PROFESSIONAL DETAILS

Fullname Radhwan HaJi Ali Alzeebaree

E-mail radhwan.alzeebaree@dpu.edu.krd

Phone 009647504562178

Gender male

Birth Date 1980-06-10

Address Iraq - Duhok, Akre

Nationality Iraq/Duhok/Akre

- Akre Technical Institute
- Surveying

LANGUAGE

- **Kurdish** (Native)
- **Arabic** (Proficient)
- **English** (Proficient)
- **Turkish** (Intermediate)

SPECIALTIES

Construction Materials Light-Weight Construction Concrete Technology Mix Design Eco-Friendly Construction Geopolymer Concrete Technology Nano-Materials Technology Mechanical and Durability Performance of Concrete Fiber Reinforced Polymer (FRP) Carbon Fiber-reinforced Polymer (CFRP) Basalt Fiber-reinforced Polymer (BFRP) Sulfuric Acid Attack Magnesium Sulfate Attack Seawater Attack Engineered Cementitious Composite (ECC) and Steel Fiber Reinforced Concrete (SFRC).

TEACHING MATERIAL

Microsoft Word Microsoft Powerpoint Microsoft Excel Engineering Programs Mix Design Statistic Analysis Non-Destructive Tests Auto-CAD Auto-Disc GPS and Surveying Machines Technology.

SOCIAL LINKS

Google Scholar Research Gate Academia LinkedIn Facebook Publons - Evaluating Academic Research ORCID - Connecting Research and Researchers

EDUCATION

Sep, 2018

Doctorate (Ph.D.)

Civil Engineering/Construction Materials

University of Gaziantep-Turkey

Jul, 2012

Master (MSc.)

Civil Engineering/Construction Materials

University of Gaziantep-Turkey

Jul, 2002

Bachelor (BSc.)

Civil Engineering/Irrigation and Drainage

University of Mosul-Iraq

TITLE

Sep, 2018

Lecturer

Dec, 2012

Assistant Lecturer

PROFESSIONAL EXPERIENCE

Mar, 2007 - Sep, 2009

Project Manager– full-time

Renas Company, Erbil IRAQ

Masif Salahadin Road

Responsibilities: 1. Observed the progress of the daily work, 2. Made sure the safety precautions are taken into consideration, 3. Kept records of construction materials (mini office work), 4. Helped in directing the workers, Coordinated with different site Engineers and, 5. Other duties per requirement such as estimation works. 6. Daily plane for Project, and Staff. 7. Weakly meeting with the Manager of Company.

Jul, 2002 - Aug, 2003

Project Manager (Site Engineer)

Rony Company

Iraq/Erbil

Responsibilities: 1. Observed the progress of the daily work, 2. Made sure the safety precautions are taken into consideration, 3. Kept records of construction materials (mini office work), 4. Helped in directing the workers, Coordinated with different site Engineers and, 5. Other duties per requirement such as estimation works.

SKILLS

Computer::

• Microsoft Windows applications (Word, Excel, Office, PowerPoint) – Advanced • Microsoft Office Document Imaging and Scanning - Advanced

AutoCAD::

• AutoCAD - Advanced • Autodesk – Advanced

Engineering Programs and Instruments:

. Level and leveling . Theodolite . GPS and its applications . GPS Differential . Total Station

Internet: Internet Technology

Mix Design and Concrete Technology: • Mix Design of Concrete • Fresh Properties of concrete • Mechanical Properties of Concrete • Durability of Concrete and structures • Utilization of new materials in concrete • Lightweight-High strength-High Ductility Structures • Green Concrete and Structures • Self-Compacting Concrete • Steel-Fiber-Reinforced-Concrete • Fiber-Reinforced-Polymer Technology • Geopolymer Concrete Technology

Non-Destructive Tests:

. SCHMIDT REBOUND HAMMER TEST . PENETRATION RESISTANCE OR WINDSOR PROBE TEST . ULTRASONIC TESTING

INTEREST

Concrete Technology:

Utilization of new materials, waste materials, Composite materials, strain hardening composite in concrete production. In addition to investigating new concrete technology that satisfies the demands of future construction technology.

Research Interests:

My current research center’s around the mechanical and durability properties of FRP confined/unconfined Geopolymer Concretes, Engineered Cementitious Composite exposed to chemical attack. In addition to study of Microstructure analysis of Materials and performance of Nanotechnology Materials.

INTERESTS AND ACTIVITIES: Football & Reading.

MEMBERSHIP

Mar, 2018 - Current

Researcher

Radhwan Alzeebaree

American Society of Civil Engineers (ASCE)

Jul, 2004 - Current

Advisor Engineer

Radhwan Alzeebaree

Kurdistan Engineers Union, Duhok

PUBLICATION JOURNAL

May, 2021

Using of recycled clay brick/fine soil to produce sodium hydroxide alkali activated mortars

Advances in Structural Engineering

In the study, the recycled clay brick powder/fine soil powder-based sodium hydroxide alkali-activated mortar (AAM) specimens were prepared by mixing different percentages (100/0, 80/20, 60/40, 40/60, 20/80, and 100/0, respectively) to investigate the mechanical and durability performance of sustainable AAM specimens for the possible utilization instead of OPC. The constant ratio of glass

powder was used in the production of AAM to increase the alkalinity and improve the mechanical properties of alkali-activated mortar. Also, the influences of sodium hydroxide molarity concentrations (8, 10, 12, 14, and 16?M) on the performance of AAM specimens were studied. The compressive strength, water absorption, and water sorptivity tests were conducted on the AAM specimens and the relationships between the investigated parameters were analyzed. The obtained results revealed that the fine soil powder replacement with clay brick powder improved the compressive strength, and reduced water absorption and water sorptivity up to 80% replacement ratios, and superior mechanical and durability performance was obtained in the 80% fine soil powder-based AAM specimens. For the higher fine soil powder replacement ratio (100%), the performances of the AAM specimens were found to be adversely affected. Besides, the concentration of NaOH solution significantly influenced the material performances of the fine soil powder-based AAMs and 12?M NaOH concentration performed superior mechanical and durability performance. The strength enhancement of the AAMs was found to be significant after 90?days of the ambient curing period.

Apr, 2021

The Effects of Recycled Tire Rubbers and Steel Fibers on the Performance of Self-compacting Alkali Activated Concrete

Periodica Polytechnica Civil Engineering

In this study, the effects of recycled tire rubbers (RTR) and steel fiber (SF) on the fresh and hardened state properties of the self-compacted alkali activated concrete (SCAAC) were investigated. The ground granulated blast furnace slag, 1% hooked-end SF, and two types of RTR were utilized. The crumb rubbers (CR) and tire rubber chips (TCR) were used as a substation to natural aggregates at substation levels of 10% and 15%. The fresh state performances were evaluated by T50 value, slump flow, V-funnel, and L-Box tests, while mechanical performances were assessed through compressive, flexural, and splitting tensile strength tests. Also, detailed crack and microstructural analyses were conducted. The RTR adversely affected the fresh state properties, which reduced more with SF inclusions. Among the RTR, the TR specimens exhibited lower fresh state performance than the CR specimens. Similar mechanical strengths were obtained on the TR and CR specimens under the same replacement ratios. However, TR specimens exhibited higher deformation capacities than the CR specimens, when SF was utilized. The SCAAC specimens with 1% SF and 15% RTR showed more and wider flexural cracks, higher mechanical strength, and deformation capacity, which can be utilized in structural applications, particularly in high seismic zones.

Dec, 2019

Performance of FRP confined and unconfined engineered cementitious composite exposed to seawater

Journal of Composite Materials (Issue: 28-30) (Volume: 53)

Conventional concrete suffers from brittle failures under mechanical behaviour, and lack of ductility results in the loss of human life and property in earthquake zones. Therefore, the degree of ductility becomes significant in seismic regions. This paper investigates the influence of poly-vinyl alcohol fibers, basalt fiber-reinforced polymer (BFRP) and carbon fiber-reinforced polymer (CFRP) fabrics on the ductility and mechanical performance of low (LCFA) and high (HCFA) calcium fly ash-based engineered cementitious composite concrete. The study also focuses on the mechanical behaviour of the CFRP and BFRP materials using different matrix types exposed to 3.5% seawater environment. Cyclic loading and scanning electron microscopy observations were also performed to see the effect of chloride attack on mechanical performance and ductility of the specimens. In addition, utilization of CFRP and BFRP fabrics …

Nov, 2019

Mechanical performance of FRP-confined geopolymer concrete under seawater attack

Advances in Structural Engineering

In the study, mechanical properties and durability performance of confined/unconfined geopolymer concrete and ordinary concrete specimens were investigated under ambient and seawater environments. Some of the specimens were confined by carbon fiber and basalt fiber–reinforced polymer fabric materials with one layer and three layers under chloride and ambient environments to observe mechanical strength contribution and durability performances of these hybrid types of materials. These fiber-reinforced polymer fabric materials were also evaluated in terms of retrofit purposes especially in the marine structures. In addition, microstructural evaluation is also conducted using scanning electron microscope on geopolymer concrete and ordinary concrete specimens to observe the amount of deterioration in microscale due to the chloride attacks. Results indicated that confined specimens exhibited enhanced …

May, 2019

Mechanical properties and durability of unconfined and confined geopolymer concrete with fiber reinforced polymers exposed to sulfuric acid

Construction and Building Materials (Volume: 215)

This study reports the mechanical properties and durability of unconfined/confined sustainable geopolymer concrete (GPC) exposed to sulfuric acid attack under static and cyclic loadings. A low calcium (Class F) fly ash incorporating nano-silica was activated by a combination of sodium silicate and sodium hydroxide solutions to make the GPC. Unconfined/confined ordinary Portland cement concrete (OPCC) counterparts were also made for comparison purposes. The confined GPC/OPCC specimens were wrapped by one/three layers

of basalt/carbon fiber-reinforced polymers (BFRP/CFRP). Effects of type and number of wrapping layers, along with wrapping and testing ages on the mechanical properties and durability of confined GPC/OPCC were investigated. In addition, microstructure of the unconfined/confined GPC specimens was compared with that of the unconfined OPCC counterparts. The results showed …

Mar, 2019

Development of fly ash/slag based self-compacting geopolymer concrete using nano-silica and steel fiber

Construction and Building Materials (Volume: 211)

This study investigates the simultaneous effect of nano-silica and steel fiber on the fresh and hardened state performance of self-compacting geopolymer concretes (SCGC). For this purpose, self-compacting geopolymer concretes without and with nano-silica (0, 1% and 2%), and without and with steel fiber (0, 0.5% and 1%) were produced. Hooked-end steel fibers were used with a length of 30?mm and an aspect ratio of 40. Self-compacting geopolymer mixes were produced using 50% fly ash (FA) and 50% ground granulated blast furnace slag (GGBFS) with a constant alkaline activator to binder ratio of 0.5. For the alkaline activator, sodium silicate solution (Na2SiO3) and sodium hydroxide solution (NaOH) were utilized with a ratio (Na2SiO3/NaOH) of 2.5. Fresh state experiments were carried out via slump flow, L-Box, and V-funnel tests, while hardened state experiments were conducted using compressive …

Feb, 2019

Mechanical and durability performance of FRP confined and unconfined strain hardening cementitious composites exposed to sulfate attack

Construction and Building Materials (Volume: 207)

In this study, the performance of Fiber Reinforced Polymer (FRP) confined and unconfined Strain Hardening Cementitious Composite (SHCC) specimens exposed to sulfate attack under static and cyclic loading were investigated. Two types of FRP fabrics (Basalt (BFRP) and Carbon (CFRP)) and two types of fly ash (Low calcium (LCFA) and high calcium (HCFA)) were studied. In addition, FRP fabrics as a rehabilitation material was also investigated for the sulfate deteriorated specimens. LCFA-SHCC specimens showed superior performance than HCFA-SHCC specimens in the sulfate environment. In addition, confined specimens with FRP fabrics significantly improved compressive strength, ductility, and durability of the specimens.

Aug, 2018

Performance of FRP confined and unconfined geopolymer concrete exposed to sulfate attacks

Steel and Composite Structures (Issue: 2) (Volume: 29)

In this study, the effects of magnesium sulfate on the mechanical performance and the durability of confined and unconfined geopolymer concrete (GPC) specimens were investigated. The carbon and basalt fiber reinforced polymer (FRP) fabrics with 1-layer and 3-layers were used to evaluate the performances of the specimens under static and cyclic loading in the ambient and magnesium sulfate environments. In addition, the use of FRP materials as a rehabilitation technique was also studied. For the geopolymerization process of GPC specimens, the alkaline activator has selected a mixture of sodium silicate solution (Na2SiO3) and sodium hydroxide solution (NaOH) with a ratio (Na2SiO3/NaOH) of 2.5. In addition to GPC specimens, an ordinary concrete (NC) specimens were also produced as a reference specimens and some of the GPC and NC specimens were immersed in 5% magnesium sulfate solutions. The mechanical performance and the durability of the specimens were evaluated by visual appearance, weight change, static and cyclic loading, and failure modes of the specimens under magnesium sulfate and ambient environments. In addition, the microscopic changes of the specimens due to sulfate attack were also assessed by scanning electron microscopy (SEM) to understand the macroscale behavior of the specimens. Results indicated that geopolymer specimens produced with nano-silica and fly ash showed superior performance than the NC specimens in the sulfate environment. In addition, confined specimens with FRP fabrics significantly improved the compressive strength, ductility and durability resistance of the ...

Aug, 2018

Mechanical and durability properties of fly ash and slag based geopolymer concrete

Advances in Concrete Construction (Volume: 4)

In this paper, mechanical and short-term durability properties of fly ash and slag based geopolymer concretes (FAGPC-SGPC) were investigated. The alkaline solution was prepared with a mixture of sodium silicate solution (Na2SiO3) and sodium hydroxide solution (NaOH) for geopolymer concretes. Ordinary Portland Cement (OPC) concrete was also produced for comparison. Main objective of the study was to examine the usability of geopolymer concretes instead of the ordinary Portland cement concrete for structural use. In addition to this, this study was aimed to make a contribution to standardization process of the geopolymer concretes in the construction industry. For this purpose; SGPC, FAGPC and OPC specimens were exposed to sulfuric acid (H2SO4), magnesium sulfate (MgSO4) and sea water (NaCl) solutions with concentrations of 5%, 5% and 3.5%, respectively. Visual inspection and weight change of the specimens were evaluated in terms of durability aspects. For the mechanical aspects; compression, splitting tensile and flexural strength tests were conducted before and after the chemical attacks to investigate the residual mechanical strengths of geopolymer concretes under chemical attacks. Results indicated that SGPC (100% slag) is stronger and durable than the FAGPC due to more stable and strong cross-linked aluminasilicate polymer structure. In addition, FAGPC specimens (100% fly ash) showed better durability resistance than the OPC specimens. However, FAGPC specimens (100% fly ash) demonstrated lower

mechanical performance as compared to OPC specimens due to low reactivity of fly ash particles, low

Apr, 2018

Effects of sulphuric acid on mechanical and durability properties of ECC confined by FRP fabrics

Advances in Concrete Construction (Issue: 6) (Volume: 2)

In this study, the effects of sulphuric acid on the mechanical performance and the durability of Engineered Cementitious Composites (ECC) specimens were investigated. The carbon fiber reinforced polymer (CFRP) and basalt fiber reinforced polymer (BFRP) fabrics were used to evaluate the performances of the confined and unconfined ECC specimens under static and cyclic loading in the acidic environment. In addition, the use of CFRP and BFRP fabrics as a rehabilitation technique was also studied for the specimens exposed to the sulphuric acid environment. The polyvinyl alcohol (PVA) fiber with a fraction of 2% was used in the research. Two different PVA-ECC concretes were produced using low lime fly ash (LCFA) and high lime fly ash (HCFA) with the fly ash-to-OPC ratio of 1.2. Unwrapped PVA-ECC specimens were also produced as a reference concrete and all concrete specimens were continuously immersed in 5% sulphuric acid solution (H2SO4). The mechanical performance and the durability of specimens were evaluated by means of the visual inspection, weight change, static and cyclic loading, and failure mode. In addition, microscopic changes of the PVA-ECC specimens due to sulphuric acid attack were also assessed using scanning electron microscopy (SEM) to understand the macroscale behavior of the specimens. Results indicated that PVA-ECC specimens produced with low lime fly ash (LCFA) showed superior performance than the specimens produced with high lime fly ash (HCFA) in the acidic environment. In addition, confinement of ECC specimens with BFRP and CFRP fabrics significantly improved compressive

Apr, 2018

Effect of nano-silica on the chemical durability and mechanical performance of fly ash based geopolymer concrete

Ceramics International (Issue: 11) (Volume: 44)

In this study, the effect of nano silica on the short term severe durability performance of fly ash based geopolymer concrete (GPC) specimens was investigated. Four types of GPC were produced with two types of low calcium fly ashes (FAI and FAII) with and without nano silica, and ordinary Portland cement concrete (OPC) concrete was also cast for reference. For the geopolymerization process, the alkaline activator has selected a mixture of sodium silicate solution (Na2SiO3) and sodium hydroxide solution (NaOH) with a ratio (Na2SiO3/ NaOH) of 2.5. Main objectives of the study were to investigate the effect of usability or replaceability of nano silica-based low calcium fly ash based geopolymer concretes instead of OPC concrete in structural applications and make a contribution to standardization process of the fly ash based geopolymer

concrete. To achieve the goals, four types of geopolymer and OPC concretes

Jan, 2014

Enhancement of shrinkage behavior of lightweight aggregate concretes by shrinkage reducing admixture and fiber reinforcement

Construction and Building Materials (Volume: Volume 54, 15 March 2014, Pages 91-98)

This paper presents the results obtained from an experimental study conducted to investigate the effect of shrinkage reducing admixture (SRA) and steel fiber addition on the performance properties of lightweight aggregate concrete (LWAC). Total of seven LWAC mixes with SRA or steel fibers were produced at the same water-cement ratio using cold-bonded fly ash coarse aggregates. The percentage of steel fiber volume fractions used in the mixes was 0.25, 0.75 and 1.25. The amount of SRA used in the mixes was 0.75%, 1.5% and 3 % by weight of cement. Ring type specimens were used for the restrained shrinkage cracking test. At the same time, free shrinkage and weight loss of LWACs were measured. Moreover, the compressive and split tensile strength tests were undertaken. The results indicated that the use of steel fibers has little effect on compressive strength but it improves the split tensile strength. The addition of SRA decreases compressive strength without affecting tensile strength. Moreover, the utilization of steel fiber or SRA extends the cracking time and reduces the crack width of LWAC resulting in finer cracks associated with lower free shrinkage.

Dec, 2012

Effect of silica fume and steel fiber on the mechanical properties of the concretes produced with cold bonded fly ash aggregates

Construction and Building Materials (Volume: 40)

This paper reports an experimental study on the mechanical properties of steel fiber incorporated plain and silica fume (SF) concretes produced with cold bonded artificial fly ash aggregates (AFAs). Two concrete series with water-to-binder (w/b) ratios of 0.35 and 0.55 were designed. SF incorporation was achieved by 10% replacement of the weight of cement by silica fume. Two types of hooked-end steel fibers with length/aspect ratios of 60/80 and 30/40 were utilized. AFA, produced from cold bonding pelletization of 90% class F fly ash and 10% Portland cement, was used as coarse aggregate in all of the concrete mixtures. The mechanical properties investigated were compressive strength, modulus of rupture, and bonding strength between rebar and concrete. The tests were carried out at the end of 28 day water curing. Analyses of variance of the experimental results were performed and the contributions of the significant factors on the mechanical characteristics of the concretes were determined for statistical evaluations. Moreover, correlation of the experimental data was carried out to monitor the interaction between mechanical properties and bonding strength of the concretes. The results demonstrated that incorporation of SF and utilization of different types of steel fiber reinforcements significantly affected the mechanical properties of the concretes regardless the w/b ratio.

CONFERENCE

Oct, 2017 - Oct, 2017

SEA WATER RESISTANCE OF FLY ASH- AND SLAG-BASED GEOPOLYMER CONCRETE

Turkey, Gaziantep University As Presenter

2nd International Energy & Engineering ConferenceAt: Gaziantep University, Gaziantep, Turkey

Oct, 2017 - Oct, 2017

SHORT TERM DURABILITY OF NANO-SILICA-MODIFIED FLY ASH-BASED GEO-POLYMER CONCRETE EXPOSED TO SEA WATER

Turkey, Gaziantep University As Presenter

2nd International Energy & Engineering ConferenceAt: Gaziantep University, Gaziantep, Turkey

WORKSHOP

Aug, 2014 - Aug, 2014

Learning Autodesk Program and GPS Differential Instrument

Akre Technical Institute As Guest

Workshop on Learning Autodesk Program and GPS Differential Instrument

Dec, 2013 - Jan, 2014

Learning English Language and Studding Technology

Eastern Mediterranean University (EMU), Cyprus As Guest

Workshop through 15 days to the university of (Eastern Mediterranean University (EMU), Cyprus).

Aug, 2013 - Aug, 2013

Learning Total Station Instrument.

Akre Technical Institute As Guest

Workshop on learning Total station Instrument.

Jul, 2012 - Jul, 2012

Learning English Grammars, Reading, Speaking and writing.

Akre Technical Institute As Guest

Workshop on learning English Grammars, Speaking, and Writting

Aug, 2005 - Sep, 2005

Learning AutoCAD program and Engineering Programs.

Akre Technical Institute As Guest

Workshop on learning Autocad program and engineering programs

Aug, 2004 - Aug, 2004

Learning Microsoft Office and AutoCAD program.

Akre Technical Institute As Guest

Workshop to learn Office programs and Autocad Program.