COURSES TAKEN DURING MY Ph.D. STUDY AT UIC:

- Finite Element Analysis I
- Nonlinear Finite Element Analysis
- Bridge Design I
- Bridge Design II
- Nondestructive Testing of Concrete
- Advanced Reinforced Concrete Design
- Elastic Stability of Structures
- Fracture Mechanics & Failure Analysis II
- Independent Study
- Special Problems
- PhD Thesis: "Experimental and Theoretical Behavior of reinforced concrete beams and columns Strengthened with Carbon Fiber Reinforced Polymers (CFRP)".

GRADUATION PROJECTS ADVISEMENT:

Several Civil engineering graduation projects (over 100) are supervised. These projects includes designing tall buildings for static and dynamic response, designing prestressed bridges with different spans, designing Water tanks for static and wind forces, designing steel frames, and several structural components.

GRADUATE STUDENTS ADVISEMENT:

Master Student:

1) Ashraf Almasri, "*Bond - Slip behavior between Carbon Fiber Reinforced Polymers sheets and heat-damaged concrete*", (2011). **(Co-advisor)**
2) Ahmad Alhalboni, "*bond- slip behaviour between self-compacting concrete (SCC)and carbon fiber reinforced polymer sheets*", (2012). **(Advisor)**
3) Khawla Asadi, "*Effect of sulfates on bond behavior between carbon fiber reinforced polymer sheets and concrete*", (2012). **(Co-advisor)**
4) Issam Gaith, "*Development of mechanical anchor system to enhance the efficiency of flexural strengthening of reinforced Concrete beams using fiber reinforced polymers*", (2012). **(Co-advisor)**

5) Harith Manasreh, "*finite element analysis of pedestian bridges collapse due to trucks collision*", (2013). **(Co-advisor)**

6) Ali Alasadi, "*Repair of Shear-Deficient Light - Weight Aggregate Concrete Beams Damaged by Thermal Shock Using Advanced Composite Materials*", (2013). **(Advisor)**

7) Al-Baraa Manaa, "*Modeling Bond Behavior Between CFRP and Concrete Using Nonlinear Finite Element Analysis*", (2013). **(Co-advisor)**

8) Alaa Swsi, "*Repair of Shear-Deficient Normal Weight Concrete Beams Damaged by Thermal Shock Using Advanced Composite Materials*", (2013). **(Advisor)**

9) Ahmad Gazal, "*GFRP Plates As Shear Keys For Reinforced Concrete Composite Girders*", (2013). **(Co-advisor)**

10) Katreen Marji, "*An Effective Anchorage System for Reinforced Concrete Beams with Fiber Reinforced Polymer Composites*", (2013). **(Co-advisor)**

11) Lina Ganma, "*Size effect on carbon fiber reinforced polymers bond characteristics with concrete: Geometric configuration*", (2014). **(Co-advisor)**

12) Zaid Anemrei, "*On Bond Behavior Between Carbon Fiber Reinforced Polymers and Concrete*", (2014). **(Co-advisor)**

13) Mutaz Hajaj, "*Optimization of Cable-Stayed Bridges*", (2014). **(Advisor)**

14) Rund Almasri, "*Finite Element Analysis of Thermoplastic Railroad Bridge*", (2014). **(Advisor)**

15) Mohammad Alqudami, "*Shear Behavior of Lightweight Concrete Beams Containing Discontinuous Structural Synthetic Fibers*", (2015). **(Co-advisor)**

16) Harith Al-Slman, "*Experimental investigation of the impact resistance and behavior of polypropylene fiber reinforced slabs*", (2015). **(Advisor)**

17) Esmail A. AlShuqari, "*Impact of Synthetic Fiber Percentage on the Bond Slip Behavior Between Concrete and Carbon Fiber Reinforced Polymer Sheets*", (2017). **(Advisor)**

18) Ameen Reda, "*Vibration on pedestrian bridges Induced by Human*", (2018). **(Advisor)**

19) Muneer Barfed, "*Effect of Curvature Type and Slenderness Ratio on the Behavior of Slender Reinforced Concrete Column Confined with CFRP Composite*", (2018). **(Advisor)**

20) Wafaa Garaibeh, "*Using Treated Medical Waste Fly Ash as a Supplementary Cementitious Material*", (2018). **(Co-advisor)**

21) Moheldeen Hijazi, "*Innovative Approach for Analyzing Thin/Thick Plates: Considering Non-linearity and Plasticity with Damage for Various Boundary Conditions*", (2018). **(Advisor)**

22) Mohammad Tahat, "*Effect of Surface Preparation Upon Bond Behavior Between Concrete and Carbon Fiber Reinforced Polymeric Sheets*", (2018). **(Advisor)**

23) Israa Musamih, "I*mpact of Carbon Fiber Reinforced Polymers strengthening configurations on the behavior of reinforced concrete beams subjected to combined bending and torsion using finite element method*", (2019). **(Advisor)**

24) Safwan Alsarairh, "strengthening of reinforced concrete beams using epoxy grouting and carbon fiber reinforced polymer sheets", (2019). **(Advisor)**

25) Hiba Taha, "*Precise Finite Element Modelling of the Bond-Slip Contact Behavior between the Carbon Fiber Reinforced Polymer and Concrete*", (2019). **(Co-advisor)**

26) Shatha Kahsawneh, "*Control of Vibrations of Common Pedestrian Bridges in Jordan with Tuned Mass Dampers*", (2019). **(Co-advisor)**

27) Ibrahim Alomari, "*Numerical Simulation of Reinforced Concrete Beams with Internally Integrated CFRP strips used as shear reinforcement*", (2020). **(Advisor)**

28) Jameel Muhedat, "*Impact of Grooves number on the behavior of reinforced concrete beams strengthened with CFRP composites*", (2020). **(Advisor)**

29) Saleh Alshorman, "*Chloride Ions penetration into Heat-Damaged Concrete*", (2020). **(Co-advisor)**

30) Razan Alwadi, "*Behavior full-scale concrete bridge deck slabs reinforced with fiber reinforced polymer(FRP) using finite element method*", (2020). **(Advisor)**

31) Rawan Alomari, "*Behavior of Beam-Column connections strengthened with Carbon Fiber Reinforced Polymers composites: size and configuration effects*", (2021). **(Advisor)**

32) Ahamad Abo-Haja, "*Effect of the arrangement of drilled holes on the bond behavior between fiber reinforced polymer and concrete*", (2021). **(Advisor)**

33) Mahmoud Anounti, "*Rehabilitation of heat-damaged reinforced concrete slabs with openings using carbon fiber reinforced polymers*", (2021). **(Advisor)**

34) Muneer Qudisat, "D*esign Guidelines Development for Dry Single Shear Key Joints Under Direct Shear in Precast Post-Tensioned Segmental Bridges using Finite Element Analysis*", (2022). **(Advisor)**

35) Mouhamad Alkateeb, "*Strengthening of Sulfate-Damaged Reinforced Concrete Beams with Carbon Fiber Reinforced Polymer Sheets*", (2023). **(Co-advisor)**

36) Baha Alemoush, "*Rehabilitation of Shear-Deficient Reinforced Concrete Beams Damaged by Sulfate Attack using Fiber Reinforced Polymer*", (2023). **(Co-advisor)**

37) Mouhammad Bani Hani, "*Strengthening and Anchoring of Reinforced Concrete Slabs using Carbon Fiber Reinforced Polymer Sheets with Different Anchorage Systems*", (2023). **(Co-advisor)**

38) Haneen M. Sawalha, "S*tructural Compression Behavior of Geopolymeric Recycled Aggregate Concrete-Filled-Steel-Tubular Square Columns using Non-linear Finite Element Analysis*", (2024). **(advisor)**

P.hD. Student

1) Ayah Alkawaldeh, "Strengthening of Heat-Damaged Reinforced Concrete Beam-Column Joints using Carbon Fiber Reinforced Polymers", (2021). **(Advisor)**

2) Bara'a R. Alnemrawi, "Strengthening of Punching shear behavior of strengthened heat-damaged flat slabs with different opening sizes and location", (2023). **(Advisor)**

ACTIVITIES, PRESENTATIONS AND COMMUNITY SERVICE:

- Presentation in workshops for Engineers in Ministry of Public Works and Housing in bridge inspection, rating, rehabilitation
- Member of Jordanian Association of Engineers
- Web administrator for the department of Civil engineering at JUST (2010)
- Supervisor of structural Engineering lab of Civil engineering at JUST (2010)
- Member of ABET Committee for Civil Engineering Program, 2013-present
- Member of Scientific Research Committee of Civil engineering at JUST (2018)
- Member of Graduate Studies Committee of Civil engineering at JUST (2009)
- Member of Laboratories and Bids Committee of Civil engineering at JUST (2010)
- Member of social Committee of Civil engineering at JUST (2010, 2011)
- Member of Structure Specialization Coordinator Committee of Civil engineering at JUST (2010, 2011, 2013, 2016)
- Engineering Training Supervisor of Civil engineering at JUST (2014)

FUNDED RESEARCH (By the Deanship of Scientific Research at JUST)

- A threefold study of bond strength behavior between sound or damaged concretes and carbon fiber reinforced composites ($42,000).
- Effect of surface roughness on bonding between concrete and CFRP sheet ($8,000)
- Impact of Synthetic Fiber Percentage on the Bond Slip Behavior Between Concrete and Carbon Fiber Reinforced Polymer Sheets (($6,300)
- Shear Behavior of Lightweight Concrete Beams Containing Discontinuous Structural Synthetic Fibers ($8,000)
- Experimental Investigation of the Impact Resistance and Behavior of Polypropylene Fiber Reinforced Slabs ($8,750)

PUBLICATIONS:

[1] **Alnemrawi, B.R., Al-Rousan, R.Z., Ababneh, A.N**. The role of CFRP strengthening in improving the punching shear behavior of heat-damaged flat slabs with openings of different sizes and locations. (2024) Engineering Failure Analysis, 160, art. no. 108208,

[2] **Al-Rousan, R., Alnemrawi, B.R**. NLFEA of the Behavior of Polypropylene-Fiber-Reinforced Concrete Slabs with Square Opening. (2024) Buildings, 14 (2), art. no. 480.
[3] **Alkhawaldeh, A.A., Al-Rousan, R.Z**. Optimizing Cyclic Response of Non-Ductile RC Joints Subjected to Heat Using Stainless-Steel Expanded Metal Sheet Mesh. (2024) Arabian Journal for Science and Engineering, Article in Press
[4] **Al-Rousan, R.Z., Alnemrawi, B.R.** The Influence of Prestress Level on the Behavior of Prefabricated Precast Concrete Bridge Deck Panel Systems with Different Overlay Thicknesses (2023) Structures, 58, art. no. 105478.
[5] **Alnemrawi, B.R., Al-Rousan R.Z., Ababneh A.N.** The Structural Behavior of Heat-Damaged Flat Slabs with Openings of Different Sizes and Locations (2023) Arabian Journal for Science and Engineering. DOI: https://doi.org/10.1007/s13369-023-08411-6
[6] **Al-Rousan, R.Z., Alkhawaldeh, A.A.** Experimental cyclic response of heat-damaged RC beam-column joints strengthened with CFRP strings. (2023) Structures, 57, art. no. 105169, .
[7] **Al-Rousan, R.Z.** Anchored CFRP ropes for flexural capacity recovering of thermally damaged RC one-way slabs. (2023) Alexandria Engineering Journal, 76, pp. 757-774
[8] **Al-Rousan, R.Z., Alnemrawi, B.R.** Interface Shear Strength Prediction of CFRP-Strengthened Sulfate-Damaged Shear Keys Using NLFEA. (2023) International Journal of Civil Engineering, 21 (8), pp. 1385-1402.
[9] **Al-Rousan, R.Z., Alnemrawi, B.R.** Cyclic Behavior of CFRP Confined Circular CFST Damaged by Alkali-Silica Reaction. (2023) International Journal of Civil Engineering, 21 (7), pp. 1159-1180.
[10] **Al-Rousan, R.Z.** Impact of Internal CFRP strips on the flexural behavior of heat-damaged reinforced concrete beams. (2023) Heliyon, 9 (6), art. no. e17145.
[11] **Alkhawaldeh, A.A., Alrousan, R.Z.** Improving cyclic response of heat-damaged non-ductile RC joints using CFRP hybrid systems. (2023) Construction and Building Materials, 377, art. no. 131150
[12] **Al-Rousan, R.Z., Alnemrawi, B.R.** Punching shear code provisions examination against the creation of an opening in existed RC flat slab of various sizes and locations. (2023) Structures, 49, pp. 875-888.
[13] **Al-Rousan, R.Z., Alnemrawi, B.R.** The behavior of thermally-shocked RC columns confined internally by ASWM (2023) Proceedings of the Institution of Civil Engineers - Structures and Buildings, **Ahead of print.** DOI: https://doi.org/10.1680/jstbu.22.00226
[14] **Al-Rousan, R.Z., Alnemrawi, B.R.** Prediction of Interface Shear Strength of Heat Damaged Shear-keys using Nonlinear Finite Element Analysis. (2023) Journal of Applied and Computational Mechanics, 9 (4), pp. 1000-1015.
[15] **Al-Rousan, R.Z., Qudaisat, M.S.** Single keyed joints behaviour and capacity formulation under direct shear using non-linear finite-element analysis. (2023) Structures, 47, pp. 911-924.
[16] **Alkhawaldeh, A.A., Al-Rousan, R.Z**. Upgrading cyclic response of heat-damaged RC beam-column joints using CFRP sheets (2022) Case Studies in Construction Materials, 17, art. no. e01699.
[17] **Alrousan, R.Z., Alnemrawi, B.R.** Punching shear behavior of FRP reinforced concrete slabs under different opening configurations and loading conditions (2022) Case Studies in Construction Materials, 17, art. no. e01508.
[18] **Alrousan, R.Z., Alnemrawi, B.R.** The behavior of alkali-silica reaction-damaged full-scale concrete bridge deck slabs reinforced with CFRP bars (2022) Results in Engineering, 16, art. no. 100651

[19] **Al-Rousan R.Z.** Influence of opening sizes on the flexural behavior of heat-damaged reinforced concrete slabs strengthened with CFRP ropes (2022) Case Studies in Construction Materials, 17, art. no. e01464.
[20] **Al-Rousan. R.Z.** Cyclic lateral behavior of NLFEA heat-damaged circular CFT steel columns confined at the end with CFRP composites (2022) Case Studies in Construction Materials, 17, art. no. e01223
[21] **Al-Smadi, Y.M., Al-Rousan, R.Z., Laradhi, A.A., Avci, O.** Vibration Serviceability Investigation of a Curved Footbridge (2022) Practice Periodical on Structural Design and Construction, 27 (4), art. no. 04022040.
[22] **Alrousan, R.Z., Alnemrawi, B.R.** The influence of concrete compressive strength on the punching shear capacity of reinforced concrete flat slabs under different opening configurations and loading conditions (2022) Structures, 44, pp. 101-119.
[23] **Al-Rousan, R.Z.** Influence of Macro Synthetic Fibers on the Flexural Behavior of Reinforced Concrete Slabs with Opening (2022) Civil Engineering Journal (Iran), 8 (9), pp. 2001-2021.
[24] **Al-Rousan, R.Z.** Impact of elevated temperature on the behavior of full-scale concrete bridge deck slabs reinforced with GFRP bars (2022) Structures, 43, pp. 621-634.
[25] **Al-Rousan, R.** The shear behavior of anchored groove RC beams (2022) Magazine of Civil Engineering, 112 (4), art. no. 11206
[26] **Al-Rousan, R.Z.** Impact of sulfate damage on the behavior of full-scale concrete bridge deck slabs reinforced with FRP bars (2022) Case Studies in Construction Materials, 16, art. no. e01030
[27] **Al-Rousan, R.Z., Al-Muhiedat, J.N.** The behavior heated-damaged reinforced concrete beams retrofitted with different CFRP strip length and number of transverse groove (2022) Case Studies in Construction Materials, 16, art. no. e00896
[28] **Al-Rousan, R.Z.** Cyclic behavior of alkali-silica reaction-damaged reinforced concrete beam-column joints strengthened with FRP composites (2022) Case Studies in Construction Materials, 16, art. no. e00869
[29] **Alhassan, M.A., Al-Rousan, R.Z., Alomari, I.S., Amaireh, L.** Shear response of RC beams encompassing hybrid CFRP strips and steel stirrups: Beam depth effect (2022) Structures, 38, pp. 781-796.
[30] **Al-Rousan, R., Nusier, O., Abdalla, K., Alhassan, M., Lagaros, N.D.** NLFEA of Sulfate-Damaged Circular CFT Steel Columns Confined with CFRP Composites and Subjected to Axial and Cyclic Lateral Loads (2022) Buildings, 12 (3), art. no. 296
[31] **Al-Rousan, R.** The shear behavior of Anchored CFRP Strengthened RC beams (2022) Magazine of Civil Engineering, 109 (1), art. no. 10905
[32] **Al-Rousan, R.** Impact of elevated temperature on the shear behavior of strengthened RC beams (2022) Magazine of Civil Engineering, 110 (2), art. no. 11002
[33] **Al-Rousan, R.Z.** The behavior of heated damaged shear-deficient RC beams reinforced internally with welded wire mesh (2021) Case Studies in Construction Materials, 15, art. no. e00687
[34] **Al-Rousan, R.Z.** The impact of the welded wire mesh as internal reinforcement on the flexural behavior of RC beams exposed to elevated temperature (2021) Case Studies in Construction Materials, 15, art. no. e00618
[35] **Al-Rousan, R.Z., Alkhawaldeh, A.** Behavior of heated damaged reinforced concrete beam-column joints strengthened with FRP (2021) Case Studies in Construction Materials, 15, art. no. e00584
[36] **Al-Rousan, R.Z., Alkhawaldeh, A.** Numerical simulation of the influence of bond strength degradation on the behavior of reinforced concrete beam-column joints externally strengthened with FRP sheets (2021) Case Studies in Construction Materials, 15, art. no. e00567

[37] **Al-Rousan, R., Ababneh, A., Alhassan, M.** Hybrid CFRP-steel for enhancing the flexural behavior of reinforced concrete beams (2021) Journal of King Saud University - Engineering Sciences, 33 (7), pp. 459-470.
[38] **Alhassan, M., Al-Rousan, R., Ababneh, A.** Anchoring of the main CFRP sheets with transverse CFRP strips for optimum upgrade of RC Beams: Parametric experimental study (2021) Construction and Building Materials, 293, art. no. 123525
[39] **Alhassan, M.A., Al rousan, R.Z., Hejazi, M.A., Amaireh, L.K.** Approximate analysis of quadrilateral slabs having various cases of boundary conditions and aspect ratios (2021) Advances in Structural Engineering, 24 (9), pp. 1782-1797.
[40] **Al-Rousan, R.Z., Sharma, A.** Integration of FRP sheet as internal reinforcement in reinforced concrete beam-column joints exposed to sulfate damaged (2021) Structures, 31, pp. 891-908.
[41] **Al-Rousan, R.Z.** Integration of CFRP strips as an internal shear reinforcement in reinforced concrete beams exposed to elevated temperature (2021) Case Studies in Construction Materials, 14, art. no. e00508
[42] **Al-Rousan, R.Z., Alhassan, M.A., Al-omary, R.J.** Response of interior beam-column connections integrated with various schemes of CFRP composites (2021) Case Studies in Construction Materials, 14, art. no. e00488
[43] **Al-Rousan, R.Z.** Impact of elevated temperature and anchored grooves on the shear behavior of reinforced concrete beams strengthened with CFRP composites (2021) Case Studies in Construction Materials, 14, art. no. e00487
[44] **Alhassan, M.A., Al-Rousan, R.Z., Hejazi, M.A.** Concerning the tensor-based flexural formulation: Applications (2021) Structural Engineering and Mechanics, 77 (6), pp. 765-777.
[45] **Al-Rousan, R.Z., Alhassan, M.A., Hejazi, M.A.** The extrema point deviatoric moment component (2021) Ain Shams Engineering Journal, 12 (1), pp. 341-354.
[46] **Al-Rousan, R.** Behavior of CFT steel columns damaged by thermal shock (2021) Magazine of Civil Engineering, 108 (8), art. no. 10808
[47] **Alkhawaldeh, A., Al-Rousan, R.** Behavior of RC beams with different bond strength (2021) Magazine of Civil Engineering, 107 (7), art. no. 10702
[48] **Al-Rousan, R.** Impact of elevated temperature on the behavior of strengthened RC beams with CFRP (2021) Magazine of Civil Engineering, 106 (6), art. no. 10612
[49] **Al-Rousan, R.** The impact of depth on shear behavior of strengthened beams (2021) Magazine of Civil Engineering, 105 (5), art. no. 10501
[50] **Al-Rousan, R.Z.** Behavior of auxetic steel wire rc columns exposed to elevated temperature (2021) Latin American Journal of Solids and Structures, 18 (2), art. no. e351, pp. 1-15.
[51] **Al-Rousan, R., Al-Tahat, M.** An anchoring groove technique to enhance the bond behavior between heat-damaged concrete and CFRP composites (2020) Buildings, 10 (12), art. no. 232, pp. 1-15.
[52] **Al-Rousan, R.Z., Abu-Elhija, A.M.** Predicting the bond-slip relationship between concrete and CFRP using anchoring holes technique (2020) Case Studies in Construction Materials, 13, art. no. e00462
[53] **Al-Rousan, R., Al-Saraireh, S.** Impact of anchored holes technique on behavior of reinforced concrete beams strengthened with different CFRP sheet lengths and widths (2020) Case Studies in Construction Materials, 13, art. no. e00405
[54] **Al-Rousan, R.** Behavior of B-C connections damaged by thermal shock (2020) Magazine of Civil Engineering, 99 (7), art. no. 10

[55] **Abdalla, K.M., Alhassan, M.A., Al-Rousan, R., Lagaros, N.D.** Finite-element modelling of concrete-filled steel tube columns wrapped with CFRP (2020) Proceedings of the Institution of Civil Engineers: Structures and Buildings, 173 (11), pp. 844-857.
[56] **Al-Rousan, R.** The shear behavior of CFRP strengthened RC beams (2020) Magazine of Civil Engineering, 98 (6), art. no. 10
[57] **Al-Rousan, R.Z., AL-Tahat, M.F.** Consequence of anchoring holes technique on the bond behavior between CFRP composites and heat-damaged concrete (2020) Structures, 27, pp. 1903-1918.
[58] **Al-Rousan, R.Z., Alhassan, M., Al-wadi, R.** Nonlinear finite element analysis of full-scale concrete bridge deck slabs reinforced with FRP bars (2020) Structures, 27, pp. 1820-1831.
[59] **Al-Rousan, R.** Behavior of CFRP strengthened columns damaged by thermal shock (2020) Magazine of Civil Engineering, 97 (5), art. no. 9708
[60] **Alhassan, M.A., Al-Rousan, R.Z., Abu-Elhija, A.M.** Anchoring holes configured to enhance the bond-slip behavior between CFRP composites and concrete (2020) Construction and Building Materials, 250, art. no. 118905
[61] **Al-Rousan, R., Abo-Msamh, I.** Impact of anchored CFRP on the torsional and bending behaviour of RC beams (2020) Magazine of Civil Engineering, 96 (4), pp. 79-93.
[62] **Alhassan, M.A., Al-Rousan, R.Z., Taha, H.M.** Precise finite element modelling of the bond-slip contact behavior between CFRP composites and concrete (2020) Construction and Building Materials, 240, art. no. 117943
[63] **Al-Rousan, R.** Behavior of strengthened concrete beams damaged by thermal shock (2020) Magazine of Civil Engineering, 94 (2), pp. 93-107.
[64] **Ababneh, A.N., Al-Rousan, R.Z., Ghaith, I.M.N.** Experimental study on anchoring of FRP-strengthened concrete beams (2020) Structures, 23, pp. 26-33
[65] **Amaireh, L., Al-Rousan, R.Z., Ababneh, A.N., Alhassan, M.** Integration of CFRP strips as an internal shear reinforcement in reinforced concrete beams (2020) Structures, 23, pp. 13-19.
[66] **Al-Ghazawi, O., Al-Rousan, R.Z.** Response of Reinforced Concrete Slabs Strengthened with CFRP (2020) Journal of Engineering Science and Technology Review, 13 (6), pp. 125-129.
[67] **Al-Rousan, R.** Predicting the Optimum Shear Capacity of Reinforced Concrete Beams Externally Strengthened with CFRP Composites (2020) Procedia Manufacturing, 44, pp. 631-638.
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