

## Res. Asst. PhD SEBAHAT ŞİMŞEK

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: AAP-7171-2020

ScopusID: 57204057660

Yoksis Researcher ID: 229167

### Education Information

Doctorate, Karadeniz Technical University, Turkey 2017 - 2024

Postgraduate, Karadeniz Technical University, -, İnşaat Mühendisliği, Turkey 2014 - 2017

Undergraduate, Karadeniz Technical University, Mühendislik Fakültesi, İnşaat Mühendisliği, Turkey 2009 - 2014

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Doctorate, OPTIMISATION-BASED DAMAGE ASSESSMENT OF LAMINATED COMPOSITE BEAMS USING VIBRATION DATA, Karadeniz Technical University, Fen Bilimleri Enstitüsü, -, 2024

Postgraduate, Çatlaklı elastik kirişlerin dinamik davranışlarının analitik, sayısal ve deneysel yöntemlerle incelenmesi, Karadeniz Technical University, İnşaat Mühendisliği, 2017

### Research Areas

Civil Engineering, Mechanical, Engineering and Technology

### Academic Titles / Tasks

Research Assistant, Karadeniz Technical University, -, İnşaat Mühendisliği, 2015 - Continues

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

1. Finite element static analysis of functionally graded sandwich beams with porous core resting on a two-parameter elastic foundation based on quasi-3D theory

Mohamed I., Kahya V., Şimşek S.

PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART C-JOURNAL OF MECHANICAL ENGINEERING SCIENCE, no.6, pp.2129-2149, 2025 (SCI-Expanded)

- II. **Computational modeling of functionally graded sandwich beams with porous core using an Ansys APDL-based approach**  
Mohamed I., ŞİMŞEK S., KAHYA V., Lanc D.  
MECHANICS BASED DESIGN OF STRUCTURES AND MACHINES, 2024 (SCI-Expanded)
- III. **Ritz-Type Quasi-3D Solution for Free Vibration and Buckling of Functionally Graded Sandwich Beams with Porous Core Resting on a Two-Parameter Elastic Foundation**  
Mohamed I., Kahya V., Şimşek S.  
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, 2024 (SCI-Expanded)
- IV. **A New Higher-Order Finite Element Model for Free Vibration and Buckling of Functionally Graded Sandwich Beams with Porous Core Resting on a Two-Parameter Elastic Foundation Using Quasi-3D Theory**  
Mohamed I., Kahya V., Şimşek S.  
IRANIAN JOURNAL OF SCIENCE AND TECHNOLOGY - TRANSACTIONS OF CIVIL ENGINEERING, vol.48, no.3, pp.1-26, 2024 (SCI-Expanded)
- V. **Damage detection in anisotropic-laminated composite beams based on incomplete modal data and teaching-learning-based optimization**  
ŞİMŞEK S., KAHYA V., ADIYAMAN G., TOĞAN V.  
STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION, vol.65, no.11, 2022 (SCI-Expanded)
- VI. **Vibration-based damage detection in anisotropic laminated composite beams by a shear-deformable finite element and harmony search optimization**  
KAHYA V., ŞİMŞEK S., TOĞAN V.  
STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION, vol.65, no.6, 2022 (SCI-Expanded)
- VII. **Multiple damage detection in laminated composite beams using automated model update**  
Kahya V., Okur F. Y., Şimşek S., Altunışık A. C., Aslan M.  
STRUCTURES, vol.34, pp.1665-1683, 2021 (SCI-Expanded)
- VIII. **Damage Localization in Laminated Composite Beams with Multiple Edge Cracks Based on Vibration Measurements**  
KAHYA V., Karaca S., OKUR F. Y., ALTUNIŞIK A. C., ASLAN M.  
IRANIAN JOURNAL OF SCIENCE AND TECHNOLOGY-TRANSACTIONS OF CIVIL ENGINEERING, vol.45, no.1, pp.75-87, 2021 (SCI-Expanded)
- IX. **Free vibration analysis and damage localization in tapered beams with cracks using finite element method**  
KAHYA V., ŞİMŞEK S., Gunes S. D.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.36, no.2, pp.841-854, 2021 (SCI-Expanded)
- X. **Shear-deformable finite element for free vibrations of laminated composite beams with arbitrary lay-up**  
KAHYA V., Karaca S., VO T. P.  
STEEL AND COMPOSITE STRUCTURES, vol.33, no.4, pp.473-487, 2019 (SCI-Expanded)
- XI. **Free vibrations of laminated composite beams with multiple edge cracks: Numerical model and experimental validation**  
KAHYA V., Karaca S., OKUR F. Y., ALTUNIŞIK A. C., ASLAN M.  
INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.159, pp.30-42, 2019 (SCI-Expanded)
- XII. **Vibration-based damage detection in beam structures with multiple cracks: modal curvature vs. modal flexibility methods**  
ALTUNIŞIK A. C., OKUR F. Y., Karaca S., KAHYA V.  
NONDESTRUCTIVE TESTING AND EVALUATION, vol.34, no.1, pp.33-53, 2019 (SCI-Expanded)
- XIII. **Stress intensity factors for cracked elastic beams subjected to moving loads**

KAHYA V., Karaca S.

JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.33, no.4, pp.1309-1319, 2018 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Free vibration and buckling analysis of functionally graded sandwich beams resting on a two-parameter elastic foundation using a quasi-3D theory**  
Mohamed I., ŞİMŞEK S., KAHYA V.  
Sigma Journal of Engineering and Natural Sciences, vol.43, no.1, pp.47-61, 2025 (ESCI)
- II. **Automated damage assessment in truss structures via FE model updating and teaching-learning-based optimization**  
Özgan K., Şimşek S., Kahya V.  
Journal of Structural Engineering & Applied Mechanics (Online), vol.7, no.4, pp.219-237, 2024 (Peer-Reviewed Journal)
- III. **Free Vibration of Cracked Cantilever Beams: Analytical and Experimental Modelling**  
KAHYA V., ŞİMŞEK S.  
Fırat University Turkish Journal of Science & Technology, vol.13, no.1, pp.1-7, 2018 (Peer-Reviewed Journal)

## Papers Published in Refereed Scientific Meetings

- I. **Assessment of modal-based damage indicators in high-noise conditions: An application to laminated composite beams**  
Şimşek S., Kahya V., Toğan V., Altunışık A. C.  
International Civil Engineering and Architecture Conference, Trabzon, Turkey, 12 - 14 October 2023, pp.1126-1139
- II. **Damage detection of truss structures via a combined SAP2000 OAPI and teaching-learning-based optimization**  
Sepil L. D., Özgan K., Şimşek S., Kahya V.  
International Civil Engineering and Architecture Congress, Trabzon, Turkey, 12 - 14 October 2023, pp.1283-1298
- III. **Armoni Arama Algoritması Kullanılarak Tabakalı Kompozit Kirişte Frekans Değişimlerine Dayalı Hasar Tespiti**  
KAHYA V., ŞİMŞEK S.  
22. ULUSAL MEKANİK KONGRESİ 06 - 10 Eylül 2021, Çukurova Üniversitesi, Adana, Turkey, 6 - 10 September 2021
- IV. **Free Vibration Analysis of Layered Composite Beams with Delamination Damage**  
KAHYA V., ŞİMŞEK S.  
II. International Conference on Innovative Engineering Applications (CIEA' 2021), 20-22 May 2021, Muş, Turkey, Muş, Turkey, 20 - 22 May 2021
- V. **Delaminasyon Hasarı Bulunan Tabakalı Kompozit Kirişlerin Serbest Titreşim Analizi**  
KAHYA V., ŞİMŞEK S.  
II. International Conference on Innovative Engineering Applications (CIEA' 2021), 20-22 May 2021, Muş, Turkey, Muş, Turkey, 20 - 22 May 2021
- VI. **Damage localization in laminated composite beams using modal data**  
KAHYA V., ŞİMŞEK S., ALTUNIŞIK A. C., OKUR F. Y., ASLAN M.  
IES'20 International Engineering Symposium, Engineering Applications in Industry (Virtual), İzmir, Turkey, 05 December 2020, pp.9-19
- VII. **HASARLI KONİK KİRİŞLERİN SERBEST TİTREŞİM ANALİZLERİ İÇİN BİR SONLU ELEMAN MODELİ**  
KAHYA V., Güneş S. D., ŞİMŞEK S.  
TUMTMK 21. ULUSAL MEKANİK KONGRESİ, Niğde, Turkey, 2 - 06 September 2019, pp.887-897
- VIII. **FREE VIBRATIONS OF LAMINATED COMPOSITE BEAMS WITH ARBITRARY LAY-UP USING FINITE**

## **ELEMENT METHOD**

KAHYA V., ŞİMŞEK S., Vo T. P.

International Civil Engineering and Architecture Conference (ICEARC 2019), Trabzon, Turkey, 17 - 20 April 2019, vol.1, pp.976-989

- IX. Localization of Open Transverse Cracks in Laminated Composite Beams Based on Modal Data**  
KAHYA V., ŞİMŞEK S., ALTUNIŞIK A. C., OKUR F. Y., ASLAN M.  
International Congress on Engineering and Architecture, Alanya, Turkey, 14 - 16 November 2018
- X. Finite Element Model for Free Vibration Analysis of Tapered Elastic Beams with Multiple Cracks**  
KAHYA V., Güneş S. D., ŞİMŞEK S.  
International Congress on Engineering and Architecture, Antalya, Turkey, 14 - 16 November 2018, pp.59-69
- XI. Finite Element for Free Vibration Analysis of Tapered Beams**  
KAHYA V., Güneş S. D., ŞİMŞEK S.  
International Conference on Innovative Engineering Applications, Sivas, Turkey, 20 - 22 September 2018
- XII. Natural Frequency Analysis of Laminated Composite Beams with Multiple Open Transverse Cracks**  
KAHYA V., ŞİMŞEK S., OKUR F. Y., ALTUNIŞIK A. C., ASLAN M.  
International Conference on Innovative Engineering Applications, Sivas, Turkey, 20 - 22 September 2018, pp.327-334
- XIII. A Finite Element for Free Vibration Analysis of Tapered Beams**  
KAHYA V., Güneş S. D., ŞİMŞEK S.  
International Conference on Innovative Engineering Applications, Sivas, Turkey, 20 - 22 September 2018, pp.286-292
- XIV. Finite Element Model for Anisotropic Laminated Composite Beams**  
ŞİMŞEK S., KAHYA V.  
World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium, Prag, Czech Republic, 18 - 22 June 2018
- XV. Damage Localization in Steel Cantilever Beams with Multiple Cracks Using Modal Characteristics**  
KAHYA V., ŞİMŞEK S.  
World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium, Prag, Czech Republic, 18 - 22 June 2018
- XVI. Damage detection of a multiple cracked cantilever beam**  
ALTUNIŞIK A. C., OKUR F. Y., KAHYA V., KARACA S.  
8th International Advanced Technologies Symposium, Elazığ, Turkey, 19 - 22 October 2017, pp.75-82
- XVII. A FINITE ELEMENT MODEL FOR ANISOTROPIC LAMINATED COMPOSITE BEAMS**  
ŞİMŞEK S., KAHYA V.  
World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium, Prag, Czech Republic, 12 - 16 June 2017, pp.368
- XVIII. Free vibration of cracked cantilever beams: Analytical and experimental modelling**  
KAHYA V., KARACA S.  
International Conference on Advances and Innovations in Engineering, Elazığ, Turkey, 10 - 12 May 2017, pp.695-700
- XIX. Atasu Barajı (Trabzon) İçme Suyu Kalitesinin İncelenmesi**  
SATILMIŞ U., BAYRAM A., BAHADIR Ü., KARACA S.  
Çankırı Havza Yönetimi Sempozyumu, Çankırı, Turkey, 10 - 12 September 2014, vol.0, no.0

## **Supported Projects**

KAHYA V., ŞİMŞEK S., ASLAN M., ALTUNIŞIK A. C., TOĞAN V., Project Supported by Higher Education Institutions, Tabakalı Kompozit Yapılarda Modal Karakteristikler Yardımıyla Hasar Tespiti İçin Optimizasyon Tabanlı Bir Yöntem Geliştirilmesi, 2021 - 2024

## **Memberships / Tasks in Scientific Organizations**

TMMOB İnşaat Mühendisleri Odası, Member, 2014 - Continues

## **Metrics**

Publication: 35

Citation (WoS): 185

Citation (Scopus): 204

H-Index (WoS): 6

H-Index (Scopus): 6