

## Asst. Prof. SAFA NAYIR

### Personal Information

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### International Researcher IDs

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### Education Information

Doctorate, Karadeniz Technical University, Mühendislik Fakültesi, İnşaat Mühendisliği, Turkey 2015 - 2021

Postgraduate, Karadeniz Technical University, Mühendislik Fakültesi, İnşaat Mühendisliği, Turkey 2013 - 2015

Undergraduate, Karadeniz Technical University, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Turkey 2008 - 2013

### Research Areas

Civil Engineering, Building materials, Engineering and Technology

### Academic Titles / Tasks

Assistant Professor, Karadeniz Technical University, Mühendislik Fakültesi, İnşaat Mühendisliği, 2023 - Continues

Research Assistant, Karadeniz Technical University, Fen Bilimleri Enstitüsü, 2013 - 2021

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

- I. **Real-time detection of steel corrosion defects using semantic and instance segmentation models based on deep learning**  
Yılmaz Y., Nayır S., Erdoğan Ş.  
MATERIALS TODAY COMMUNICATIONS, vol.44, pp.2352-4928, 2025 (SCI-Expanded)
- II. **Investigation of ASR-induced crack development on mortars with mineral additives using image processing**  
Selim İ., Yılmaz Y., Nayır S.  
EUROPEAN JOURNAL OF ENVIRONMENTAL AND CIVIL ENGINEERING, vol.0, pp.1-22, 2024 (SCI-Expanded)
- III. **Experimental assessment of FRP repairing in concrete cylinders exposed high temperatures**  
Akbulut Y. E., Nayır S., Altunışık A. C., Kahya V., Sünnetçi M. O., Ersoy H.  
CASE STUDIES IN CONSTRUCTION MATERIALS, vol.21, 2024 (SCI-Expanded)
- IV. **Machine learning based prediction of compressive and flexural strength of recycled plastic waste aggregate concrete**  
Yılmaz Y., Nayır S.  
STRUCTURES, vol.69, 2024 (SCI-Expanded)
- V. **Investigation of Global Warming Potential of Concrete with Silica Fume and Blast Furnace Slag**

NAYIR S., BAHADIR Ü., TOĞAN V.

IRANIAN JOURNAL OF SCIENCE AND TECHNOLOGY-TRANSACTIONS OF CIVIL ENGINEERING, vol.48, no.4, pp.1965-1975, 2024 (SCI-Expanded)

- VI. **Automated Estimation of Exposed Temperature and Strength Changing Ratio for Fire-Damaged Concrete Using Deep Learning Method**  
Haciefendioğlu K., Akbulut Y. E., Nayır S., Başağa H. B., Altunışık A. C.  
EXPERIMENTAL TECHNIQUES, vol.46, no.5, pp.793-810, 2022 (SCI-Expanded)
- VII. **Automatic Estimation of Post-fire Compressive Strength Reduction of Masonry Structures Using Deep Convolutional Neural Network**  
HACIEFENDİOĞLU K., GENÇ A. F., NAYIR S., AYAS S., ALTUNIŞIK A. C.  
FIRE TECHNOLOGY, vol.58, no.5, pp.2779-2809, 2022 (SCI-Expanded)
- VIII. **Long-Term Efficiency of Silica Fume in Terms of Sulfate Resistance of Concrete Immersed in Sulfate Solutions and Seawater**  
Erdoğan Ş., Kurbetçi Ş., Nayır S.  
IRANIAN JOURNAL OF SCIENCE AND TECHNOLOGY-TRANSACTIONS OF CIVIL ENGINEERING, vol.46, no.4, pp.2739-2746, 2022 (SCI-Expanded)
- IX. **Pozzolanic properties of trachyte and rhyolite and their effects on alkali-silica reaction**  
Baki V. A., NAYIR S., ERDOĞDU Ş., USTABAŞ İ.  
ADVANCES IN CONCRETE CONSTRUCTION, vol.11, no.4, pp.299-306, 2021 (SCI-Expanded)
- X. **The Effects of Structural Lightweight Concrete on Energy Performance and Life Cycle Cost in Residential Buildings**  
NAYIR S., BAHADIR Ü., ERDOĞDU Ş., TOĞAN V.  
PERIODICA POLYTECHNICA-CIVIL ENGINEERING, vol.65, no.2, pp.500-509, 2021 (SCI-Expanded)
- XI. **Determination of the Pozzolanic Activities of Trachyte and Rhyolite and Comparison of the Test Methods Implemented**  
Baki V. A., Nayır S., Erdoğan Ş., Ustabaş İ.  
INTERNATIONAL JOURNAL OF CIVIL ENGINEERING, vol.18, pp.1053-1066, 2020 (SCI-Expanded)
- XII. **Effects of cement dosage and steel fiber ratio on the mechanical properties of reactive powder concrete**  
ERDOĞDU Ş., KANDİL U., NAYIR S.  
ADVANCES IN CONCRETE CONSTRUCTION, vol.8, no.2, pp.139-144, 2019 (SCI-Expanded)
- XIII. **Effectiveness of mineral additives in mitigating alkali-silica reaction in mortar**  
NAYIR S., ERDOĞDU Ş., KURBETÇİ Ş.  
COMPUTERS AND CONCRETE, vol.20, no.6, pp.705-710, 2017 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Determination of the efflorescence defects on concrete and plaster surfaces using a novel deep-learning model**  
Nayır S., Yılmaz Y.  
Journal of Structural Engineering & Applied Mechanics (Online), vol.7, no.2, pp.123-135, 2024 (Peer-Reviewed Journal)
- II. **Evaluation of structural lightweight concrete in terms of energy performance: A case study**  
Nayır S., Bahadır Ü., Erdoğan Ş., Toğan V.  
Pamukkale University Journal of Engineering Science, vol.27, no.6, pp.696-702, 2021 (ESCI)
- III. **Yüksek Fırın Cürüflü Betonların Bazı Mekanik Ve Durabilite Özellikleri**  
Erdoğan Ş., Kurbetçi Ş., Kandil U., Nayır S., Nas M.  
Hazır beton Dergisi, no.167, pp.65-71, 2021 (Non Peer-Reviewed Journal)
- IV. **Evaluation of The Dependency of The Compressive Strength of Concrete on The Core Drilling Direction Through Anova Test**

Erdođdu Ő., Nayır S., Kandil U., Kurbetci Ő., Nas M.

SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES, vol.38, no.4, pp.1879-1895, 2020 (ESCI)

V. **Ultrasonic Pulse Velocity and Compressive Strength Evaluation of Concrete Containing Fly Ash Exposed to High Temperatures**

ERDOĐDU Ő., KANDİL U., NAS M., KURBETCİ Ő., NAYIR S.

Nevşehir Bilim ve Teknoloji Dergisi, vol.6, pp.314-325, 2017 (Peer-Reviewed Journal)

## **Papers Published in Refereed Scientific Meetings**

- I. **Relationship Between Ultrasonic Pulse Velocity And Schmidt Rebound Number In High Temperature damaged Concrete**  
Nayır S.  
International Conference on Civil and Environmental Engineering (I2C2E - 2024), London, England, 7 - 08 November 2024, pp.33-38
- II. **Performance Analysis Of Corrosion Segmentation With U-Net-based Deep Learning Models**  
Yılmaz Y., Nayır S.  
10th INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES (ICENS), Sarajevo, Bosnia And Herzegovina, 02 October 2024 - 04 January 2025, pp.15
- III. **Investigation effect of neoprene capping material on strength of concrete cylinders**  
Nayır S.  
3rd International Civil Engineering and Architecture Congress, Trabzon, Turkey, 12 - 14 October 2023, vol.1, pp.708-715
- IV. **Effect of Different Concrete Types on Building Heating and Cooling Loads**  
Nayır S., Bahadır Ü., Erdođdu Ő., Tođan V.  
4th International Symposium of Engineering Application on Civil Engineering and Earth Sciences, Karabük, Turkey, 31 May - 02 June 2023, pp.247-256
- V. **Investigation of Structural Lightweight Concrete in terms of Energy Efficiency in Residential Buildings**  
Nayır S., Bahadır Ü., Erdođdu Ő., Tođan V.  
14th INTERNATIONAL CONGRESS ON ADVANCES IN CIVIL ENGINEERING (ACE 2020-21), İstanbul, Turkey, 6 - 08 September 2021, pp.247-254
- VI. **High Temperature Effects on Concretes Containing Silica Fume**  
ERDOĐDU Ő., KANDİL U., NAYIR S.  
10. International Concrete Congress, Bursa, Turkey, 2 - 04 May 2019, pp.541-550
- VII. **Evaluation of Heat of Hydration of Mortar Containing Ground Trachyte and Rhyolite**  
ERDOĐDU Ő., USTABAŐ İ., BAKI V. A., NAYIR S., KANDİL U.  
International Civil Engineering and Architecture, Trabzon, Turkey, 17 - 20 April 2019, vol.1, pp.2387-2393
- VIII. **Investigation on Strength and Durability Properties of Concrete Containing Zeolite**  
NAS M., KURBETCİ Ő., NAYIR S.  
13th International Congress on Advances in Civil Engineering, İzmir, Turkey, 12 - 14 September 2018
- IX. **Evaluation of the Compressive Strength of Concrete by means of Cores Taken from Different Casting Direction**  
ERDOĐDU Ő., KURBETCİ Ő., KANDİL U., NAS M., NAYIR S.  
13th International Congress on Advances in Civil Engineering, İzmir, Turkey, 12 - 14 September 2018, pp.1-10
- X. **Effects of Different Curing Conditions on Some Mechanical and Durability Properties of Concretes Containing Silica Fume**  
ERDOĐDU Ő., KURBETCİ Ő., KANDİL U., NAYIR S., NAS M.  
13th International Congress on Advances in Civil Engineering, İzmir, Turkey, 12 - 14 September 2018, pp.1-9
- XI. **Ultrasonic Pulse Velocity Evaluation Of Concrete Containing Silica Fume Exposed To High Temperatures**

- ERDOĞDU Ş., KURBETCİ Ş., NAS M., KANDİL U., NAYIR S.  
3. International Conference on Civil and Environmental Engineering, İzmir, Turkey, 24 - 27 April 2018, pp.108
- XII. **Investigation Of Some Mechanical And Durability Properties Of Fly Ash Concrete Subjected To Different Curing Conditions**  
ERDOĞDU Ş., KURBETCİ Ş., NAYIR S., KANDİL U., NAS M.  
3. International Conference on Civil and Environmental Engineering, İzmir, Turkey, 24 - 27 April 2018, pp.107
- XIII. **Uçucu Kül ve Polipropilen Lifli Kireç Harçlarının Çimento Takviyesi ile Mekanik Özelliklerinin İyileştirilmesi**  
ERDOĞDU Ş., NAS M., NAYIR S., KANDİL U.  
Uluslararası Katılımlı 6. Tarihi Yapıların Korunması ve Güçlendirilmesi Sempozyumu, Trabzon, Turkey, 2 - 04 November 2017, pp.247-256
- XIV. **Çimento-Katkı Uyumu Açısından Silis Dumanı ve Süperakışkanlaştırıcı Katkıların Bileşik Etkisi**  
ERDOĞDU Ş., KURBETCİ Ş., KANDİL U., NAS M., NAYIR S.  
Uluslararası Yapılarda Kimyasal Katkılar 5. Sempozyumu ve Sergisi, Ankara, Turkey, 19 - 20 October 2017, pp.19-32
- XV. **Effects of Mineral Admixtures on the Alkali-Silica Reaction of a River Aggregate**  
ERDOĞDU Ş., NAYIR S., KANDİL U.  
ICOCEE CAPPADOCIA 2017, Nevşehir, Turkey, 8 - 10 May 2017, pp.3090-3100
- XVI. **Ultrasonic Pulse Velocity and Compressive Strength Evaluation of Concrete Containing Fly Ash Exposed to High Temperatures**  
ERDOĞDU Ş., KANDİL U., NAS M., KURBETCİ Ş., NAYIR S.  
ICOCEE CAPPADOCIA 2017, Nevşehir, Turkey, 8 - 10 May 2017, pp.3075-3089
- XVII. **Yüksek Fırın Cürüflü Betonların Bazı Mekanik ve Durabilite Özellikleri**  
ERDOĞDU Ş., KURBETCİ Ş., KANDİL U., NAYIR S., NAS M.  
Beton 2017, İstanbul, Turkey, 13 - 14 April 2017, pp.355-365
- XVIII. **Effects of Binary and Ternary Blends of Silica Fume and Metakaolin on the Mitigation of Alkali-Silica Reaction in Concrete**  
ERDOĞDU Ş., NAYIR S., NAS M., KANDİL U.  
12. International Congress on Advances in Civil Engineering, İstanbul, Turkey, 21 - 23 September 2016, pp.1-7
- XIX. **Uçucu Kül ve Polipropilen Lif İçeren Kireç Harçlarının Tarihi Yapıların Güçlendirilmesi Açısından Değerlendirilmesi**  
ERDOĞDU Ş., KANDİL U., NAYIR S., NAS M.  
5. Tarihi Eserlerin Güçlendirilmesi ve Geleceğe Güvenle Devredilmesi Sempozyumu, Erzurum, Turkey, 1 - 03 October 2015, pp.375-384
- XX. **Farklı oranlarda uçucu kül ikame edilerek üretilen betonların klor geçirimsizliklerinin belirlenmesi**  
ERDOĞDU Ş., Kandil U., Nayir S.  
9. Ulusal Beton Kongresi, Antalya, Turkey, 16 - 18 April 2015, pp.59-69

## Peer Reviews in Scientific Publications

JOURNAL OF BUILDING ENGINEERING, Journal Indexed in SCI-E, January 2025

JOURNAL OF BUILDING ENGINEERING, Journal Indexed in SCI-E, July 2024

Kahramanmaraş Sütcü İmam Üniversitesi Fen ve Mühendislik Dergisi, National Scientific Refreed Journal, June 2024

ADVANCES IN CIVIL ENGINEERING, Journal Indexed in SCI-E, May 2024

Karadeniz Fen Bilimleri Dergisi, National Scientific Refreed Journal, April 2024

ASIAN JOURNAL OF CIVIL ENGINEERING, Other Indexed Journal, August 2023

IRANIAN JOURNAL OF SCIENCE AND TECHNOLOGY - TRANSACTIONS OF CIVIL ENGINEERING, Journal Indexed in SCI-E, July 2023

Journal of Structural Engineering & Applied Mechanics (Online), National Scientific Refreed Journal, June 2023

Journal of Structural Engineering & Applied Mechanics (Online), National Scientific Refreed Journal, June 2023

Journal of Structural Engineering & Applied Mechanics (Online), National Scientific Refreed Journal, May 2023  
Balıkesir Üniversitesi Fen Bilimleri Enstitüsü Dergisi, National Scientific Refreed Journal, May 2023  
ADVANCES IN CIVIL ENGINEERING, Journal Indexed in SCI-E, January 2021  
ADVANCES IN CIVIL ENGINEERING, Journal Indexed in SCI-E, May 2020

## **Metrics**

Publication: 38

Citation (WoS): 35

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H-Index (Scopus): 4