

## Asst. Prof. Abdullah Huzeyfe AKCA

### Personal Information

**Office Phone:** [+90 212 383 5243](tel:+902123835243)

**Email:** [aakca@yildiz.edu.tr](mailto:aakca@yildiz.edu.tr)

**Other Email:** [abdullah.akca@boun.edu.tr](mailto:abdullah.akca@boun.edu.tr)

**Web:** <https://avesis.yildiz.edu.tr/aakca>

### International Researcher IDs

ORCID: 0000-0003-1151-5520

Yoksis Researcher ID: 184226

### Education Information

Post Doctorate, Columbia University in the City of New York, The Fu Foundation School Of Engineering And Applied Science, The Department of Civil Engineering and Engineering Mechanics, United States Of America 2019 - 2020

Doctorate, Bogazici University, Faculty Of Engineering, İnşaat Mühendisliği, Turkey 2012 - 2017

Postgraduate, Bogazici University, Faculty Of Engineering, İnşaat Mühendisliği, Turkey 2009 - 2012

Undergraduate, Yildiz Technical University, Faculty Of Civil Engineering, İnşaat Mühendisliği, Turkey 2007 - 2009

### Research Areas

Materials in Civil Engineering, Material Mechanics

### Academic Titles / Tasks

Assistant Professor, Yildiz Technical University, Faculty Of Civil Engineering, Civil Engineering Department, 2022 - Continues

Research Assistant PhD, Yildiz Technical University, Faculty Of Civil Engineering, Civil Engineering Department, 2018 - 2022

Research Assistant, Bogazici University, Faculty Of Engineering, Department Of Civil Engineering, 2010 - 2018

### Academic and Administrative Experience

Deputy Head of Department, Yildiz Technical University, Faculty Of Civil Engineering, Civil Engineering Department, 2022 - Continues

Erasmus Program Department Coordinator, Yildiz Technical University, Faculty Of Civil Engineering, Civil Engineering Department, 2022 - Continues

### Courses

Introductory Computer Sciences, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020

Yapılarda Su Yalıtımı, Undergraduate, 2020 - 2021

Introduction to Civil Engineering, Undergraduate, 2021 - 2022, 2020 - 2021

Binalarda Isı Yalıtımı Tasarımı, Undergraduate, 2021 - 2022, 2020 - 2021

İstatistik, Undergraduate, 2018 - 2019

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Microstructural Examination of Black Seawater Mixed Sulfate-Resistant Cement Concrete**  
Aydoğan O. G., Akca A. H., Bilici S., Öztürk H., Dilber A. A., Özyurt N.  
JOURNAL OF MATERIALS IN CIVIL ENGINEERING, vol.36, no.1, pp.15962, 2024 (SCI-Expanded)
- II. **Carbon-negative cement manufacturing from seawater-derived magnesium feedstocks**  
Badjatya P., Akca A. H., Alvarez D. V. F., Chang B., Ma S., Pang X., Wang E., Van Hinsberg Q., Esposito D. V., Kawashima S.  
NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA. PROCEEDINGS, vol.119, no.34, pp.2114680119, 2022 (SCI-Expanded)
- III. **Evaluation of Mechanical Performance of Compacted Magnesium Hydroxide after Carbonation Curing**  
AKCA A. H., Ma S., Esposito D., Kawashima S.  
Journal of Materials in Civil Engineering, vol.34, no.5, 2022 (SCI-Expanded)
- IV. **Influence of aqueous carbonate species on hydration and carbonation of reactive MgO cement**  
Ma S., Akca A. H., Esposito D., Kawashima S.  
JOURNAL OF CO<sub>2</sub> UTILIZATION, vol.41, 2020 (SCI-Expanded)
- V. **Post-fire mechanical behavior and recovery of structural reinforced concrete beams**  
AKCA A. H., Ozyurt N.  
CONSTRUCTION AND BUILDING MATERIALS, vol.253, 2020 (SCI-Expanded)
- VI. **Fracture response of fiber-reinforced sodium carbonate activated slag mortars**  
Aktürk B., Akca A. H., Kızılkant A. B.  
Construction And Building Materials, vol.241, pp.1-13, 2020 (SCI-Expanded)
- VII. **Deterioration and recovery of FRC after high temperature exposure**  
Akca A. H., Ozyurt N.  
CEMENT & CONCRETE COMPOSITES, vol.93, pp.260-273, 2018 (SCI-Expanded)
- VIII. **Effects of re-curing on microstructure of concrete after high temperature exposure**  
Akca A. H., Ozyurt N.  
CONSTRUCTION AND BUILDING MATERIALS, vol.168, pp.431-441, 2018 (SCI-Expanded)
- IX. **Effects of re-curing on residual mechanical properties of concrete after high temperature exposure**  
Akca A. H., Ozyurt N.  
CONSTRUCTION AND BUILDING MATERIALS, vol.159, pp.540-552, 2018 (SCI-Expanded)
- X. **Mechanical properties and fracture behavior of basalt and glass fiber reinforced concrete: An experimental study**  
KIZILKANAT A. B., KABAY N., Akyuncu V., Chowdhury S., Akca A. H.  
CONSTRUCTION AND BUILDING MATERIALS, vol.100, pp.218-224, 2015 (SCI-Expanded)
- XI. **High performance concrete under elevated temperatures**  
Akca A. H., Zihnioglu N. O.  
CONSTRUCTION AND BUILDING MATERIALS, vol.44, pp.317-328, 2013 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Carbon-Negative Cement Manufacturing from Seawater-Derived Magnesium Feedstocks**  
Badjatya P., Akca A. H., Fraga Alvarez D., Chang B., Ma S., Pang X., Wang E., Esposito D., Kawashima S., Van Hinsberg Q.  
ChemRxiv, vol.1, pp.1-39, 2021 (Non Peer-Reviewed Journal)

- II. **Análisis de imagen sobre concreto desintegrado en la etapa de postcalentamiento**  
Akca A. H., Özyurt N.  
Revista ALCONPAT, vol.10, no.2, pp.219-229, 2020 (Peer-Reviewed Journal)
- III. **Mineral Katkılı Lifli Betonlarda Yüksek Sıcaklık Etkisiyle Oluşan Yüzey Çatlakları ve Dayanım Kayıpları**  
Akca A. H., Özyurt N.  
Hazır Beton Dergisi, vol.154, pp.65-71, 2019 (Conference Book)
- IV. **Effects of Post-fire curing on the properties of HPCC**  
Özyurt Zihnioğlu N., Akca A. H.  
Cementürk, vol.30, pp.56-63, 2013 (Non Peer-Reviewed Journal)

## **Refereed Congress / Symposium Publications in Proceedings**

- I. **Evaluation of 3D Printability of Concrete Incorporating Recycled Aggregate Powder and PCM**  
Akca A. H., Dinç Şengönül B., Ömür T., Üstündağ C. B., Kabay N., Çakır Ö., Yüzer N.  
14th International Congress on Advances in Civil Engineering (ACE2020-21), İstanbul, Turkey, 6 - 08 September 2021, pp.282-289
- II. **Microstructural and Compressive Strength Development of Portland Cement Paste Incorporating Magnesium Oxide after Concentrated Carbon Dioxide Curing**  
Akca A. H., Ma S., Kawashima S.  
14th International Congress on Advances in Civil Engineering (ACE2020-21), İstanbul, Turkey, 6 - 08 September 2021, pp.74-80
- III. **Performance of compacted Mg(OH)<sub>2</sub> after carbonation**  
Akca A. H., Ma S., Esposito D., Kawashima S.  
INTERNATIONAL CONFERENCE ON "CEMENT - BASED MATERIALS TAILORED FOR A SUSTAINABLE FUTURE", İstanbul, Turkey, 27 - 29 May 2021, pp.94-99
- IV. **Use of seawater as the mix water for concrete**  
Aydoğan O. G., Bilici S., Akca A. H., Balcı E., Özyurt N.  
INTERNATIONAL CONFERENCE ON "CEMENT - BASED MATERIALS TAILORED FOR A SUSTAINABLE FUTURE", İstanbul, Turkey, 27 - 29 May 2021, pp.311-318
- V. **Image Analysis on Disintegrated Concrete at the Post Heating Stage**  
AKCA A. H., ÖZYURT ZİHNİOĞLU N.  
3rd R.N. Raikar Memorial International Conference and Gettu-Kodur International Symposium on Advances in Science and Technology of Concrete, 14 - 15 December 2018
- VI. **Recovery of Reinforced Concrete Beams after ISO-834 Fire Exposure**  
AKCA A. H., ÖZYURT ZİHNİOĞLU N.  
13th international congress on advances in civil engineering, İzmir, Turkey, 12 September 2018, pp.500-508
- VII. **Mineral Katkılı Lifli Betonlarda Yüksek Sıcaklık Etkisiyle Oluşan Yüzey Çatlakları ve Dayanım Kayıpları**  
AKCA A. H., ÖZYURT ZİHNİOĞLU N.  
Beton 2017 Hazır Beton Kongresi, Turkey, 13 - 14 April 2017
- VIII. **Changes in Microstructure and Recovery of Concrete Incorporating Granulated Blast Furnace Slag after High Temperature Exposure**  
AKCA A. H., ÖZYURT ZİHNİOĞLU N.  
12th International Congress on Advances in Civil Engineering, İstanbul, Turkey, 21 - 23 September 2016
- IX. **Mechanical Behavior and Recovery of FRC after High Temperature Exposure**  
AKCA A. H., ÖZYURT ZİHNİOĞLU N.  
The 8th International Conference on Concrete under Severe Conditions Environment and Loading, Lecco, Italy, 12 - 14 September 2016, vol.711
- X. **Effects of elevated temperatures on the microstructure and residual strength of HPSCC**

AKCA A. H., ÖZYURT ZİHNİOĞLU N.

5th North American Conference on the Design and Use of Self-Consolidating Concrete, Chicago, United States Of America, 12 - 14 May 2013

**XI. Donatı Korozyonu İçin Verilen Sınır Değerlerin Yalın ve Çelik Lifli Betonlarda Çatlak Oluşumu Açısından Değerlendirilmesi**

NİŞ A., PEHLİVAN A. O., AKCA A. H., ÖZYURT ZİHNİOĞLU N., SÖYLEV T. A., ÖZTURAN T.

8th National Congress on Concrete, İzmir, Turkey, 5 - 07 October 2011

## Supported Projects

AKCA A. H., AYGÖRMEZ Y., KOÇ K., ŞAHİN O., Project Supported by Higher Education Institutions, Kahramanmaraş deprem verileriyle entegre yapay zeka hasar tahmin modeli geliştirilmesi, 2024 - Continues

AKCA A. H., ULUKAYA S., Project Supported by Higher Education Institutions, Karbonatlaşarak Sertleşmiş Magnezyum Esaslı Malzemenin Mekanik ve İç Yapı Özelliklerinin Sıcaklık İle Değişiminin Araştırılması, 2023 - Continues

AKCA A. H., AYGÖRMEZ Y., ŞAHİN O., KOÇ K., Project Supported by Higher Education Institutions, Kahramanmaraş Depremleri Sonrası Bölgedeki Enkazlardan Toplanan Örneklerden Elde Edilen Karot Numuneler ile Betonların Gerilme Şekil Değiştirme Davranışlarının Belirlenmesi, 2023 - 2024

ERDÖLEN A., YÜZER N., AKCA A. H., Türk S., Project Supported by Higher Education Institutions, Tarihi Yapıların Sağlamlaştırmasında Kullanılan Enjeksiyon Malzemesi Kırılma Direncinin Belirsizlikler Altında Elde Edilmesi, 2023 - 2024

Aygörmez Y., Akca A. H., Koç K., Şahin O., TUBITAK Project, Kahramanmaraş depremleri sonrası bölgedeki enkazlardan dayanım testleri için beton numuneleri ve donatılı numune toplanması hasarlı binalardan görüntü toplanması, 2023 - 2023

Akca A. H., Aydoğan O. G., Bilici S., Özyurt N., Project Supported by Higher Education Institutions, Sürdürülebilir Bir Gelecek İçin Deniz Suyu Kullanılarak Üretilmiş Sentetik Lifli Betonlar , 2018 - 2021

Akca A. H., Özyurt Zihnioğlu N., Project Supported by Higher Education Institutions, Yüksek sıcaklıklara maruz betonlarda kullanılan malzeme ve uygulanan yangın sonrası kürün iyileşme süreci üzerindeki etkilerinin incelenmesi, 2014 - 2016

Akca A. H., Özyurt Zihnioğlu N., Project Supported by Higher Education Institutions, Yangın dayanımı arttırılmış yüksek dayanımlı çimento esaslı malzeme tasarımı, 2011 - 2011

## Patent

Kawashima S., Esposito D. V., Ma S., Akca A. H., METHODS AND SYSTEMS FOR PROVIDING IMPROVED CEMENT INCORPORATING METAL OXIDES AND HYDROXIDES, Patent, CHAPTER C Chemistry; Metallurgy, The Invention Registration Number: US 20210188711 A1 , Standard Registration, 2021

## Scientific Refereeing

CONSTRUCTION AND BUILDING MATERIALS, Journal Indexed in SCI-E, December 2020

CONSTRUCTION AND BUILDING MATERIALS, Journal Indexed in SCI-E, July 2020

INTERNATIONAL JOURNAL OF CONCRETE STRUCTURES AND MATERIALS, Journal Indexed in SCI-E, April 2020

Construction And Building Materials, Journal Indexed in SCI-E, February 2020

Construction And Building Materials, Journal Indexed in SCI-E, November 2019

CEMENT AND CONCRETE RESEARCH, SCI Journal, March 2019

CONSTRUCTION AND BUILDING MATERIALS, Journal Indexed in SCI-E, January 2019

CONSTRUCTION AND BUILDING MATERIALS, Journal Indexed in SCI-E, December 2018

CONSTRUCTION AND BUILDING MATERIALS, Journal Indexed in SCI-E, October 2018

CONSTRUCTION AND BUILDING MATERIALS, Journal Indexed in SCI-E, February 2018

## **Metrics**

Publication: 26

Citation (WoS): 397

Citation (Scopus): 530

H-Index (WoS): 7

H-Index (Scopus): 7

## **Scholarships**

2219 Yurt Dışı Doktora Sonrası Araştırma Burs Programı, TÜBİTAK, 2018 - 2020

2211-E Doğrudan Yurt İçi Doktora Burs Programı, TÜBİTAK, 2012 - 2017

2228-A Son Sınıf Lisans Öğrencileri için Lisansüstü Burs Programı, TÜBİTAK, 2009 - 2011