

# Prof. AFŞİN SARITAŞ

## Personal Information

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## International Researcher IDs

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Publons / Web Of Science ResearcherID: A-9880-2013

ScopusID: 6602698384

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## Education Information

Doctorate, University of California, Berkeley, İnşaat Mühendisliği, United States Of America 2000 - 2006

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, Turkey 1995 - 1999

## Foreign Languages

English, C1 Advanced

## Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 2011 - Continues

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 2009 - 2011

Lecturer PhD, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 2007 - 2009

Research Assistant, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 1999 - 2006

## Advising Theses

SARITAŞ A., DETERMINATION OF MECHANICAL AND MICROSTRUCTURAL PROPERTIES OF ENGINEERED CEMENTITIOUS COMPOSITE INCORPORATING DIFFERENT TYPES OF SCM, FILLER, AND PVA FIBER, Postgraduate, A.JAMAL(Student), 2022

SARITAŞ A., Modeling of the nonlinear behavior of semi-rigid connections in steel framed structures and its influence on three dimensional analysis of structural systems, Doctorate, H.Firat(Student), 2019

UTKU M., SARITAŞ A., Free vibration analysis of uniform or tapered beams with transversely functionally graded materials, Postgraduate, O.KOÇKAYA(Student), 2018

SARITAŞ A., Influence of the nonlinear behavior of semi-rigid connections on the analysis of low-rise steel framed structures, Postgraduate, Z.KARAKAŞ(Student), 2017

SARITAŞ A., Susceptibility of mid-rise and high-rise steel moment resisting frame buildings to the nonlinear behavior of

beam-column connections, Postgraduate, M.BAYRAKTAR(Student), 2017

SARITAŞ A., TURANLI L., Assessment of the nonlinear behavior of rc moment resisting framed buildings made of structural lightweight concrete, Postgraduate, M.ALİ(Student), 2015

TOPKAYA C., SARITAŞ A., Numerical studies on eccentrically braced frames, Doctorate, A.KUŞYILMAZ(Student), 2014

SARITAŞ A., Finite element modeling of beams with functionally graded materials, Postgraduate, T.GÜROL(Student), 2014

SARITAŞ A., UZOL O., Computational fluid dynamic analysis of wind loads acting on ground mounted solar panels /, Postgraduate, V.EMRE(Student), 2014

SARITAŞ A., Finite element modeling approaches and comparative study on the nonlinear behavior of steel shear-links, Postgraduate, Y.KIZILDAĞ(Student), 2013

SARITAŞ A., A parametric study on the influence of semi-rigid connection nonlinearity on steel special moment frames, Postgraduate, T.METİN(Student), 2013

SARITAŞ A., A three dimensional mixed formulation nonlinear frame finite element based on Hu-Washizu functional, Doctorate, O.SOYDAŞ(Student), 2013

SARITAŞ A., A finite element model for partially restrained steel beam to column connections, Postgraduate, A.KÖSEOĞLU(Student), 2013

SARITAŞ A., Modeling of nonlinear behavior of steel beam to column semi-rigid connections with 3-D solid finite elements, Postgraduate, M.NURETTİN(Student), 2013

SARITAŞ A., Effect of reinforcement and pre-stressing force on ASR expansion, Postgraduate, O.MUSAOĞLU(Student), 2012

SARITAŞ A., Parametric analysis of inelastic interaction in frame-wall structural systems, Postgraduate, S.SEÇKİNER(Student), 2011

SARITAŞ A., A comparative study on the nonlinear behavior of chevron and suspended zipper braced steel frames, Postgraduate, A.YİĞİT(Student), 2010

SARITAŞ A., Effect of inelastic behaviour of load bearing walls on the frame-wall structural systems, Postgraduate, G.GÜLER(Student), 2009

SARITAŞ A., 3-D finite element analysis of semi-rigid steel connections, Postgraduate, C.HARUN(Student), 2009

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

- I. **Spatial variation of physical, mechanical, and thermophysical properties of 3D printed concrete across a full-scale wall**  
Bayrak A. T., Shaban N., Seyedian Choubi S., Tuncer E., Yang S., Yılmaz H. D., Alkilani A. Z., Dal H., Unluer C., Gürsel Dino I., et al.  
CONSTRUCTION AND BUILDING MATERIALS, vol.431, 2024 (SCI-Expanded)
- II. **Frame finite element model for nonlinear and vibration analysis of steel structures with Beam-Column and Column-Base Semi-Rigid Connections Kiriş-Kolon ve Kolon-Taban Yari-Rijit bağlantılı çelik yapıların doğrusal olmayan ve titreşim analizleri için çerçeve sonlu elemanı modeli**  
Özel H. F., SARITAŞ A.  
Journal of the Faculty of Engineering and Architecture of Gazi University, vol.37, no.3, pp.1609-1623, 2022 (SCI-Expanded)
- III. **Free vibration characteristics of a 3d mixed formulation beam element with force-based consistent mass matrix**  
Soydas O., SARITAŞ A.  
JOURNAL OF VIBRATION AND CONTROL, vol.23, no.16, pp.2635-2655, 2017 (SCI-Expanded)
- IV. **Consistent matrices for steel framed structures with semi-rigid connections accounting for shear deformation and rotary inertia effects**  
ÖZEL H. F., SARITAŞ A., Tasbahji T.  
ENGINEERING STRUCTURES, vol.137, pp.194-203, 2017 (SCI-Expanded)
- V. **Hybrid finite element for analysis of functionally graded beams**  
SARITAŞ A., Gurol T., Soydas O.

- MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, vol.24, no.3, pp.228-239, 2017 (SCI-Expanded)
- VI. **Comparison of chevron and suspended-zipper braced steel frames**  
Ozcelik Y., SARITAŞ A., Clayton P. M.  
JOURNAL OF CONSTRUCTIONAL STEEL RESEARCH, vol.119, pp.169-175, 2016 (SCI-Expanded)
- VII. **Distributed inelasticity planar frame element with localized semi-rigid connections for nonlinear analysis of steel structures**  
SARITAŞ A., KÖSEOĞLU A.  
INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, pp.216-231, 2015 (SCI-Expanded)
- VIII. **Assessing the Effects of Mechanical Preventive Measures on Alkali-Silica Reaction Expansion with Accelerated Mortar Bar Test**  
Musaoglu O., TURANLI L., SARITAŞ A.  
JOURNAL OF TESTING AND EVALUATION, vol.42, no.6, pp.1520-1529, 2014 (SCI-Expanded)
- IX. **Analysis of RC walls with a mixed formulation frame finite element**  
SARITAŞ A., Filippou F. C.  
COMPUTERS AND CONCRETE, vol.12, no.4, pp.519-536, 2013 (SCI-Expanded)
- X. **An accurate nonlinear 3d Timoshenko beam element based on Hu-Washizu functional**  
Soydas O., SARITAŞ A.  
INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.74, pp.1-14, 2013 (SCI-Expanded)
- XI. **Variational base and solution strategies for non-linear force-based beam finite elements**  
SARITAŞ A., Soydas O.  
INTERNATIONAL JOURNAL OF NON-LINEAR MECHANICS, vol.47, no.3, pp.54-64, 2012 (SCI-Expanded)
- XII. **Strengthening the structural behavior of adobe walls through the use of plaster reinforcement mesh**  
TURANLI L., SARITAŞ A.  
CONSTRUCTION AND BUILDING MATERIALS, vol.25, no.4, pp.1747-1752, 2011 (SCI-Expanded)
- XIII. **Stress resultants plasticity with general closest point projection**  
SARITAŞ A.  
MECHANICS RESEARCH COMMUNICATIONS, vol.38, no.2, pp.126-130, 2011 (SCI-Expanded)
- XIV. **Inelastic axial-flexure-shear coupling in a mixed formulation beam finite element**  
SARITAŞ A., Filippou F. C.  
INTERNATIONAL JOURNAL OF NON-LINEAR MECHANICS, vol.44, no.8, pp.913-922, 2009 (SCI-Expanded)
- XV. **Numerical integration of a class of 3d plastic-damage concrete models and condensation of 3d stress-strain relations for use in beam finite elements**  
SARITAŞ A., Filippou F. C.  
ENGINEERING STRUCTURES, vol.31, no.10, pp.2327-2336, 2009 (SCI-Expanded)
- XVI. **Frame Element for Metallic Shear-Yielding Members under Cyclic Loading**  
SARITAŞ A., Filippou F. C.  
JOURNAL OF STRUCTURAL ENGINEERING-ASCE, vol.135, no.9, pp.1115-1123, 2009 (SCI-Expanded)
- XVII. **Modeling of inelastic behavior of curved members with a mixed formulation beam element**  
SARITAŞ A.  
FINITE ELEMENTS IN ANALYSIS AND DESIGN, vol.45, no.5, pp.357-368, 2009 (SCI-Expanded)

### Articles Published in Other Journals

- I. **A Beam Finite Element for Shear Critical RC Beams**  
Filippou F. C., SARITAŞ A.  
American Concrete Institute Special Publication, pp.295-310, 2006 (Peer-Reviewed Journal)

### Refereed Congress / Symposium Publications in Proceedings

- I. **A 2D FRAME ELEMENT TAKING INTO ACCOUNT SEMI-RIGIDITY AT COLUMN BASES, BRACE ENDS BEAM TO COLUMN CONNECTIONS IN STEEL STRUCTURES**  
ÖZEL H. F., SARITAŞ A.  
9th Hellenic National Conference of Steel Structures, Larissa, Greece, 5 - 07 October 2017
- II. **Three dimensional frame element formulation for nonlinear analysis of semi rigid steel structures**  
ÖZEL H. F., SARITAŞ A., KARAKAŞ Z.  
12th International Congress on Advances in Civil Engineering, Istanbul, Turkey, September 21-23, 2016, İstanbul, Turkey, 21 - 23 September 2016
- III. **Capturing inelastic coupling of internal forces and exact vibration frequencies for 3 d Timoshenko beam finite elements**  
SOYDAŞ O., SARITAŞ A.  
The 2016 World Congress on Advances in Civil, Environmental, and Materials Research (ACEM16)/The 2016 Structures Congress (Structures16), Jeju, Korea, 28 August - 01 September 2016, Jeju, South Korea, 28 August - 01 September 2016
- IV. **Wind loads acting on solar panels in a row by CFD analysis**  
USLU V. E., SARITAŞ A., UZOL O.  
The 2016 World Congress on Advances in Civil, Environmental, and Materials Research (ACEM16)/The 2016 Structures Congress (Structures16), Jeju, Korea, 28 August - 01 September 2016, Jeju, South Korea, 28 August - 01 September 2016
- V. **Finite element model with semi rigid connections for vibration assessment of steel moment resisting framed structures**  
ÖZEL H. F., SARITAŞ A., TASBAJİ T.  
The International Colloquium on Stability and Ductility of Steel Structures, Timisoara, Romania, 30 May - 01 June 2016, Timişoara, Romania, 30 May - 01 June 2016
- VI. **Stress strain behaviour of structural lightweight concrete under confinement**  
ŞENEL M. A., TASBAHJİ T., TURANLI L., SARITAŞ A.  
M.A. Senel, T. Tasbahji, L. Turanli, A. Saritas; "Stress-strain behaviour of structural lightweight concrete under confinement", 6th International Conference on Structural Engineering and Construction Management, Kandy, Sri Lanka, 11-13 December 2015, Kandy, Sri Lanka, 11 - 13 December 2015
- VII. **Vibration characteristics of various wide flange steel beams and columns**  
ÖZEL H. F., SARITAŞ A., TASBAHJİ T.  
6th International Conference on Structural Engineering and Construction Management, Kandy, Sri Lanka, 11-13 December 2015, Kandy, Sri Lanka, 11 - 13 December 2015
- VIII. **Yarı rijit bağlantılı çelik çerçeve yapıların titreşim özelliklerinin modellenmesi**  
ÖZEL H. F., SARITAŞ A., TASBAHJİ T.  
3.Türkiye Deprem Mühendisliği ve Sismoloji Konferansı, İzmir, 14-16 Ekim 2015, İzmir, Turkey, 14 - 16 October 2015
- IX. **Fonksiyonel derecelendirilmiş malzemeli kirişlerin karma formülasyon sonlu elemanlarla modellenmesi**  
SARITAŞ A., GÜROL T.  
19. Ulusal Mekanik Kongresi, Trabzon, 24-28 Ağustos 2015, Trabzon, Turkey, 24 - 28 August 2015
- X. **Modeling of the nonlinear behavior of steel framed structures with semi rigid connections**  
SARITAŞ A., KÖSEOĞLU A., ÖZEL H. F.  
8th International Conference on Advances in Steel Structures ICASS 2015, Lisbon, Portugal, July 21-24, 2015, Lizbon, Portugal, 21 - 24 July 2015
- XI. **Comparison of low rise steel chevron and suspended zipper braced steel frames**  
ÖZÇELİK Y., SARITAŞ A., CLAYTON P.  
8th International Conference on Advances in Steel Structures ICASS 2015, Lisbon, Portugal, July 21-24, 2015, Lizbon, Portugal, 21 - 24 July 2015
- XII. **An Accurate modeling approach for calculating the vibration characteristics of steel framed structures with semi rigid connections**

ÖZEL H. F., SARITAŞ A.

8th International Conference on Behaviour of Steel Structures in Seismic Areas STESSA 2015, Shanghai, China, July 1-3, 2015, Şanghai, China, 1 - 03 July 2015

**XIII. Çelik bağ kirişleri kullanım alanları ve çözümsel modellenmeleri**

SARITAŞ A., Filippou F. C.

Çelik bağ kirişleri kullanım alanları ve çözümsel modellenmeleri”, Yapıların Onarımı ve Güçlendirilmesi Sempozyumu, Denizli, 7-8 Aralık 2006, Denizli, Turkey, 7 - 08 December 2006

**XIV. Üç boyutlu plastisite hasar malzeme modellerinin sayısal entegrasyonu**

SARITAŞ A.

16. Ulusal Mekanik Kongresi, Kayseri, 22-26 Haziran 2009, Kayseri, Turkey, 22 - 26 June 2009

**XV. Eğri yapı elemanları için karma formülasyon kiriş sonlu elemanı**

SARITAŞ A.

16. Ulusal Mekanik Kongresi, Kayseri, 22-26 Haziran 2009, Turkey, 22 - 26 June 2009

**XVI. Modeling of shear yielding members for seismic energy dissipation**

SARITAŞ A., Filippou F. C.

13th World Conference on Earthquake Engineering, Vancouver, Canada, August 1-6, 2004, Vancouver, Canada, 1 - 06 August 2004

**XVII. Failure analysis of shear critical RC structural members**

SARITAŞ A., Filippou F. C.

5th International Conference on Computation of Shell and Spatial Structures, Salzburg, Austria, June 1-4, 2005, Salzburg, Austria, 1 - 04 June 2005

**XVIII. Mixed formulation of RC beam element with shear axial force and flexure interaction**

Filippou F. C., SARITAŞ A.

US-Japan Workshop on Simulation of Collapse of Concrete Structures: from Research to Practice, Maui, November 2-4, 2003, United States Of America, 2 - 04 November 2003

## Metrics

Publication: 36

Citation (WoS): 235

Citation (Scopus): 213

H-Index (WoS): 10

H-Index (Scopus): 9

## Non Academic Experience

Türk Silahlı Kuvvetleri