Scientific Contribution of Papers Published in Journals

Sl. # (as in CV)	Details of the paper	Scientific contribution
[J149]	Abdullahi Abdulrahman Muhudin, Adel A Abdou, Mohammad Sharif Zami, Ismail M Budaiwi, Mubashir Aziz, **Shamsad Ahmad**, "*Investigating the Acoustical Characteristics of Stabilized Soils for Sustainable Construction*", **Journal of Architectural Engineering (ASCE, USA)**, Accepted for publication.	The paper investigates the acoustical properties of stabilized soils to assess their potential for sustainable construction applications. It demonstrates that stabilizing soils with additives such as lime, cement, or industrial by-products improves sound absorption and insulation while enhancing mechanical stability. Overall, the study introduces an innovative perspective on using stabilized soils as eco-friendly, noise-reducing construction materials that contribute to sustainable building design.
[J148]	Khaled M. Kharma, Mohammed A. Al-Huri, Karnan Manickavasakam, Mohammed A. Al-Osta, Raseel Alharbi, **Shamsad Ahmad**, Muhammad Kalimur Rahman, and Md. Abdul Aziz, "*Engineering Multifunctional Concrete: Optimizing Carbon Fiber Networks for Enhanced Conductivity and Structural Integrity in Smart Construction Materials*", **ACS Applied Engineering Materials (USA)**, Accepted for publication.	The paper investigates the optimization of carbon fiber networks in concrete to achieve multifunctional performance combining electrical conductivity and structural strength. It demonstrates that tailored fiber dispersion and content significantly enhance self-sensing capability, conductivity, and mechanical integrity without compromising workability. Overall, the study advances the development of smart, durable, and structurally efficient concretes for next-generation intelligent infrastructure applications.
[J147]	Omer Ahmed; Saheed Kolawole Adekunle; **Shamsad Ahmad**; Mohammed Ali Alosta; Ahmed Abd El Fattah; Mesfer Mohammad Al-Zahrani, "*Innovative Use of Carbonated Calcium-Rich Materials in Concrete–Blended Paste Development*", **Journal of Materials in Civil Engineering (American Society of Civil Engineers, USA)**, Accepted for publication.	The paper explores the innovative incorporation of carbonated calcium-rich materials into concrete-blended pastes to enhance sustainability and performance. It demonstrates that these materials improve hydration reactions, refine pore structure, and increase strength while promoting CO_2 sequestration. Overall, the study introduces a sustainable approach for utilizing carbonated industrial by-products to develop greener, high-performance concrete binders.
[J146]	Shaik Inayath Basha, Mazen Anwar Abdullah, Karnan Manickavasakam, **Shamsad Ahmad**, Mohammed Ali Alosta, Md Abdul Aziz, "*Carbon-Coated Sand in Cement Composites for Smart and Multifunctional Construction Materials: A Comprehensive Review*", **Chemical Record (Germany)**, Accepted for publication.	The paper provides a comprehensive review of carbon-coated sand as a novel functional filler in cement composites for developing smart and multifunctional construction materials. It highlights how carbon coatings enhance electrical conductivity, mechanical performance, and self-sensing capabilities while maintaining structural integrity. Overall, the study outlines the material design, mechanisms, and potential applications of carbon-coated sand composites, paving the way for intelligent and sustainable infrastructure solutions.
[J145]	Muhammad Talha Shafique, Salman Siddique, Hammad R. Khalid, Saheed K. Adekunle, Asad Hanif, **Shamsad Ahmad**, and Salah Al-Dulaijan, "*Investigating the Impact of Red Mud Substitution on Physicochemical Properties of Carbonated Cement*	The paper investigates the effects of substituting red mud on the physicochemical and carbonation behavior of cement composites. It demonstrates that red mud enhances CO_2 uptake, modifies hydration and carbonation products, and refines pore structure,

	Composites", **Journal of Building Engineering (Netherlands)**, Volume 113, 1 November 2025, 114087.	leading to improved strength and durability. Overall, the study highlights the potential of red mud as a sustainable supplementary material for developing carbon-efficient and durable cementitious composites.
[J144]	Ahmad Moein Abdali, Abbas Ahmed Albu Shaqraa, **Shamsad Ahmad**, Mohammed A. Al-Osta, Hammad R. Khalid, Saheed Kolawole Adekunle, "*Experimental Study on High-Strength Concrete with Hybrid Limestone Calcined Clay Cement Blends*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Published online on July 23, 2025, Issue 20/2025.	The paper experimentally investigates the performance of high-strength concrete incorporating hybrid limestone calcined clay cement (LC3) blends. It demonstrates that optimized combinations of limestone and calcined clay enhance compressive strength, durability, and microstructural densification while reducing clinker content and carbon emissions. Overall, the study validates LC3 as a sustainable and high-performance alternative to conventional cement in producing environmentally friendly high-strength concrete.
[J143]	Muhammad Talha Shafique, Salman Siddique, Hammad R. Khalid, Saheed K. Adekunle, Asad Hanif, **Shamsad Ahmad**, and Salah Al-Dulaijan, "*Impact of pre-carbonation duration on carbonation-induced physicochemical changes in OPC*", **Journal of Sustainable Cement-Based Materials (China)**, Published online on July 6, 2025.	The paper investigates how varying pre-carbonation durations affect the physicochemical transformations in ordinary Portland cement (OPC) systems. It demonstrates that controlled pre-carbonation enhances CO_2 uptake, refines pore structure, and influences phase composition, thereby improving strength and durability characteristics. Overall, the study provides insights into optimizing carbonation curing parameters to enhance the performance and sustainability of OPC-based materials.
[J142]	K.K. Kiran, Mohammed A. Al-Osta, **Shamsad Ahmad**, and Ashraf A. Bahraq, "*Optimization of Tuned Mass Damper Inerter Systems for Seismic Control of Base-Isolated and Fixed-Base Structures*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Published online on June 24, 2025.	The paper presents an optimization study of tuned mass damper inerter (TMDI) systems for enhancing the seismic performance of both base-isolated and fixed-base structures. It demonstrates that properly optimized TMDI parameters significantly reduce structural displacements and accelerations compared to conventional damping systems. Overall, the study provides an effective design framework for implementing TMDI devices to achieve superior vibration mitigation and seismic resilience in structural systems.
[J141]	Mohamed Harun, Umair Ali, Mubashir Aziz, Mohamed Abdulqadir Mohamed, Hammad R. Khalid, **Shamsad Ahmad**, Asad Hanif, "*Reactive magnesia and magnesium oxychloride cement treatments for mechanical enhancement of marl soil*", **Results in Engineering (Netherlands)**, Volume 27, September 2025, 105915.	The paper investigates the effectiveness of reactive magnesia and magnesium oxychloride cement treatments in improving the mechanical properties of marl soil. It demonstrates that these additives significantly enhance strength, stiffness, and durability through the formation of stable cementitious phases and improved soil bonding. Overall, the study introduces sustainable and efficient magnesia-based stabilization methods for enhancing the performance of weak marl soils in geotechnical engineering applications.
[J140]	Ibrahim Eltayeb, Hammad R. Khalid, Saheed K. Adekunle, Seifeldin Bagneid, Marwan Abdulqader, Asad Hanif, **Shamsad Ahmad**, Mohammed A. Al-Osta, Mohd Sajid, "*Physicochemical properties of*	The paper investigates the physicochemical and mechanical properties of limestone calcined clay cement (LC3) binders partially substituted with cement waste-derived portlandite. It demonstrates

	cement waste-derived portlandite-substituted limestone calcined clay cement (LC3) binders", **Journal of Sustainable Cement-Based Materials (China)**, Published online on June 9, 2025.	that incorporating portlandite enhances pozzolanic reactions, refines microstructure, and maintains or improves strength while reducing clinker content and environmental impact. Overall, the study promotes the valorization of cement waste as a reactive additive for developing sustainable, low-carbon LC3 binders.
[J139]	Qais Gawah, Mohammed A. Al-Osta, Mazen A. Abdullah, Fouad Bourada, Abdelouahed Tounsi, **Shamsad Ahmad**, Salah U. Al-Dulaijan, and Mesfer M. Al-Zahrani, "*Wave propagation analysis of graphene platelet-reinforced functionally graded porous plates resting on viscoelastic foundations using an integral HSDT*", **Thin-Walled Structures (UK)**, Volume 215, Article number 113502, October 2025.	The paper presents a wave propagation analysis of graphene platelet-reinforced functionally graded porous plates resting on viscoelastic foundations using an integral higher-order shear deformation theory (HSDT). It demonstrates that graphene platelet distribution, porosity, and foundation parameters significantly affect dispersion characteristics and wave velocities. Overall, the study provides an accurate theoretical framework for understanding and optimizing the dynamic response of advanced graphene-reinforced composite structures in engineering applications.
[J138]	Omer Ahmed, Amin Al-Fakih, Saheed Kolawole Adekunle, and **Shamsad Ahmad**, "*Scopus-based bibliometric analysis of carbon capture in concrete: Research components and intellectual connections*", **Next Research (Netherlands)**, Volume 2, Issue 3, September 2025, 100426.	The paper conducts a Scopus-based bibliometric analysis to map global research trends, key themes, and intellectual linkages in the field of carbon capture in concrete. It identifies major contributors, influential publications, and emerging research areas such as CO_2 mineralization, carbonation curing, and sustainable cement alternatives. Overall, the study provides a comprehensive overview of the evolution and structure of carbon capture research in concrete, guiding future studies toward innovative and sustainable carbon mitigation strategies in the construction industry.
[J137]	Qais Gawah, Mohammed A. Al-Osta, Fouad Bourada, Abdelouahed Tounsi, **Shamsad Ahmad**, and Salah U. Al-Dulaijan, "*Vibration analysis of functionally graded graphene platelet-reinforced FG plates supported by viscoelastic foundations using an integral HSDT*", **Mechanics Based Design of Structures and Machines (USA)**, Published online: 22 May 2025.	The paper presents a comprehensive vibration analysis of functionally graded graphene platelet-reinforced composite plates resting on viscoelastic foundations using an integral higher-order shear deformation theory (HSDT). It demonstrates that graphene platelet distribution, volume fraction, and foundation damping properties significantly influence the plate's natural frequencies and dynamic behavior. Overall, the study provides an accurate analytical framework for optimizing the design and vibration control of advanced graphene-reinforced composite structures.
[J136]	Mohammad Sharif Zami, Omer Ahmed, Mohamedelmustafa Ahmed, **Shamsad Ahmad**, Amir Al-Ahmed, Saheed Kolawole Adekunle, Ismail Mohammad Ismail Budaiwi, "*Analysing the Structural Merits of Stabilised Earth of Hejaz Region for Construction*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Published online: 10 April 2025.	The paper analyzes the structural properties of stabilized earth materials from the Hejaz region to assess their suitability for construction applications. It demonstrates that using stabilizers such as lime and cement significantly improves the soil's strength, density, and durability, making it viable for sustainable building. Overall, the study promotes the utilization of locally available earth resources to develop eco-friendly, cost-effective construction materials adapted to regional conditions.

[J135]	Fahad M. Alharthi, Muhammad Kalimur Rahman, Mohammed A. Al-Osta, Mohammed Fasil, Mesfer M. Al-Zahrani, **Shamsad Ahmad**, Ibrahim A. A. Sharaky, "*Finite element modeling of GFRP bar-reinforced hollow-core concrete beams under flexural loads*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 50, pages 8687–8707, (2025).	The paper develops a finite element model to analyze the flexural behavior of glass fiber-reinforced polymer (GFRP) bar–reinforced hollow-core concrete beams. It accurately simulates load-deflection response, crack patterns, and failure modes, validating the results with experimental data. Overall, the study provides a reliable numerical tool for predicting and optimizing the structural performance of GFRP-reinforced hollow-core beams, supporting the design of durable and corrosion-resistant concrete systems.
[J134]	Abubakr E. S. Musa, Almotaseembillah Ahmed, Subhan Ahmad, Hammad R. Khalid, Mohammed A. Al-Osta, **Shamsad Ahmad**, "*Axial compressive and buckling behavior of concrete-filled steel tubes incorporating recycled coarse aggregate, plastic waste, and silica fume*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 50, pages 8709–8735, (2025).	The paper investigates the axial compressive and buckling behavior of concrete-filled steel tubes (CFSTs) incorporating recycled coarse aggregate, plastic waste, and silica fume. It demonstrates that these sustainable materials can be effectively used without compromising strength or stability, while silica fume enhances bonding and load-carrying capacity. Overall, the study promotes environmentally friendly CFST construction by integrating recycled and waste materials to achieve high structural performance and sustainability.
[J133]	Qais Gawah, Mohammed A. Al-Osta, Fouad Bourada, Abdelouahed Tounsi, **Shamsad Ahmad**, and Mesfer M. Al-Zahrani, "*Bending analysis of graphene platelet-reinforced FG plates on Kerr foundations using an integral HSDT*", **Acta Mechanica (Austria)**, Volume 236, pages 1647–1671, (2025).	The paper presents a detailed bending analysis of graphene platelet–reinforced functionally graded (FG) plates resting on Kerr foundations using an integral higher-order shear deformation theory (HSDT). It demonstrates that graphene platelet distribution, volume fraction, and foundation stiffness significantly influence the plate's deflection and stress behavior. Overall, the study provides an accurate and efficient analytical framework for predicting the mechanical response of advanced graphene-reinforced composite plates in structural applications.
[J132]	Hai Tao, Mohammed Suleman Aldlemy, Mohammed Ayad Saad, Swee PinYeap, Atheer Y. Oudah, Omer A. Alawi, Leonardo Goliatt, **Shamsad Ahmad**, Zaher Mundher Yaseen, Ravinesh C. Deo, "*Intelligent Modeling and Analysis of Hybrid Organic Rankine Plants: Data-Driven Insights into Thermodynamic Efficiency and Economic Viability*", **Engineering Applications of Artificial Intelligence (UK)**, Volume 143, 1 March 2025, 109946.	The paper develops intelligent, data-driven models to analyze the thermodynamic and economic performance of hybrid organic Rankine cycle (ORC) plants. It demonstrates that machine learning-based modeling accurately predicts system efficiency and optimizes operating parameters for maximum energy recovery and cost-effectiveness. Overall, the study provides valuable insights into improving the design and optimization of hybrid ORC systems, advancing sustainable power generation through intelligent energy system analysis.
[J131]	Khaled Own Mohaisen, Md. Hasan Zahir, Salah U. Al-Dulaijan, **Shamsad Ahmad**, Mesfer M. Al-Zahrani, Mohammed Maslehuddin, "*An Innovative Lightweight Aggregate Composite Phase Change Material for Thermal Energy Storage Enhancement of Concrete under Hot Weather Conditions*", **Journal of Building Engineering (Netherlands)**, Volume 99, 1 April 2025, 111575.	The paper introduces an innovative lightweight aggregate composite embedded with phase change materials (PCM) to enhance the thermal energy storage capacity of concrete in hot climates. It demonstrates that the PCM-integrated aggregates effectively regulate temperature fluctuations, reducing heat transfer and improving thermal comfort without compromising mechanical strength. Overall, the study contributes a novel and practical solution for

		developing energy-efficient, thermally adaptive concrete suitable for sustainable construction in hot weather conditions.
[J130]	Muhammad K. Rahman, Hashem Y. Kailani, Ashraf A. Bahraq, Salah U. Al-Dulaijan and **Shamsad Ahmad**, "*Development of Water-Cured Alkali-Activated Concrete with a High Volume of Silica-Rich Waste Limestone Powder and GGBS and Fly Ash Materials: Strength, Durability, and Life Cycle Assessment*", **Journal of Materials in Civil Engineering (American Society of Civil Engineers, USA)**, Volume 37, Issue 1, Oct 25, 2024.	The paper develops a water-cured alkali-activated concrete incorporating high volumes of silica-rich waste limestone powder, ground granulated blast furnace slag (GGBS), and fly ash. It demonstrates that the optimized mix achieves excellent strength and durability while significantly reducing environmental impact compared to conventional concrete. Overall, the study presents a sustainable, low-carbon binder system that effectively utilizes industrial waste materials for durable and eco-efficient concrete production.
[J129]	Zakaria Mohamed Nor, Fatima Omar Al-Qwairi, Abdulmajid A Mirghni, Amin Al-Fakiha, **Shamsad Ahmad**, Mohammed A. Al-Osta, Atif Saeed Alzahrani, Ismail M. Budaiwi, Md. Abdul Aziz, "*From Waste to Power: Developing Structural Supercapacitors with Red Mud and Jute Stick*", **Chemistry-An Asian Journal (Germany)**, Volume 20, Issue 2, January 17, 2025.	The paper presents an innovative approach to developing structural supercapacitors by utilizing red mud and jute stick waste as functional components. It demonstrates that combining these waste-derived materials enables the creation of composites with both high mechanical strength and excellent electrochemical energy storage capacity. Overall, the study introduces a sustainable pathway for converting industrial and agricultural waste into multifunctional structural energy-storage materials, advancing green and smart infrastructure technologies.
[J128]	Ahmed F. Shalabi, Omar S. Baghabra Al-Amoudi, Mohammed A. Al-Osta, Yakubu Sani Wudil, M.A. Gondal, **Shamsad Ahmad**, Salah U. Al-Dulaijan, Mohammed Ibrahim, Esam Al-Nahari, "*Investigating chloride-induced corrosion in reinforced concrete structures using laser-induced breakdown spectroscopy*", **Case Studies in Construction Materials (UK)**, Volume 21, December 2024, e03981.	The paper investigates the use of laser-induced breakdown spectroscopy (LIBS) as a non-destructive technique to detect and quantify chloride-induced corrosion in reinforced concrete structures. It demonstrates that LIBS can accurately measure chloride concentration profiles and identify early corrosion stages with high spatial resolution. Overall, the study establishes LIBS as a powerful diagnostic tool for real-time corrosion monitoring, contributing to improved durability assessment and maintenance of reinforced concrete infrastructure.
[J127]	Wala A. Algozeeb, Ali Algadhib, **Shamsad Ahmad**, Mohammed A. Al-Osta, Ashraf A. Bahraq, Weiyin Chen, Syed Khaja Najamuddin, Syed Imran Ali, and James M. Tour, "*Soot-Derived Flash Graphene as Cement Additive*", **ACS Applied Nano Materials (USA)**, Volume 7, Issue 21, October 25, 2024.	The paper explores the use of soot-derived flash graphene as a novel additive in cement composites to enhance performance and sustainability. It demonstrates that small graphene additions significantly improve mechanical strength, electrical conductivity, and microstructural densification due to efficient load transfer and pore refinement. Overall, the study introduces an innovative, waste-derived nanomaterial for high-performance, multifunctional, and environmentally friendly cementitious systems.
[J126]	Ibrahim N.A. Al-Duais, **Shamsad Ahmad**, Mohammed A. Al-Osta, Mohammed Maslehuddin, Mohammed Ibrahim, "*Durability of Alkali Activated Concrete made using Multiple Precursors as Primary Binders*",	The paper examines the durability performance of alkali-activated concrete produced using multiple precursors as primary binders, such as fly ash, slag, and natural pozzolan. It demonstrates that synergistic combinations of these materials enhance resistance to chloride penetration, carbonation, and sulfate attack

	Journal of Sustainable Cement-Based materials (China), Volume 13, Issue 10, pp. 1483–1501, 2024.	while maintaining high strength. Overall, the study highlights the potential of multi-precursor alkali-activated systems to achieve durable and sustainable alternatives to conventional cement-based concretes.
[J125]	**Shamsad Ahmad**, Ashraf A. Bahraq, Amin Al-Fakih; Moruf Olalekan Yusuf; Mohammed A. Al-Osta, "*Transport Characteristics and Corrosion Behavior of Ultra-High Performance Fiber-Reinforced Concrete with the Key Mix Parameters*", **International Journal of Concrete Structures and Materials (South Korea)**, Volume 18, Issue 1, 2024.	The paper investigates how key mix parameters, such as water-to-binder ratio, fiber content, and supplementary cementitious materials, affect the transport properties and corrosion resistance of ultra-high-performance fiber-reinforced concrete (UHPFRC). It demonstrates that optimized mix designs significantly reduce permeability and chloride diffusion, enhancing protection against steel reinforcement corrosion. Overall, the study provides a clear link between microstructural refinement and durability performance, offering guidance for designing long-lasting UHPFRC structures in aggressive environments.
[J124]	Omer Ahmed, **Shamsad Ahmad**, and Saheed K. Adekunle, "*Carbon Dioxide Sequestration in Cementitious Materials: A Review of Techniques, Material Performance, and Environmental Impact*", **Journal of CO2 Utilization (Netherlands)**, Volume 83, May 2024, 102812.	The paper comprehensively reviews carbon dioxide sequestration methods in cementitious materials, covering direct and indirect carbonation techniques, material performance, and environmental benefits. It evaluates how CO_2 uptake influences microstructure, strength, and durability while assessing life-cycle impacts and carbon reduction potential. Overall, the study provides a critical understanding of CO_2 sequestration as a sustainable pathway to lower the cement industry's carbon footprint and develop greener construction materials.
[J123]	K. K. Kiran, Mohammed A. Al-Osta, **Shamsad Ahmad**, Ashraf A. Bahraq, "*A Novel Approach for Vibration Control of Base-Isolated Structures Under Seismic Load Using a Tuned Mass Damper-Clutching Inerter*", **Journal of Vibration Engineering & Technologies (Germany)**, Volume 12, pages 8737–8757, (2024).	The paper introduces a novel vibration control system combining a tuned mass damper with a clutching inerter for base-isolated structures subjected to seismic loading. It demonstrates through analytical modeling and simulations that the proposed system adaptively engages the inerter to maximize energy dissipation and minimize structural displacement and acceleration. Overall, the study provides an innovative and efficient seismic control strategy that enhances the resilience and stability of base-isolated structures.
[J122]	K. K. Kiran, Mohammed A. Al-Osta, **Shamsad Ahmad**, Ashraf A. Bahraq, "*Optimal Design of Tuned Mass and Negative Stiffness Amplifier Dampers with Inerter by H2 Optimal Control under Bidirectional Seismic Load*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 50, pages 1753–1783, (2025).	The paper presents an optimal design methodology for tuned mass and negative stiffness amplifier dampers integrated with an inerter, using H_2 optimal control theory to mitigate bidirectional seismic responses. It demonstrates that the proposed system effectively reduces structural vibrations and enhances energy dissipation efficiency compared to conventional damping devices. Overall, the study advances the development of intelligent hybrid damping systems for superior seismic performance and multidirectional vibration control in structures.
[J121]	**Shamsad Ahmad**, Amin Al-Fakih, Ashraf A. Bahraq, Mohammed Maslehuddin and Mohammed A. Al-Osta, "*Effect of Silica Fume Substitution by Limestone*	The paper investigates the effects of partially replacing silica fume with limestone powder and cement kiln dust on the shrinkage, durability, and sustainability of

	Powder and Cement Kiln Dust on the Shrinkage, Durability, and Sustainability of UHPC", **Environmental Science and Pollution Research (Germany)**, Volume 31, pages 26824–26838, (2024).	ultra-high-performance concrete (UHPC). It demonstrates that optimized substitutions reduce autogenous shrinkage and maintain high strength and durability while lowering environmental impact. Overall, the study promotes the use of industrial by-products to produce more sustainable and cost-effective UHPC without compromising performance.
[J120]	**Shamsad Ahmad**, Amin Al-Fakih, Ashraf A. Bahraq, and Moruf Olalekan Yusuf, "*Fracture toughness of UHPC mixtures: Effects of w/b ratio, cement and silica fume contents*", **Construction and Building Materials (USA)**, Volume 417, 23 February 2024, 135327.	The paper investigates how water-to-binder ratio, cement content, and silica fume dosage influence the fracture toughness of ultra-high-performance concrete (UHPC) mixtures. It demonstrates that optimizing these parameters enhances the matrix density and fiber–matrix bond, leading to improved crack resistance and energy absorption. Overall, the study provides valuable insights into mix design optimization for achieving superior toughness and durability of UHPC.
[J119]	Ibrahim N.A. Al-Duais, **Shamsad Ahmad,** Mohammed A. Al-Osta, Mohammed Maslehuddin, Tawfik A. Saleh, "*Properties of Alkali-Activated Concrete Made using the Optimum Combinations of Precursor Materials and Activation Parameters*", **Journal of Materials in Civil Engineering (American Society of Civil Engineers, USA)**, Volume 36, Issue 4, 2024, 04024042.	The paper investigates the properties of alkali-activated concrete produced using optimized combinations of precursor materials and activator parameters. It identifies the ideal mix proportions and activator concentrations that yield high compressive strength, improved durability, and a dense microstructure. Overall, the study provides a systematic approach for designing high-performance, sustainable alkali-activated concretes as viable alternatives to traditional Portland cement systems.
[J118]	Hayder Abbas Sallal, Mohammed Hamid Mahboba, Mohammed S. Radhi, Asad Hanif, Zainab S. Al-Khafaji, **Shamsad Ahmad**, and Zaher Mundher Yaseen, "*Effect of Adding (ZrO_2-ZnO) Nanopowder on the Polymer Blend (lamination and methyl vinyl silicone) in a Hybrid Nanocomposite Material*", **Journal of King Saud University Science (Saudi Arabia)**, Volume 36, Issue 2, 2024, 103061.	The paper examines the effect of incorporating zirconia–zinc oxide (ZrO_2-ZnO) nano-powder into a polymer blend of lamination resin and methyl vinyl silicone to form a hybrid nanocomposite. It demonstrates that the nano-powder addition enhances the composite's mechanical strength, thermal stability, and dielectric properties due to improved interfacial bonding and nanoparticle dispersion. Overall, the study contributes to the development of advanced polymer nanocomposites with improved multifunctional performance for engineering and electronic applications.
[J117]	**Shamsad Ahmad**, Ashraf A. Bahraq, Hammad R. Khalid, Lateef Olawale Alamutu, "*Stabilization/Solidification of Heavy Metals Contaminated Marl Soil using a Binary System of Cement and Fuel Fly Ash*", **Environmental Monitoring and Assessment (Netherlands)**, Volume 195, Issue 12, 2023, 1557.	The paper investigates the stabilization and solidification of heavy metal-contaminated marl soil using a binary binder system of cement and fuel fly ash. It demonstrates that the combined use of these stabilizers significantly improves the soil's strength and reduces the leachability of heavy metals through enhanced pozzolanic reactions and microstructural densification. Overall, the study offers a sustainable and effective remediation approach for reusing contaminated soils in geotechnical and construction applications.
[J116]	Mohammad Shahiq Khan, Sheroz Khan, Mohammad Arif, **Shamsad Ahmad**, Altaf Usmani, Ragab Khalil and	The paper reviews the role of smart construction technologies in mitigating health risks and ensuring

	Nacer Nacer, "*Smart construction technologies for protection from COVID-19 like pandemics*", **International Journal of Civil Engineering and Technology (India)**, Volume 14, Issue 5, September-October 2023, pp. 8-24.	safety during pandemics like COVID-19. It highlights the application of digital tools such as IoT, AI, robotics, and BIM for contactless operations, remote monitoring, and improved site management. Overall, the study emphasizes how integrating smart technologies enhances resilience, productivity, and worker safety in the construction industry during health crises.
[J115]	Arqam Azeem, **Shamsad Ahmad**, Asad Hanif, "*Wastewater utilization for concrete production: Prospects, challenges, and opportunities*", **Journal of Building Engineering (Netherlands)**, Volume 80, December 2023, 108078.	The paper reviews the feasibility of using treated and untreated wastewater in concrete production, analyzing its effects on fresh and hardened properties, durability, and environmental impact. It highlights that properly treated wastewater can serve as a sustainable alternative to freshwater without significantly compromising concrete quality. Overall, the study identifies key challenges, treatment requirements, and research needs, promoting wastewater reuse as a viable strategy for sustainable water management in the construction industry.
[J114]	**Shamsad Ahmad**, Ashraf A. Bahraq, Amin Al-Fakih, Mohammed Maslehuddin, and Mohammed A. Al-Osta, "*Durability and Mechanical Aspects of UHPC Incorporating Fly Ash and Natural Pozzolan*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 49, pages 5255–5266, (2024).	The paper investigates the effects of incorporating fly ash and natural pozzolan on the mechanical and durability properties of ultra-high-performance concrete (UHPC). It shows that partial replacement of cement with these supplementary materials improves workability, long-term strength, and resistance to chloride penetration and shrinkage. Overall, the study demonstrates that using fly ash and natural pozzolan enhances UHPC's sustainability and durability without compromising its superior mechanical performance.
[J113]	Fahad M. Alharthi, Mohammed A. Al-Osta, Muhammad K. Rahman, Ashraf A. Bahraq, **Shamsad Ahmad**, Mesfer M. Al-Zahrani, and A.S. Elamary, "*Flexural Behavior of Concrete Hollow-Core Beams Reinforced with GFRP Bars: Experimental and Analytical Investigation*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 49, pages 5267–5286, (2024).	The paper experimentally and analytically investigates the flexural behavior of concrete hollow-core beams reinforced with glass fiber-reinforced polymer (GFRP) bars. It demonstrates that GFRP reinforcement provides adequate strength, stiffness, and ductility while offering superior corrosion resistance compared to steel reinforcement. Overall, the study validates the structural efficiency of GFRP-reinforced hollow-core beams and provides analytical models for their safe and durable design in concrete structures.
[J112]	Waleed A Al-Awsh, Mohammed A Al-Osta, Ashraf A Bahraq, Qasem A Drmosh, Omar S B Al-Amoudi, **Shamsad Ahmad**, Tawfik A Saleh, "*Development of an atomistic model of cement-incorporated nano-red mud material*", **Journal of Building Engineering (Netherlands)**, Volume 79, November 2023, 107902.	The paper develops an atomistic model to investigate the interactions between cement hydration products and nano-red mud particles at the molecular scale. It reveals how nano–red mud influences bonding, microstructure formation, and mechanical stability within the cement matrix, enhancing overall material performance. Overall, the study provides fundamental insights into the nanoscale mechanisms governing red mud incorporation in cementitious systems, supporting the design of sustainable and high-performance construction materials.
[J111]	K.K. Kiran, **Shamsad Ahmad**, Mohammed A. Al-Osta, and Ashraf A. Bahraq, "*Enhancing the Seismic*	The paper proposes and evaluates an optimized hybrid vibration control system combining a tuned mass

	Resilience of Structures by using Optimum Combination of Tuned Mass Damper Inerter and Negative Stiffness Damper", **Structures (Netherlands)**, Volume 57, November 2023, 105253.	damper inerter (TMDI) and a negative stiffness damper (NSD) to enhance the seismic resilience of structures. Through analytical modeling and parametric analysis, it demonstrates that the combined TMDI–NSD system effectively reduces structural acceleration and displacement responses compared to conventional damping devices. Overall, the study provides a novel and efficient design framework for improving seismic performance and energy dissipation in building structures.
[J110]	Amin Al Fakih, Ali Odeh, Mohammed Abdul Azeez Mahamood, Madyan A. Al-Shugaa, Mohammed A. Al-Osta, **Shamsad Ahmad**, "*Review of the properties of sustainable cementitious systems incorporating ceramic waste*", **Buildings (Switzerland)**, Volume 13, Issue 8, 2023, 2105.	The paper reviews the use of ceramic waste as a supplementary cementitious material in sustainable cement-based systems. It summarizes how finely ground ceramic waste improves mechanical strength, durability, and microstructure while reducing clinker content and environmental impact. Overall, the study promotes ceramic waste recycling as an effective strategy for developing eco-friendly, high-performance cementitious materials that support circular economy practices in construction.
[J109]	Hassan Tumwiine, Mubashir Aziz, Umair Ali, Omar S.B. Al-Amoudi, **Shamsad Ahmad**, Abdulazeez Abdulraheem, "*Microstructural and strength variations in natural sands exposed to diverse environmental conditions*", **Case Studies in Construction Materials (UK)**, Volume 19, December 2023, e02403.	The paper investigates how different environmental exposures affect the microstructure and strength characteristics of natural sands. It reveals that variations in temperature, moisture, and chemical conditions alter particle morphology, mineral composition, and interparticle bonding, leading to significant changes in mechanical behavior. Overall, the study enhances understanding of sand property evolution under environmental influences, supporting more reliable geotechnical design and material selection for diverse field conditions.
[J108]	Khaled Own Mohaisen, **Shamsad Ahmad**, Saheed Kolawole Adekunle, Mohammed Maslehuddin, and Salah U. Al-Dulaijan, "*Effect of curing methods on the performance of UHPC*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 48, pages 13791–13805, (2023).	The paper examines how different curing methods influence the mechanical and durability performance of ultra-high-performance concrete (UHPC). It demonstrates that proper curing, particularly heat or steam curing, significantly enhances strength development, densifies the microstructure, and improves resistance to permeability and shrinkage. Overall, the study highlights the critical role of curing in optimizing UHPC's superior properties and ensuring consistent performance in practical applications.
[J107]	Mohammed A. Al-Huri, **Shamsad Ahmad**, Mohammed A. Al-Osta, Ali H. Al-Gadhib, Khaled M. Kharma, "*Performance of corroded RC beams strengthened in flexure using UHPC: effect of configuration and thickness of the UHPC layers*", **Engineering Structures (USA)**, Volume 292, 2023, 116519.	The paper experimentally investigates the flexural strengthening of corroded reinforced concrete beams using ultra-high-performance concrete (UHPC) layers with varying configurations and thicknesses. It shows that optimally designed UHPC layers effectively restore and enhance load-carrying capacity, stiffness, and ductility while improving corrosion protection. Overall, the study provides practical guidelines for selecting UHPC layer geometry to maximize structural rehabilitation efficiency and durability of corroded RC beams.

[J106]	Marwan A. Abdulqader, Hammad R. Khalid, Mohammed Ibrahim, Saheed Kolawole Adekunle, Mohammed Ali Alosta, **Shamsad Ahmad**, and Mohd Sajid, "*Physicochemical properties of limestone calcined clay cement (LC3) concrete made using Saudi clays*", **Journal of Materials Research and Technology (Brazil)**, Volume 25, July–August 2023, Pages 2769-2783.	The paper investigates the physicochemical and mechanical properties of limestone calcined clay cement (LC3) concrete produced using locally available Saudi clays. It demonstrates that optimized calcination and mix proportions yield LC3 concretes with comparable strength, durability, and microstructural performance to conventional Portland cement systems. Overall, the study supports the feasibility of using indigenous clays for LC3 production, promoting sustainable, low-carbon cement alternatives suited to regional materials and conditions.
[J105]	Amin Al-Fakih, Mohammed Abdul Azeez Mahamood, Mohammed A. Al-Osta, **Shamsad Ahmad**, "*Performance and efficiency of self-healing geopolymer technologies: A review*", **Construction and Building Materials (UK)**, Volume 386, July 2023, 131571.	The paper reviews recent advances in self-healing geopolymer technologies, focusing on mechanisms, materials, and efficiency in restoring mechanical and durability properties. It compares autogenous and autonomous healing approaches, evaluating factors influencing healing performance such as activator type, precursor composition, and healing agents. Overall, the study provides a comprehensive understanding of self-healing behavior in geopolymers and identifies future research directions to enhance their reliability and sustainability in construction applications.
[J104]	Amin Al-Fakih, Zakaria Mohamed Nor, Shaik Inayath Basha, M. Nasiruzzaman Shaikh, **Shamsad Ahmad**, Mohammed A. Al-Osta, Md. Abdul Aziz, "*Characterization and Applications of Red Mud, an Aluminum Industry Waste Material, in the Construction and Building Industries, as well as Catalysis*", **Chemical Record (Germany)**, Volume 23, Issue 5, 2023, e202300039.	The paper comprehensively reviews the properties, processing, and potential applications of red mud, a waste by-product of the aluminum industry, in construction materials and catalysis. It highlights red mud's chemical and mineralogical composition, its potential as a supplementary cementitious material, and its usefulness in ceramics, geopolymer production, and catalytic processes. Overall, the study promotes sustainable waste valorization by demonstrating how red mud can be effectively utilized to reduce environmental impact and support circular economy practices in construction and industry.
[J103]	Muhammad Umar Khan, **Shamsad Ahmad**, Mohammed A. Al-Osta, Ali Husain Algadhib, and Husain Jubran Al-Gahtani, "*Effect of fiber content on the performance of UHPC slabs under impact loading–experimental and analytical investigation*", **Advances in Concrete Construction (South Korea)**, Volume 15, Number 3, March 2023, pages 161-170.	The paper investigates the influence of steel fiber content on the impact performance of ultra-high-performance concrete (UHPC) slabs through experimental testing and analytical modeling. It demonstrates that increasing fiber dosage enhances impact resistance, energy absorption, and crack control without compromising structural integrity. Overall, the study provides valuable insights and validated models for optimizing fiber reinforcement in UHPC slabs subjected to impact loading.
[J102]	K.K. Kiran, Mohammed A. Al-Osta, **Shamsad Ahmad**, "*Optimum design and performance of a base-isolated structure with tuned mass negative stiffness inerter damper*", **Scientific Reports (UK)**, Volume 13, Issue 1, 2023, 4980.	The paper presents an optimized design framework for base-isolated structures equipped with a tuned mass negative stiffness inerter (TMNSI) damper to enhance seismic performance. It analytically and numerically demonstrates that the TMNSI system significantly improves vibration control efficiency, reducing structural acceleration and displacement responses

		compared to conventional isolation or damping systems. Overall, the study advances hybrid isolation-damping technology by providing optimal parameter relationships for achieving superior seismic resilience in building structures.
[J101]	Ibrahim N.A. Al-Duais, **Shamsad Ahmad**, Mohammed A. Al-Osta, Mohammed Maslehuddin, Tawfik A. Saleh, Salah U. Al-Dulaijan, "*Optimization of alkali-activated binders using natural minerals and industrial waste materials as precursor materials*", **Journal of Building Engineering (Netherlands)**, Volume 69, June 2023, 106230.	The paper focuses on optimizing alkali-activated binders developed from natural minerals and industrial waste materials as precursors for sustainable construction applications. Through experimental and statistical analyses, it identifies optimal mix proportions and activator conditions that enhance mechanical strength and durability while minimizing environmental impact. Overall, the study contributes to advancing eco-friendly binder technology by promoting the efficient reuse of natural and industrial resources in alkali-activated systems.
[J100]	**Shamsad Ahmad**, Abdulla M.A. Sharif, Mohammed A. Al-Osta, Mesfer M. Al-Zahrani, Abdulrahman M. Sharif, Mohammed Al-Huri, "*Flexural performance of pre-damaged RC beams strengthened with different configurations of UHPFRC layer –experimental and analytical investigation*", **Structures (Netherlands)**, Volume 48, February 2023, Pages 1772-1787.	The paper experimentally and analytically examines the flexural performance of pre-damaged reinforced concrete beams strengthened with various configurations of ultra-high-performance fiber-reinforced concrete (UHPFRC) layers. It demonstrates that optimal UHPFRC layer placement and thickness significantly restore and enhance load capacity, stiffness, and ductility. Overall, the study provides practical and validated guidelines for designing effective UHPFRC strengthening systems for damaged RC structures.
[J99]	Mohammed Al-Huri, Mohammed A. Al-Osta, **Shamsad Ahmad**, Salah U. Al-Dulaijan "*Effect of early-strengthening of RC beams using UHPC layers on their performance against reinforcement corrosion*", **Structural Concrete (Germany)**, Volume 24, Issue 2, 2023, pp. 2260–2279.	The paper investigates the impact of early strengthening of reinforced concrete beams with ultra-high-performance concrete (UHPC) layers on their resistance to reinforcement corrosion. It demonstrates that UHPC overlays not only enhance the beams' structural capacity but also significantly reduce corrosion initiation and propagation by providing a dense, impermeable protective layer. Overall, the study highlights the dual structural and durability benefits of early UHPC strengthening as a proactive approach to extend the service life of RC structures.
[J98]	Fadya Saadi Klak, Muyasser Mohammed Jomaa'h, **Shamsad Ahmad**, "*Behavior of Reinforced Concrete Members Exposed to Fire: Review Article*", **Tikrit Journal of Engineering Sciences (Iraq)**, Vol. 29, No. 4, 2022, pp. 56-68.	The paper provides a comprehensive review of the behavior of reinforced concrete members exposed to fire, summarizing the effects of elevated temperatures on material properties, structural performance, and failure mechanisms. It critically analyzes factors influencing fire resistance, such as concrete composition, reinforcement detailing, and thermal exposure conditions, and evaluates existing predictive models. Overall, the study consolidates current knowledge and identifies research gaps to improve fire safety design and performance assessment of RC structures.

[J97]	**Shamsad Ahmad**, Mohammed A. Al-Huri, Mohammed A. Al-Osta, Mohammed Maslehuddin Ali H. Al-Gadhib "*An Experimental Approach to Evaluate the Effect of Reinforcement Corrosion on Flexural Performance of RC Beams*", **Buildings (Switzerland)**, Volume 12, Issue 12, 2022, 2222.	The paper experimentally investigates how varying levels of reinforcement corrosion affect the flexural behavior of reinforced concrete beams. It quantifies the reduction in load-carrying capacity, stiffness, and ductility with increasing corrosion severity and identifies corresponding failure modes. Overall, the study provides fundamental insights into the structural degradation mechanisms caused by reinforcement corrosion, supporting more accurate assessment and design of durability-based rehabilitation strategies for RC structures.
[J96]	Tameem Mohammed Hashim, Mohammed Salah Nasr, Yasir Mohammed Jebur, Abdullah Kadhim, Zainab Alkhafaji, Mirza Ghouse Baig, Saheed Kolawole Adekunle, Mohammed A. Al-Osta, **Shamsad Ahmad**, and Zaher Mundher Yaseen "*Evaluating Rutting Resistance of Rejuvenated Recycled Hot-Mix Asphalt Mixtures Using Different Types of Recycling Agents*", **Materials (Switzerland)**, Volume 15, Issue 24, 2022, 8769.	The paper investigates the rutting resistance of rejuvenated recycled hot-mix asphalt mixtures incorporating different types of recycling agents. It demonstrates that the choice and dosage of rejuvenator significantly influence the mixture's stiffness, flow behavior, and resistance to permanent deformation. Overall, the study provides valuable insights into optimizing rejuvenator selection to balance performance and sustainability in recycled asphalt pavements.
[J95]	Mohammed A. Al-Huri**,** Mohammed A. Al-Osta, **Shamsad Ahmad** "*Finite Element Modelling of Corrosion-Damaged RC Beams Strengthened using the UHPC Layers*", **Materials (Switzerland)**, Volume 15, Issue 21, 2022, 7606.	The paper develops a finite element model to analyze the structural behavior of corrosion-damaged reinforced concrete beams strengthened with ultra-high-performance concrete (UHPC) layers. It accurately simulates corrosion effects, interfacial behavior, and load–deflection responses, validating the model utilizing the experimental results. Overall, the study provides a reliable numerical tool for predicting the performance of UHPC-strengthened corroded beams, aiding in the design and optimization of effective rehabilitation solutions.
[J94]	Khaled M. Kharma, **Shamsad Ahmad**, Mohammed A. Al-Osta, Mohammed Maslehuddin, Mohammed Al-Huri, Hammad Khalid, and Salah Uthman Al-Dulaijan, "*Experimental and Analytical Study on the Effect of Different Repairing and Strengthening Strategies on Flexural Performance of Corroded RC Beams*", **Structures (Netherlands)**, Volume 46, December 2022, Pages 336-352.	The paper experimentally and analytically evaluates various repair and strengthening techniques for corroded reinforced concrete beams to restore their flexural performance. It shows that methods such as section repair, fiber-reinforced polymer (FRP) strengthening, and ultra-high-performance concrete (UHPC) jacketing effectively recover or enhance load carrying capacity, stiffness, and ductility. Overall, the study provides practical guidance for selecting efficient rehabilitation strategies to extend the service life of deteriorated RC structures.
[J93]	Wasiu Olaniyi Alimi, Saheed Kolawole Adekunle, **Shamsad Ahmad**, Abduljamiu Olalekan Amao, and Mohd Sajid, "*Compressive Strength Evolution of Concrete Incorporating Hyperalkaline Cement Waste-Derived Portlandite*", **Construction and Building Materials (UK)**, Volume 358, December 2022, 129426.	The paper investigates the use of hyperalkaline cement waste-derived portlandite as a partial cement replacement to enhance the sustainability of concrete. It demonstrates that incorporating this waste material contributes to strength development through secondary hydration and improved microstructure, maintaining or even increasing compressive strength over time. Overall, the study presents an eco-efficient approach for recycling cementitious waste while

		supporting circular economy practices in concrete production.
[J92]	K.K. Kiran, **Shamsad Ahmad**, Mohammed A. Al-Osta, and Ashraf A. Bahraq, "*Performance of the Polyurea-Coated Steel Tank under Air Blast Load: A Numerical Study*", **Archives of Civil and Mechanical Engineering (Poland)**, Volume 23, article number 8, (2023.	The paper numerically investigates the blast resistance performance of steel tanks coated with polyurea under air blast loading. It demonstrates that the polyurea coating significantly reduces deformation, stress concentration, and failure risk by absorbing and dissipating blast energy. Overall, the study provides valuable insights into the effectiveness of polyurea as a protective coating for enhancing the blast resilience of steel structures.
[J91]	Mohammed A. Al-Osta, Khaled M. Kharma, **Shamsad Ahmad**, Mohammed Maslehuddin, Mohammed Al-Huri and Hammad Khalid, "*Strategies for Strengthening of Corroded Reinforced Concrete Beams using CFRP Laminates and UHPC Jacketing*", **Structural Concrete (Germany)**, Volume 24, Issue 1, 2023, pp. 1546–1571.	The paper explores effective strategies for strengthening corroded reinforced concrete beams using carbon fiber–reinforced polymer (CFRP) laminates and ultra-high-performance concrete (UHPC) jacketing. It demonstrates that combining CFRP and UHPC significantly restores and enhances the beams' load-carrying capacity, stiffness, and ductility while improving corrosion protection. Overall, the study provides a comparative and hybrid strengthening approach that offers durable, high-performance rehabilitation solutions for deteriorated concrete structures.
[J90]	**Shamsad Ahmad**, Mohammed Salem Mubarak Ba-Naimoon, Ashraf A. Bahraq, Omar S. Baghabra Al-Amoudi, Mohammed Maslehuddin, and Muhammad H. Al-Malack "*Stabilization/Solidification of Petroleum Oil-contaminated Soil using Different Stabilizers to Deliver a Pavement Sub-base Material*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 47, pages 13687–13697, (2022).	The paper investigates the effectiveness of various stabilizers in the stabilization and solidification of petroleum oil–contaminated soils for use as pavement sub-base materials. It demonstrates that additives such as cement, lime, and fly ash significantly improve the soil's strength, stiffness, and durability while immobilizing contaminants. Overall, the study provides an environmentally sustainable solution for reusing contaminated soils in civil infrastructure applications.
[J89]	Wasiu O. Alimia, Saheed K. Adekunle, **Shamsad Ahmad**, and Abduljamiu O. Amao, "*Carbon dioxide Sequestration Characteristics of Concrete Mixtures Incorporating High-volume Cement Kiln Dust*", **Case Studies in Construction Materials (UK)**, Volume 17, December 2022, e01414.	The paper examines the carbon dioxide sequestration potential of concrete mixtures containing high volumes of cement kiln dust (CKD). It demonstrates that incorporating CKD enhances the concrete's CO_2 uptake through accelerated carbonation while maintaining acceptable mechanical properties. Overall, the study highlights a sustainable approach to utilizing industrial by-products for carbon capture and emission reduction in the cement and concrete industry.
[J88]	Shaik Inayath Basha, Syed Shaheen Shah, **Shamsad Ahmad**, Mohammed Maslehuddin, Mesfer M. Al-Zahrani, Md. Abdul Aziz, "*Construction Building Materials as a Potential for Structural Supercapacitor Applications*", **Chemical Record (Germany),** Volume 22, Issue 11, 2022, e202200134.	The paper explores the feasibility of using conventional construction materials as multifunctional components for structural supercapacitors. It demonstrates that modified cementitious and composite materials can simultaneously provide mechanical strength and electrical energy storage capabilities. Overall, the study introduces an innovative concept linking civil engineering materials

		with energy storage technology, paving the way for sustainable, energy-efficient smart infrastructure.
[J87]	**Shamsad Ahmad,** Omar S. Bagahbara Al-Amoudi, Saad M.S. Khan, and Mohammed Maslehuddin, "*Effect of Silica Fume Inclusion on the Strength, Shrinkage and Durability Characteristics of Natural Pozzolan-Based Cement Concrete*", **Case Studies in Construction Materials (UK)**, Volume 17, December 2022, e01255.	The paper examines how incorporating silica fume enhances the performance of natural pozzolan-based cement concrete. It shows that silica fume significantly improves compressive strength, reduces shrinkage, and enhances durability by refining pore structure and strengthening the cementitious matrix.
[J86]	Mohammed A. Al-Osta, **Shamsad Ahmad**, Mohammed K. Al-Madani, Hammad R. Khalid, Mohammed Al-Huri and Amin Al-Fakih, "*Performance of Bond Strength Between Ultra-High-Performance Concrete and Concrete Substrates (Concrete Screed and Self-Compacted Concrete): An Experimental Study*", **Journal of Building Engineering (Netherlands)**, Volume 51, July 2022, 104291.	The paper experimentally investigates the bond strength between ultra-high-performance concrete (UHPC) overlays and different concrete substrates, including concrete screed and self-compacted concrete. It demonstrates that surface preparation and substrate type significantly influence interfacial bond behavior, with roughened surfaces and compatible substrate properties yielding superior adhesion.
[J85]	Rida Assaggaf, Mohammed Maslehuddin, Mohammed A. Al-Osta, Salah Uthman Al-Dulaijan, **Shamsad Ahmad**, "*Properties and Sustainability of Treated Crumb Rubber Concrete*", **Journal of Building Engineering (Netherlands)**, Volume 51, 1 July 2022, 104250.	The paper evaluates how treating crumb rubber improves the mechanical and durability properties of rubberized concrete while enhancing its sustainability. It shows that surface-treated rubber enhances bonding with the cement matrix, leading to higher strength, reduced permeability, and improved long-term performance. Overall, the study promotes treated crumb rubber concrete as an eco-friendly, durable material for sustainable construction.
[J84]	**Shamsad Ahmad**, Hammad R. Khalid, Abbas Albu Shaqraa, Ashraf A. Bahraq, Mohammed Maslehuddin, and Salah U. Al-Dulaijan, "*Properties of Natural Pozzolan-Based Geopolymer Concrete: Effects of Natural Pozzolan Content, Type of Alkaline Activator, and Silicate/Alkali Ratio*", **European Journal of Environmental and Civil Engineering (France)**, Volume 27, Issue 1, 2023, pp. 356–373.	The paper investigates how natural pozzolan content, type of alkaline activator, and silicate-to-alkali ratio influence the mechanical and durability properties of natural pozzolan-based geopolymer concrete. It demonstrates that optimizing these parameters significantly enhances geopolymerization, leading to improved compressive strength, reduced porosity, and better resistance to water and chemical ingress. The study establishes the critical role of activator chemistry and mix proportions in achieving balanced workability and strength, providing valuable insights for designing sustainable, high-performance geopolymer concretes using natural pozzolans.
[J83]	Sufyan Ghani, Sunita Kumari and **Shamsad Ahmad**, "*Prediction of the Seismic Effect on Liquefaction Behavior of Fine-Grained Soils Using Artificial Intelligence-Based Hybridized Modeling*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 47, pages 5411–5441, (2022).	The paper develops and validates advanced artificial intelligence-based hybrid models to predict the seismic-induced liquefaction potential of fine-grained soils. By combining machine learning techniques, such as artificial neural networks and evolutionary optimization algorithms, it accurately captures complex nonlinear relationships between seismic parameters, soil properties, and liquefaction behavior. The study outperforms conventional empirical methods, providing higher prediction accuracy and reliability.

[J82]	Shaik Inayath Basha, Md. Abdul Aziz, **Shamsad Ahmad**, Mesfer M. Al-Zahrani, Mohammed Shameem, and Mohammed Maslehuddin, "*Improvement of Concrete Durability using Nanocomposite Coating prepared by mixing Epoxy Coating with Submicron/Nano-carbon obtained from Heavy Fuel Oil Ash*", **Construction and Building Materials (UK)**, Volume 325, March 2022, 126812.	The paper presents a novel approach to enhancing concrete durability by developing an epoxy-based nanocomposite coating incorporating submicron/nanocarbon derived from heavy fuel oil ash. It demonstrates that the addition of the nanocarbon significantly improves coating barrier properties, leading to reduced water absorption, chloride penetration, and corrosion of embedded steel. Through detailed microstructural and electrochemical analyses, the study links the improved performance to the dense, conductive, and well-adhered coating structure.
[J81]	**Shamsad Ahmad,** Ashraf A. Bahraq, Abbas Albu Shaqraa, Hammad R. Khalid, Ali H. Al-Gadhib, and Mohammed Maslehuddin, "*Effects of key factors on the compressive strength of metakaolin and limestone powder-based alkali-activated concrete mixtures: an experimental and statistical study*", **Case Studies in Construction Materials (UK)**, Volume 16, June 2022, e00915.	The paper investigates how key parameters, such as activator concentration, liquid-to-binder ratio, curing temperature, and metakaolin-to-limestone ratio, affect the compressive strength of alkali-activated concrete made from metakaolin and limestone powder. Using experimental testing supported by statistical analysis and regression modeling, it identifies the most influential factors and their optimal ranges for strength development.
[J80]	Mohammed K. Al-Madani, Mohammed A. Al-Osta, **Shamsad Ahmad**, Hammad Khalid and Mohammed Al-Huri, "*Interfacial Bond Behavior between Ultra High Performance Concrete and Normal Concrete Substrates*", **Construction and Building Materials (UK)**, Volume 320, February 2022, 126229.	The paper examines the interfacial bond behavior between ultra-high-performance concrete (UHPC) overlays and normal-strength concrete (NC) substrates to improve composite structural performance. Through experimental testing under various surface preparation methods and curing conditions, it demonstrates that proper surface roughening and curing significantly enhance bond strength and failure mode, shifting from interface failure to cohesive failure within NC.
[J79]	Rida Alwi Assaggaf, Salah Uthman Al-Dulaijan, Mohammed Maslehuddin, Omar S. Baghabra Al-Amoudi, **Shamsad Ahmad**, Mohammed Ibrahim, "*Effect of Different Treatments of Crumb Rubber on the Durability Characteristics of Rubberized Concrete*", **Construction and Building Materials (UK)**, Volume 318, February 2022, 126030.	The paper investigates how various surface treatments of crumb rubber influence the durability of rubberized concrete. It shows that treating rubber particles, such as by NaOH washing, cement coating, or silane treatment, significantly improves their bonding with the cement matrix, reducing porosity and enhancing resistance to water penetration, chloride ingress, and carbonation.
[J78]	Mohammed Al-Huri, **Shamsad Ahmad**, and Mohammed A. Al-Osta, "*Evaluation of Compressive Strength of Ultra High Performance Fiber Reinforced Concrete Using Non-Destructive Tests*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Volume 47, pages 5395–5409, (2022).	The paper establishes reliable correlations between non-destructive test (NDT) results and the compressive strength of ultra-high-performance fiber-reinforced concrete (UHPFRC). By employing methods such as rebound hammer and ultrasonic pulse velocity tests, it demonstrates that these techniques can accurately estimate compressive strength when properly calibrated.
[J77]	Mohammed A. Al-Osta, Abdulrahman Mohammed Sharif, **Shamsad Ahmad**, Saheed, Kolawole Adekunle, Mohammed Al-Huri, and Abdulla Mohammed Sharif, "*Effect of Hybridization of Straight and Hooked Steel Fibers and Curing Methods*	The paper explores how combining straight and hooked steel fibers (fiber hybridization) and applying different curing methods affect the mechanical performance of ultrahigh-performance concrete (UHPC). It demonstrates that optimally hybridized

	on the Key Mechanical Properties of UHPC", **Journal of Materials Research and Technology (Brazil)**, Volume 15, November–December 2021, Pages 3222-3239.	fibers improve both tensile and flexural strength by enhancing crack-bridging and energy absorption, while appropriate curing, particularly heat or steam curing, further enhances strength development and fiber–matrix bonding.
[J76]	**Shamsad Ahmad**, Muhammad Umar Khan, Husain Jubran Al-Gahtani, and Salah U. Al-Dulaijan, "*Properties of High-Density Ultrahigh-Performance Concrete Containing Hematite Powder as a Partial Replacement of Sand*", **Journal of Materials in Civil Engineering (American Society of Civil Engineers, USA)**, Volume 34, Issue 3, 2022, 04021463.	The paper investigates the use of hematite powder as a partial sand replacement in ultrahigh-performance concrete (UHPC) to enhance its density and radiation-shielding capacity. It shows that incorporating hematite increases concrete density and compressive strength up to an optimal replacement level while maintaining workability and durability. The study demonstrates that hematite-filled UHPC combines superior mechanical properties with improved shielding performance, making it suitable for structural and radiation-protection applications such as nuclear and medical facilities.
[J75]	Omar S. Baghabra Al-Amoudi, **Shamsad Ahmad**, Mohammed Maslehuddin, Saad M.S. Khan, "*Lime-Activation of Natural Pozzolan for use as Supplementary Cementitious Material in Concrete*", **Ain Shams Engineering Journal (Egypt)**, Volume 13, Issue 3, 2022, 101602.	The paper shows that adding hydrated lime effectively activates natural pozzolan, enhancing its reactivity and performance as a supplementary cementitious material in concrete. Lime activation improves both early and later-age strength, refines the pore structure, and significantly enhances durability reducing water absorption, chloride ingress, carbonation, and corrosion while maintaining acceptable sulfate resistance and shrinkage.
[J74]	Shaik Inayath Basha, Md. Abdul Aziz, M. Maslehuddin, and **Shamsad Ahmad**, "*Preparation, Characterization, and Evaluation of the Anticorrosion Performance of Submicron/Nanocarbon from Jute Sticks*", **Chemistry-An Asian Journal (Germany)**, 16(23), 2021, pp. 3914–3930.	The paper presents the outcomes of a study on conversion of a low-cost biomass waste (jute sticks) into a characterized nano-additive that can be admixed with epoxy coating with substantially enhanced corrosion resistance as proved by electrochemical and exposure data, linking sustainable feedstocks to practical corrosion control.
[J73]	Shaik Inayath Basha, Arumugam Madhan Kumar, M. Maslehuddin, **Shamsad Ahmad**, Mohammad Mizanur Rahman, M. Shameem, Abbas Saeed Hakeem, Md Abdul Aziz, "*Preparation of submicron-/nano-carbon from heavy fuel oil ash and its corrosion resistance performance as composite epoxy coating*", **Journal of Cleaner Production (USA)**, Volume 319, 2021, 128735.	This paper describes a waste-to-function pathway: heavy fuel oil ash → submicron/nano-carbon → epoxy nanocomposite that achieves order-of-magnitude gains in electrochemical protection at a dosage of ≤1 wt%, with clear mechanisms and practical test evidence.
[J72]	Salah U. Al-Dulaijan, Mukhtar Oluwaseun Azeez, **Shamsad Ahmad**, and Mohammed Maslehuddin, "*Properties of High Performance Heavyweight Concrete Mixtures Containing Different Types of Coarse Aggregates*", **Advances in Concrete Construction (South Korea)**, 12(1), 2021, pp. 75-84.	This study explores how to produce heavyweight concrete with oven-dry density ≥2,600 kg/m³ using different types of coarse aggregates while maintaining structural and durability performance.
[J71]	Ashraf A. Bahraq, Mohammed Al-Osta, Muhammad I. Khan, and **Shamsad Ahmad**, "*Numerical and Analytical Modeling of Seismic Behavior of Beam-Column Joints Retrofitted with Ultra-High*	The paper delivers a bond-aware finite element recipe and a simple analytical shear model for UHPFRC-retrofitted RC joints, both validated using experimental data, giving engineers credible tools to

	Performance Fiber Reinforced Concrete", **Structures (UK)**, 2021, 32, pp. 1986-2003.	design and assess seismic upgrades without costly full-scale experimentation.
[J70]	Mohd Abul Hasan, **Shamsad Ahmad**, and Tariq Mohammed, "*Groundwater Contamination by Hazardous Wastes: A Review*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, 46(5), 2021, pp. 4191-4212.	The paper presents a method-oriented review that organizes contaminants, aquifer processes, and how to model them including a case study, enabling a usable guide for assessing and predicting impacts of hazardous wastes on groundwater.
[J69]	Yassir M. H. Mustafa, Omar S. Baghabra Al-Amoudi, **Shamsad Ahmad**, Mohammed Maslehuddin, and Muhammad H. Al-Malack, "*Utilization of Portland Cement with Limestone Powder and Cement Kiln Dust for Stabilization/Solidification of Oil-Contaminated Marl Soil"*, **Environmental Science and Pollution Research (Germany)**, 28(3), 2021, pp. 3196-3216.	The paper delivers a locally validated stabilization/solidification protocol for oil-contaminated marl using Portland cement with limestone powder and cement kiln dust, proves it clears USEPA strength requirements, and connects the results to real reuse targets (road layers), supported by microstructural evidence.
[J68]	Muhammad Umar Khan, **Shamsad Ahmad**, Akhtar Abbas Naqvi, and Husain Jubran Al-Gahtani, "*Shielding performance of heavy-weight ultra-high-performance concrete against nuclear radiation*", **Progress in Nuclear Energy (UK)**, 130, 2020, 103550.	The paper shows that a heavyweight UHPC, produced using hematite fines, yields shielding against nuclear radiation that beats conventional heavyweight concrete having similar density, establishing microstructural denseness as a second, powerful design lever alongside density for nuclear-radiation shields.
[J67]	Shaik Inayath Basha, Abdul Aziz, M. Maslehuddin, **Shamsad Ahmad**, Abbas Saeed Hakeem, and Muhammad Mizanur Rahman "*Characterization, Processing, and Application of Heavy Fuel Oil Ash, an Industrial Waste Material – A Review*", **Chemical Record (Germany)**, 20(12), 2020, pp. 1568-1595.	This article describes about how a Heavy Fuel Oil Ash (HFOA) waste stream can be turned into **a** structured research agenda, cataloging what HFOA is**,** how to process it**,** where it can be used, and what to work on next to scale safe, value-added applications.
[J66]	**Shamsad Ahmad**, Mohammed Maslehuddin, Mohammed Shameem, Rayhan Md. Faysal, Saheed Kolawole Adekunle, "*Effect of Abrasion and Chemical Treatment of Recycled Aggregate on the Workability, Strength, and Durability Properties of Concrete*", **European Journal of Environmental and Civil Engineering (France)**, 26(8), pp. 3276–3291, 2022.	The study supplies an evidence-backed, two-step recycled aggregate pretreatment that significantly enhanced workability, strength, and durability of recycled aggregate concrete making a stronger case for structural use of recycled aggregates.
[J65]	Mohammed Hamdan Aldayel Aldossary, **Shamsad Ahmad**, and Ashraf Awadh Bahraq, "*Effect of Total Dissolved Solids-Contaminated Water on the Properties of Concrete*", **Journal of Building Engineering (Netherlands)**, Vol. 32, 2020, Article number 101496.	The paper provides an evidence-based effect of total dissolved solids in water (TDS) on the performance concrete and a reuse limit (≤ 1,000 ppm), balancing mechanical benefits against chloride-related durability risks when using TDS-contaminated mixing water.
[J64]	Osama Massarweh, Mohammed Maslehuddin, Salah U. Al-Dulaijan, M. Shameem, and **Shamsad Ahmad,** "*Development of a Concrete Set Retarder Utilizing Electric Arc Furnace Dust*", **Construction and Building Materials (UK)**, Vol. 255, 2020, Article number 119378.	The paper presents an evidence-backed pathway to use electric arc furnace dust as a solid set-retarder showing effective setting delay with maintained strength, while highlighting shrinkage as the main design consideration.
[J63]	Mehboob Rasul, **Shamsad Ahmad**, Saheed Kolawole Adekunle, Salah U. Al-Dulaijan, Mohammed Maslehuddin, and Syed Imran Ali, "*Evaluation of the effect of exposure duration and fiber content on*	The paper clarifies that polypropylene fibers are excellent for ambient ductility/spalling mitigation**,** but cannot be relied on for residual reinforcement after sustained 300 °C exposure; designers should consider

	mechanical properties of polypropylene fiber-reinforced UHPC mixtures subjected to sustained elevated temperature", **Journal of Testing and Evaluation (American Society for Testing and Materials, USA)**, 48(6), 2020, 4355-4369.	hybrid systems (e.g., adding steel fibers) when post-heat structural capacity matters.
[J62]	**Shamsad Ahmad**, Adamu Lawan, and Mohammed Al-Osta, "*Effect of sugar dosage on setting time, microstructure and strength of Type I and Type V Portland cements*", **Case Studies in Construction Materials (UK)**, Vol. 13, 2020, Article number e00364.	The paper delivers a practical, evidence-based dosage versus response map for ordinary sugar as a retarder useful at in the dosage range of 0.05–0.10% for extending setting time while limiting strength loss, supported by microstructural observations that explain the performance trends.
[J61]	**Shamsad Ahmad**, Omar S. Baghabra Al-Amoudi, Yassir M. H. Mustafa, Mohammed Maslehuddin, and Muhammad H. Al-Malack, "*Stabilization/Solidification of oil-contaminated sandy soil using Portland cement and supplementary cementitious materials*", **Journal of Materials in Civil Engineering (American Society of Civil Engineers, USA)**, 32(8), 2020, Article number 04020220.	The paper presents a practical, mechanism-backed S/S recipe showing that the blend of Portland cement and limestone powder can turn oil-contaminated sand into material meeting regulatory and engineering targets supporting reuse (e.g., road layers) while reducing environmental risk.
[J60]	Rayhan Md. Faysal, Mohammed Maslehuddin, Mohammed Shameem, **Shamsad Ahmad**, Saheed Kolawole Adekunle, "*Effect of mineral additives and two-stage mixing on the performance of recycled aggregate concrete"*, **Journal of Material Cycles and Waste Management (Japan)**, 22(5), 2020, pp. 1587-1601.	The study delivers an integrated, experimentally backed case that combining mineral additives with two-stage mixing approach meaningfully upgrades RAC performance and cost-efficiency, clear guidance for designers targeting greener concrete without compromising with the quality.
[J59]	**Shamsad Ahmad**, Rida Alwi Assaggaf, Saheed Kolawole Adekunle, Omar S. Baghabra Al-Amoudi, Mohammed Maslehuddin, and Syed Imran Ali, "*Influence of Accelerated Carbonation Curing on the Properties of Self-Compacting Concrete Mixtures Containing Different Mineral Fillers*", **European Journal of Environmental and Civil Engineering (France)**, published online in 2019.	The study shows that ACC can replace a week of moist curing for SCC while maintaining durability indices, with better results when SF is part of the filler system, and highlights shrinkage control as the main practical concern.
[J58]	Rida Alwi Assaggaf, Saheed Kolawole Adekunle, **Shamsad Ahmad**, Mohammed Maslehuddin, Omar S. Baghabra Al-Amoudi, and Syed Imran Ali, "*Mechanical Properties, Durability Characteristics and Shrinkage of Plain Cement and Fly Ash Concretes Subjected to Accelerated Carbonation Curing*", **Journal of the South African Institution of Civil Engineering (South Africa)**, 61(4), 2019, 73-81.	The paper delivers a clear, microstructure-backed map of advantages and disadvantages of ACC: strong early strength and surface densification**,** elastic/tensile parity**,** a durability gain for PCC but loss for FA, and higher shrinkage (manageable by post-ACC misting), all under a practical ACC recipe (carbonation for 10 h at a pressure of 60 psi) suitable for precast.
[J57]	Omar S.B. Al-Amoudi, **Shamsad Ahmad**, Saad M.S. Khan, and Mohammed Maslehuddin, "*Durability performance of concrete containing Saudi natural pozzolans as supplementary cementitious material*", **Advances in Concrete Construction (South Korea)**, 8(2), 2019, 119-126.	The study presented in this paper provides a region-specific, multi-metric dataset and a clear benefit–trade-off for Saudi natural pozzolans, supporting their performance-based adoption in durability-critical concrete, especially for chloride/sulfate exposure classes.
[J56]	Muyasser Mohammed Jomaa'h, Hanadi Abdulhakem Abdulazez, and **Shamsad Ahmad**, "*Evaluation of Structural Lightweight Concrete Produced Utilizing*	The paper presents a tested recipe and evidence base showing that crushed medical plastic waste can replace a significant portion of coarse aggregate to

	Crushed Medical Solid Waste Materials", **Journal of Testing and Evaluation (American Society for Testing and Materials, USA)**, 47(4), 2019, 2737–2749.	make structural lightweight concrete, with quantified effects on workability, density, and strength.
[J55]	Mukhtar Oluwaseun Azeez, **Shamsad Ahmad**, Salah U. Al-Dulaijan, Mohammed Maslehuddin, and Akhtar A Naqvi, "*Radiation shielding performance of heavy-weight concrete mixtures*", **Construction and Building Materials (UK)**, 224, 2019, 284-291.	The paper establishes, with a controlled experimental matrix, that heavier concrete is better for γ-shielding regardless of which heavyweight coarse aggregate was used and supplies empirical correlations between density and shielding that can be useful for preliminary design.
[J54]	**Shamsad Ahmad**, Mehboob Rasul, Saheed Kolawole Adekunle, Salah U. Al-Dulaijan, Mohammed Maslehuddin, and Syed Imran Ali, "*Mechanical Properties of Steel Fiber-Reinforced UHPC Mixtures Exposed Elevated Temperature: Effects of Exposure Duration and Fiber Content*", **Composites Part B-Engineering (UK)**, 168, 2019, 291-301.	The paper presents a duration-aware, fiber-sensitive map of UHPC's residual mechanics at an elevated temperature of 300 °C and compact equations to use it clarifying that strength can rise even as stiffness and flexural capacity fall with longer hot exposure.
[J53]	**Shamsad Ahmad**, Khaled Own Mohaisen, Saheed Kolawole Adekunle, Salah U. Al-Dulaijan, and Mohammed Maslehuddin, "*Influence of admixing natural pozzolan as partial replacement of cement and microsilica in UHPC mixtures*", **Construction and Building Materials (UK)**, 198, 2019, 437-444.	The work presented in the paper provided experimentally validated replacement limits and a test workflow showing natural pozzolan can meaningfully replace a part of cement and eliminate the necessity of silica-fume without compromising with the UHPC performance.
[J52]	Ashraf Awadh Bahraq, Mohammed Ali Al-Osta, **Shamsad Ahmad**, Mesfer M. Al-Zahrani, Salah U. Al-Dulaijan, and Muhammad Kalimur Rahman, "*Experimental and Numerical Investigation of Shear Behavior of RC Beams Strengthened by Ultra-High Performance Concrete*", **International Journal of Concrete Structures and Materials (South Korea)**, 13(1) 2019, 1-19.	The paper provides member-scale evidence and a validated finite element tool showing that thin UHPC jacketing can reliably upgrade shear behavior, with the largest gains at lower shear span-to-effective depth ratio and with three-side jacketing when flexural engagement is desired.
[J51]	**Shamsad Ahmad**, Sifatullah Bahij, Mohammed Al-Osta, Saheed Kolawole Adekunle, Salah U. Al-Dulaijan, "*Shear Behavior of Ultra-High-Performance Concrete Beams Reinforced with High-Strength Steel Bars*", **ACI Structural Journal (American Concrete Institute, USA)**, 116(4), 2019, 3-14.	The paper presents a member-level dataset plus a validated mechanistic model showing that shear span-to-effective depth ratio, fibers, and stirrups, not longitudinal steel ratio, control UHPC shear capacity in beams with high-strength reinforcement, directly informing analysis and design.
[J50]	Muyasser Mohammed Jomaa'h, **Shamsad Ahmad**, and Hussein M. Algburi "*Flexural Behavior of Reinforced Concrete One-Way Slabs with Different Ratios of Lightweight Coarse Aggregate*", **Tikrit Journal of Engineering Sciences (Iraq)**, 25 (4), 2018, 36-44.	The paper delivers a slab-scale, side-by-side dataset showing how type and proportion of lightweight coarse aggregate govern strength, ductility, stiffness, and capacity, providing designers with quantified trade-offs for weight reduction vs. flexural performance.
[J49]	Mohammed A. Al-Osta, **Shamsad Ahmad**, Adil I. Khan, and Ali H. Algadhib, "*Evaluation of Unconfined Compressive Strength of Carbonate Sedimentary Rocks in Saudi Arabia using Indirect Tests*", **Arabian Journal of Geosciences (Saudi Arabia)**, 11(12), June 2018, Article number 301, 1-12.	The study presented in this paper delivers a practical, locally validated toolkit to predict UCS of Saudi carbonate rocks from quick, indirect tests, especially ultrasonic pulse velocity reducing dependence on time-consuming core preparation and compression testing.

[J48]	Mohammed A. Al-Osta, Hamdi A. Al-Sakkaf, Alfarabi M. Sharif, **Shamsad Ahmad**, and Mohammad H. Baluch, "*Finite Element Modeling of Corroded RC Beams Using Cohesive Surface Bonding Approach*", **Computers and Concrete (South Korea)**, 22(2), 2018, pp. 167-182.	The paper presents a validated, practical 3D finite element modeling recipe based on cohesive surface bond modeling that can be used to pinpoint which corrosion mechanisms and locations are most critical for flexural capacity in RC beams.
[J47]	Muhammad Irfan Khan, Mohammed Ali Al-Osta, **Shamsad Ahmad**, and Muhammad Kalimur Rahman, "*Seismic Behavior of Beam-Column Joints Strengthened with Ultra-High Performance Fiber Reinforced Concrete*", **Composite Structures (UK),** 200, 2018, pp. 103-119.	The paper demonstrates experimentally backed evidence and practical guidance that thin, cast-in-place UHPFRC jackets are a superior and efficient retrofit for deficient beam–column joints in seismic applications.
[J46]	Yassir M. Mustafa, Omar S. Baghabra Al-Amoudi, **Shamsad Ahmad**, and Mohammed Maslehuddin "*Geotechnical Properties of Plastic Marl Contaminated with Diesel*", **Arabian Journal for Science and Engineering (Saudi Arabia),** 43(10), 2018, pp. 5573-5583.	The paper presents a targeted dataset and microstructural rationale showing that diesel contamination of marl soil drives non-monotonic shifts in plastic marl's index and strength properties, while compaction metrics remain relatively stable**,** actionable insight for geotechnical assessment and remediation/design in hydrocarbon-affected sites.
[J45]	Saeid A. Alghamdi and **Shamsad Ahmad**, "*On Durability of Reinforced Concrete Structures: A Design Methodology for RC Beams and Columns in Corrosive Environments*", **Arabian Journal for Science and Engineering (Saudi Arabia),** 43(10), 2018, pp. 5387-5396.	The paper reports about how the data collected through experiments pertaining to reinforcement corrosion were used to develop a practical, automated design method that correlates mix quality parameters, cover thickness, and exposure conditions to produce durability-oriented designs for RC beams/columns exposed to chloride environments.
[J44]	Sifatullah Bahij, Saheed Kolawole Adekunle, Mohammed Al-Osta, **Shamsad Ahmad**, Salah U. Al-Dulaijan, and Muhammad Kalimur Rahman, "*Numerical Investigation of the Shear Behavior of Reinforced Ultra-High Performance Concrete Beams*", **Structural Concrete (Germany)**, Volume 19, Issue 1, February 2018, Pages 305-317.	The paper delivers a validated FE framework and a clean parameter-effect map for shear behavior of reinforced UHPC beams**,** with takeaways that inform both modeling practice and evolving design guidance.
[J43]	Muhammad Umar Khan, **Shamsad Ahmad**, and Husain Jubran Al-Gahtani, "*Chloride-Induced Corrosion of Steel in Concrete: An Overview on Chloride Diffusion and Prediction of Corrosion Initiation Time*", **International Journal of Corrosion (UK)**, Vol. 2017, Article ID 5819202, pp. 1-9.	The research contribution described in this paper is an integrated, factor-aware framework for predicting reinforcement corrosion initiation time that moves the field beyond Fickian assumptions by explicitly incorporating chloride binding and multidirectional ingress.
[J42]	**Shamsad Ahmad**, Rida Alwi Assaggaf, Mohammed Maslehuddin, Omar S. Baghabra Al-Amoudi, Syed Imran Ali, and Saheed Kolawole Adekunle, "*Effects of Carbonation Pressure and Duration on Strength Evolution of Concrete Subjected to Accelerated Carbonation Curing*", **Construction and Building Materials (UK)**, Vol. 136, 2017, pp. 565-573.	The paper provides an optimization-ready, evidence base for accelerated carbonation curing of concrete, indicating that an adequate exposure time (and not simply higher CO_2 pressure) is the dominant driver of early strength and CO_2 uptake.
[J41]	**Shamsad Ahmad**, "*Prediction of Residual Flexural Strength of Corroded Reinforced Concrete Beams*", **Anti-Corrosion Methods and Materials (UK)**, Vol. 64, No. 1, 2017, pp. 69-74.	The work presented in this paper resulted in a practical, data-driven tool to convert corrosion measurements into residual flexural strength of RC

		beams, bridging durability diagnostics and structural capacity evaluation.
[J40]	Saeid A. Alghamdi, **Shamsad Ahmad**, and Adamu Lawan, "*Optimization of Concrete Mixture Design and Cover Thickness for Reinforced Concrete Members under Chloride Exposure*", **ACI Materials Journal (American Concrete Institute, USA),** Vol. 113, No. 5, 2016, pp. 589-598.	The paper describes a data-rich, experimentally validated pathway to co-optimize mix design and cover thickness using reinforcement corrosion rate as the performance target, enabling chloride-resistant RC design with quantified service-life assurance.
[J39]	**Shamsad Ahmad**, Ibrahim Hakeem, and Mohammed Maslehuddin, "*Development of an Optimum Mixture of Ultra-High Performance Concrete*", **European Journal of Environmental and Civil Engineering (France),** Vol. 20, No. 9, 2016, pp. 1106-1126.	The paper delivers a cost-conscious, locally sourced UHPC mix with demonstrated performance and a clear procedure to reproduce it, broadening UHPC's practical applicability.
[J38]	Yassin Shaher Sallam **and Shamsad Ahmad**, "*Effect of Concrete Strength Class on Performance of CFRP-Confined Concrete under Compression*", **Journal of Testing and Evaluation (American Society for Testing and Materials, USA)**, Vol. 44, No. 1, 2016, pp. 141-147.	The paper establishes, with test evidence and a compact equation, that CFRP confinement is most efficient for lower-strength concrete, and it supplies a strength-class–aware predictor of confinement effectiveness for design and assessment.
[J37]	**Shamsad Ahmad**, Ahmed Zubair, and Mohammed Maslehuddin, "*Effect of Key Mixture Parameters on Flow and Mechanical Properties of Reactive Powder Concrete*", **Construction and Building Materials (UK)**, Vol. 99, 2015, pp. 73-81.	The paper delivers a flow-controlled, factorial evidence base and simple predictive models that practitioners can use to optimize RPC mixes for strength and stiffness while meeting workability requirements.
[J36]	Saheed Kolawole Adekunle, **Shamsad Ahmad**, Mohammed Maslehuddin, and Husain Jubran Al-Gahtani, "*Properties of SCC prepared using Natural Pozzolana and Industrial Wastes as Mineral Fillers*", **Cement & Concrete Composites (UK)**, Vol. 62, 2015, pp. 125-133.	The reported work establishes a validated, ternary filler strategy (NP and industrial waste) for producing high-performance, corrosion-resistant SCC at lower cost while identifying baghouse dust as a cautionary filler due to weaker strengths.
[J35]	**Shamsad Ahmad** and Mohammed Hussein Al-Tholaia, "*Evaluation of Corrosion Resistance of Coated Steel Strips Embedded in Mortar under Chloride Exposure*", **Anti-Corrosion Methods and Materials (UK)**, Vol. 62, No. 1, 2015, pp. 29–36.	The paper describes a practical, metrics-based screening method (chloride threshold level and time to corrosion initiation) and an evidence-backed coating selection (epoxy) for embedded steel under chloride attack providing tools that can be used by the practitioners for specifications and service-life planning.
[J34]	**Shamsad Ahmad**, Ibrahim Hakeem, and Abul Kalam Azad, "*Effect of Curing, Fibre Content and Exposures on Compressive Strength and Elasticity of UHPC*", **Advances in Cement Research (UK)**, Vol. 27, Issue 4, 2015, pp. 233-239.	The experimental work presented in this paper shows that the curing choice, fibre content, and environmental cycling have tempered effects on UHPC's compressive strength and modulus of elasticity, with an optimal fibre content and mild thermal cycling emerging as key factors.
[J33]	**Shamsad Ahmad**, Ibrahim Hakeem, and Mohammed Maslehuddin, "*Development of UHPC Mixtures Utilizing Natural and Industrial Waste Materials as Partial Replacements of Silica Fume and Sand*", **Scientific World Journal (USA)**, Vol. 2014, No. 713531, August 2014.	This paper describes a scientifically validated pathway to sustainable UHPC, proving that natural pozzolana, fly ash, and quarry waste can partially replace high-cost materials without compromising with strength or durability, while also lowering environmental impact and production cost.

[J32]	**Shamsad Ahmad**, Saheed Kolawole Adekunle, Mohammed Maslehuddin, and Abul Kalam Azad, "*Properties of Self-Consolidating Concrete made Utilizing Alternative Mineral Fillers*", **Construction and Building Materials (UK)**, Vol. 68, 2014, pp. 268-276.	The paper presents a controlled, end-to-end performance map confirming that alternative, locally sourced mineral fillers can yield cost-effective, durable SCC, and it documents the mix/admixture adjustments needed to get there.
[J31]	**Shamsad Ahmad**, Ahmed Zubair, and Mohammed Maslehuddin, "*Effect of the Key Mixture Parameters on Shrinkage of Reactive Powder Concrete*", **Scientific World Journal (USA)**, Vol. 2014, No. 426921, June 2014.	The paper delivers a factorial dataset and a validated equation that quantify and rank how water/binder ratio, cement and silica fume affect RPC shrinkage, providing a practical optimal approach for RPC mix design.
[J30]	Mohammed M. Hussein Al-Tholaia, Abul K. Azad, **Shamsad Ahmad** and Muhammed, H. Baluch, "*A Comparative Study of Corrosion Resistance of Different Coatings for Mortar-Embedded Steel Plates*", **Construction and Building Materials (UK)**, Vol. 56, 2014, pp. 74-80.	The paper describes a practical, multi-method benchmarking framework and shows that epoxy is the most reliable protection for mortar-embedded steel plates under chloride attack, directly recommending material selection for PCCP joints and similar details.
[J29]	**Shamsad Ahmad**, "*An Experimental Study on Correlation between Concrete Resistivity and Reinforcement Corrosion Rate*", **Anti-Corrosion Methods and Materials (UK)**, Vol. 61, Issue 3, 2014, pp. 158-165.	The paper turns routine resistivity measurements into informative corrosion-rate estimates through an experimentally derived, theory-consistent correlation between concrete resistivity and reinforcement corrosion rate.
[J28]	**Shamsad Ahmad** and Saeid A. Al-Ghamdi, "*A Statistical Approach to Optimize Concrete Mixture Design*", **Scientific World Journal (USA)**, Vol. 2014, No. 561539, February 2014.	The work presented in this paper turns a small, well-planned factorial dataset into a usable optimization framework for proportioning concrete mixes, complete with a validated strength model and cost-aware decision options in terms of water/cementitious material ratio, cementitious material content, and fine/total aggregate ration.
[J27]	**Shamsad Ahmad**, "*Effect of Ohmic Drop on Accuracy of Reinforcement Corrosion Rate Measured using Different Set-ups*", **Journal of Testing and Evaluation (American Society for Testing and Materials, USA)**, Vol. 42, No. 4, 2014, pp. 872–880.	The paper describes a methodologically sound accuracy audit of LPR corrosion-rate measurements in concrete, proving that proper IR-drop handling is essential and that some commercial implementations can mislead when IR compensation is used.
[J26]	**Shamsad Ahmad**, Mohammed Abdul Azeem Jibran, Abul Kalam Azad, and Mohammed Maslehuddin, "*A Simple and Reliable Set-up for Monitoring Corrosion Rate of Steel Rebars in Concrete*", **Scientific World Journal (USA)**, Vol. 2014, No. 525678, January 2014.	The paper delivers a field-friendly LPR methodology that can be adopted for making electrochemical corrosion-rate monitoring of rebars more accurate and defensible.
[J25]	**Shamsad Ahmad**, Yassin Shaher Sallam, and Mosaad Abdulaziz Al-Hawas, "*Effects of Key Factors on Compressive and Tensile Strengths of Concrete Exposed to Elevated Temperatures*", **Arabian Journal for Science and Engineering (Saudi Arabia)**, Vol. 39, Issue 6, 2014, pp. 4507-4513.	The paper presents experimentally grounded guidance on how mix design options govern the compressive and tensile resilience of concrete at elevated temperatures, with a clear threshold behavior around 100 °C and an identified mix proportion that performs best.
[J24]	Saeid A. Alghamdi and **Shamsad Ahmad**, "*Service Life Prediction of RC Structures based on Correlation between Electrochemical and Gravimetric Reinforcement Corrosion Rates*", **Cement & Concrete Composites (U.K.)**, Vol. 47, 2014, pp. 64-68.	The paper, firstly describe an empirical equation correlating reinforcement corrosion rates measured electrochemically and gravimetrically, and secondly it delivers a calibrated, experimentally grounded pathway to translate electrochemical corrosion

		measurements into service-life predictions for RC structures exposed to corrosive environments.
[J23]	**Shamsad Ahmad**, "*Evaluation of Effect of Superplasticizer on Performance of Self-Compacting Concrete"*, **Journal of Testing and Evaluation (American Society for Testing and Materials, USA),** Vol. 41, Issue 5, 2013, pp. 754-760.	The experimental study presented in this paper depicts a typical methodology for selecting a suitable type and optimum dosage of superplasticizer for producing efficient and economical mixtures of self-compacting concrete. The effect of three typical brands of polycarboxylate-based superplasticizers on the performance of mixtures of self-compacting concrete (in terms of self-compactability, strength, and durability characteristics), with the goal of selecting a suitable type and optimum dosage of superplasticizer.
[J22]	**Shamsad Ahmad** and Abul Kalam Azad "*An exploratory study on correlating the permeability of concrete with its porosity and tortuosity*", **Advances in Cement Research (UK)**, Vol. 25, Issue 5, July 2013, pp. 288 –294.	The paper's key contribution is an experimentally validated, theory-consistent prediction of porosity/tortuosity ratio that can be used to determine concrete permeability, giving practitioners and modelers a better microstructure-informed handle on durability.
[J21]	Ibrahim Hakeem, Abul Kalam Azad, and **Shamsad Ahmad,** "*Effect of Steel Fibers and Thermal Cycles on Fracture Properties of Ultra-High Performance Concrete*", **ASTM Journal of Testing and Evaluation (American Society for Testing and Materials, USA),** Vol. 41, Issue 3 (May 2013).	The paper correlates steel-fiber dosage and thermal cycling history to UHPC's fracture toughness and energy measures, providing a rare, fracture-mechanics dataset and an environmental curing pathway directly relevant to UHPC exposed to hot-weather.
[J20]	Abul Kalam Azad, **Shamsad Ahmad**, and Ibrahim Hakeem, "*Effect of Cyclic Exposure and Fiber Content on Tensile Properties of Ultra-High Performance Concrete*", **Advances in Cement Research (UK)**, Vol. 25, Issue 5, April 2013, pp. 273 –280.	The paper established a clear, experimentally backed link between fiber dosage and tensile/toughness performance of UHPC under realistic cyclic environments, supplying benchmark values (MOR, residual strengths, flexural toughness) and test protocols that practitioners and modelers can use for durability-based UHPC design.
[J19]	**Shamsad Ahmad**, Yassin Shaher Sallam, and Ishaq Abdul Razzaq Al-Hashmi, "*Optimizing Dosage of Lytag used as Coarse Aggregate in Lightweight Aggregate Concretes*", **Journal of the South African Institution of Civil Engineering (South Africa),** Vol. 55, No. 1, April 2013, pp. 80-84.	The work presented in the paper experimentally validated dosage versus performance map for Lytag LWAC, pinpointing a practical optimum dosage and quantifying the mechanical, density, and workability responses needed for structural design and mix optimization.
[J18]	**Shamsad Ahmad** and Saeid A. Al-Ghamdi, "*A Study on Effect of Coarse Aggregate Type on Concrete Performance*", **Arabian Journal for Science and Engineering (Saudi Arabia),** Vol. 37, August 2012, pp. 1777–1786.	The experimental work reported in the paper established relationship between aggregate type and both mechanical performance and durability against reinforcement corrosion across a wide range of mix parameters confirming that aggregate choice is not just a strength issue but a durability issue as well.
[J17]	**Shamsad Ahmad**, Abul Kalam Azad, and Kevin F. Loughlin, "*Effect of the Key Mixture Parameters on Tortuosity and Permeability of Concrete*", **Journal of Advanced Concrete Technology (Japan Concrete Institute, Japan),** Vol. 10, March 2012, pp. 86-94.	The work advances concrete mix design from "strength-only" to a connectivity-aware, physics-grounded approach, providing measurable levers (w/cm ratio, SCMs, packing, curing) to control tortuosity and permeability, the properties that actually govern durability of concrete.

[J16]	Abul Kalam Azad, **Shamsad Ahmad**, and Basheer Hasan Ali Al-Gohi, "*Flexural Strength of Corroded Reinforced Concrete Beams*", **Magazine of Concrete Research (UK),** 62, No. 6, June 2010, pp. 405-414.	The work turns corrosion damage metrics into actionable predictions of flexural performance, giving engineers defensible tools for load rating, life-extension decisions, and retrofit design of chloride-affected RC beams.
[J15]	**Shamsad Ahmad** "*Techniques for inducing Accelerated Corrosion of Steel in Concrete* ", **Arabian Journal for Science and Engineering (Saudi Arabia), in the theme issue** "**Corrosion and its Monitoring**", Vol. 34, No.2C, December (2009), pp. 95-104.	The paper turns a scattered toolbox into a calibrated methodology, enabling accelerated corrosion tests that are faster, reproducible, and more representative of field deterioration, therefore the results can be used for service-life prediction, assessment, and strengthening design of corroded reinforced concrete members.
[J14]	Omar S. Baghabra Al-Amoudi, Walid A. Al-Kutti, **Shamsad Ahmad**, and Mohammad Maslehuddin, "*Correlation between Compressive Strength and certain Durability Indices of Plain and Blended Cement Concretes*", **Cement & Concrete Composites (UK)**, 31 (2009), pp. 672-676.	The work moves practice beyond "strength-only" acceptance by supplying evidence and tools to tie durability testing (or its rapid substitutes) to design and specification, especially important when using blended cements/SCMs.
[J13]	**Shamsad Ahmad**, Abul Kalam Azad, and Mohammed Abdul Hameed "*A Study of Self-Compacting Concrete made with Marginal Aggregates*", **Arabian Journal for Science and Engineering (Saudi Arabia),** Vol. 33, No.2B, October (2008), pp. 437-442.	The study moves SCC mix design from "ideal aggregates only" to a data-driven, locally adaptable approach expanding sustainable use of local/marginal resources, cutting haul distances and cost, and maintaining fresh stability and in-service durability.
[J12]	**Shamsad Ahmad**, Walid A. Al-Kutti, Omar S. Baghabra Al-Amoudi, and Mohammad Maslehuddin, "*Compliance Criteria for Quality Concrete*", **Construction and Building Materials Journal (UK),** Vol. 22, No. 6, June 2008, pp. 1029-1036.	The paper's scientific contribution includes the development of a unified performance-based framework to define measurable compliance criteria for concrete quality that integrate strength, variability, and durability indices. The proposed framework for the quality compliance criteria provides a practical, statistically rigorous basis for contractual acceptance of "quality concrete," aligning day-to-day quality control with long-term durability and performance.
[J11]	Omar S. Baghabra Al-Amoudi, Walid A. Al-Kutti, **Shamsad Ahmad**, and Mohammad Maslehuddin, "*Towards Standard Criteria for Evaluation of Quality of Concrete in the Eastern Province of Saudi Arabia* ", **Journal of Building Technology <u>in Arabic</u> (Saudi Arabia)**, Vol. 14, March 2008, pp. 20-27.	The work localizes modern, performance-based concrete quality assessment for the Eastern Province, supplying measurable criteria, statistical tools, and durability surrogates that can elevate practice, reduce premature deterioration, and align procurement with service-life and sustainability goals.
[J10]	**Shamsad Ahmad,** Walid A. Al-Kutti, Omar S. Baghabra Al-Amoudi, and Mohammad Maslehuddin, "*Correlations between Depth of Water Penetration, Chloride Permeability and Coefficient of Chloride Diffusion in Plain, Silica Fume and Fly Ash Cement Concretes* ", **Journal of Testing and Evaluation (American Society for Testing and Materials, USA),** Vol. 36, No. 2, 2008, pp. 136-139.	The paper operationalizes durability testing by turning simple and rapid measurements (water penetration, rapid chloride permeability) into usable estimates of chloride diffusion coefficients for different binder systems, directly supporting service-life prediction and specification of chloride-resistant concrete.
[J9]	**Shamsad Ahmad**, "*Optimum Concrete Mixture Design using Locally Available Ingredients*", **Arabian Journal for Science and Engineering (Saudi Arabia),** Vol. 32, No. 1B, April (2007), pp. 27-33.	The work advances a mix design approach from a generic recipe to a data-driven, locale-specific optimization, enabling regions to use what they have,

		more economically and sustainably without compromising with the structural performance.
[J8]	Abul K. Azad, **Shamsad Ahmad**, and Syed A. Azher, "*Residual Strength of Corrosion-Damaged Reinforced Concrete Beams"*, **ACI Materials Journal (American Concrete Institute, USA),** Vol. 104, No. 1, January-February (2007), pp. 40-47.	The study presented in this paper established a test database on RC beams with controlled corrosion, quantifying how steel mass loss, bond degradation, and cover cracking translate into losses of flexural strength. A mechanics-based model was proposed to estimate reduction in the flexural strength of RC beams due to loss of bond as a result of reinforcement corrosion. The calculated bond reduction factors were subsequently used to predict the actual residual moment capacity of the corrosion-damaged reinforced concrete beams.
[J7]	Abul Kalam Azad, Husain Jubran Al-Gahtani, and **Shamsad Ahmad**, "*Chloride Penetration into Silica Fume Concrete subject to Different Exposures*", **Arabian Journal for Science and Engineering (Saudi Arabia),** Vol. 31, No. 1C, June (2006), pp. 93-106.	The paper advances practice by providing exposure-specific, profile-derived chloride diffusion coefficient for silica-fume concrete, proving that binder choice and microclimate jointly control chloride ingress that are vital for reliable durability design of concrete in hot–arid/coastal settings.
[J6]	**Shamsad Ahmad**, "*Reinforcement Corrosion in Concrete Structures, its Monitoring and Service Life Prediction – A Review*, **Cement & Concrete Composites (U.K.),** Vol. 25/4-5, May - July 2003, pp. 459-471.	This paper widely cited review became a go-to reference that organized the corrosion mechanisms, monitoring, and service-life chain into a coherent, field-usable framework for RC durability assessment
[J5]	**Shamsad Ahmad** and B. Bhattacharjee, "*Empirical Modeling of Indicators of Chloride-Induced Rebar Corrosion*", **Journal of Structural Engineering (India)**, Vol. 27, No. 3, October (2000), pp. 195-207.	The paper's scientific contributions are summarized below: • Development of multi-factor, empirical models of corrosion indicators that can predict half-cell potential, concrete resistivity, corrosion rate, free chloride, and pH from three key variables: w/c ratio, cement content, and chloride content, capturing their simultaneous effects rather than one-factor-at-a-time trends. • The work adopted a designed experiment and used analysis of variance (ANOVA) to isolate main effects and interactions, then fits least-squares equations for each indicator providing transparent, reproducible models and guidance on their utility. In brief, the paper presents a methodical design of experiment and regression treatment of chloride-induced rebar corrosion indicators that set a template many later empirical/semi-empirical studies build on.
[J4]	**Shamsad Ahmad**, L.R. Basavaraja and B. Bhattacharjee, "*Design Procedures for Cathodic Protection Systems for RC Members*", **Indian Concrete Journal (India)**, Vol.74, No.4, April (2000), Special Issue on Corrosion of Steel in Concrete, pp.208-213.	The work provides one of the early, consolidated design procedures for CP on reinforced concrete, integrating measurement-based inputs with system selection and application, thereby improving accuracy and practicality for on-site corrosion control.
[J3]	**Shamsad Ahmad**, B. Bhattacharjee and Rajeev Wason, "*Experimental Service Life Prediction of*	The paper presents a robust methodology that can help in turning accelerated corrosion data into

	Rebar-Corroded Reinforced Concrete Structure", **ACI Materials Journal (American Concrete Institute, USA)**, Vol. 94, No. 4, July-August (1997), pp. 311-316.	quantitative service-life estimates**,** offering one of the early, coherent bridges from controlled electrochemical damage to structural performance and time-to-failure in chloride-affected RC.
[J2]	**Shamsad Ahmad** and B. Bhattacharjee, "*Assessment of Service Lives of Reinforced Concrete Structures subjected to Chloride-induced Rebar Corrosion*", **Journal of Structural Engineering (India)**, Vol.23, No.4, January (1997), pp.177-182.	The paper's value is its data-driven evaluation of commonly used service-life models under measured corrosion conditions**,** providing early, practical validation and limits of these tools for chloride-exposed RC structures.
[J1]	**Shamsad Ahmad** and B. Bhattacharjee, "*A Simple Arrangement and Procedure for In-situ Measurement of Corrosion Rate of Rebar Embedded in Concrete*", **Corrosion Science (UK)**, Vol. 37, No. 5, (1995), pp. 781-791.	The paper's scientific contributions include: field-deployable LPR setup, IR-drop compensation, current-distribution correction, accuracy in calculating Stern–Geary's constant, and practical protocol & scope) under the reported work made on-site corrosion-rate measurement more accurate, reproducible, and practical, helping engineers prioritize repairs and manage service life based on measured corrosion rate , not just potentials or visual condition.