

## Prof. SERKAN DAĞ

### Personal Information

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### Education Information

Doctorate, Lehigh University, Makina Mühendisliği, United States Of America 1998 - 2002

Post Graduate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Makine Mühendisliği (YI) (Tezli), Turkey 1995 - 1997

Under Graduate, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, Turkey 1990 - 1995

### Research Areas

Mechanical Engineering

### Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2013 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2008 - 2013

Assistant Professor, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2002 - 2008

Lecturer PhD, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2002 - 2002

### Professional Experience

University Executive Board Member, Middle East Technical University, Graduate School of Natural and Applied Sciences, 2013 - Continues

### Advising Theses

DAĞ S., Dynamic frictional contact problems involving functionally graded materials, Doctorate, M.NURULLAH(Student), 2018

DAĞ S., Forced vibration analysis of generally laminated composite beams using domain boundary element method, Post Graduate, Z.AHMED(Student), 2018

DAĞ S., Oblique surface cracking and crack closure in an orthotropic medium under contact loading, Post Graduate, S.ERCİHAN(Student), 2018

DAĞ S., CİĞEROĞLU E., New modeling and analysis methods for micro-plates, Doctorate, R.AGHAZADEH(Student), 2017

DAĞ S., Shape optimization of helicopter subfloor intersection element under crash loading, Post Graduate, M.OKAN(Student), 2017

DAĞ S., Free vibration analysis of functionally graded rectangular nano-plates considering spatial variation of the nonlocal parameter, Post Graduate, A.ALIPOUR(Student), 2017

DAĞ S., Contact mechanics of graded orthotropic coatings, Doctorate, O.ARSLAN(Student), 2016

DAĞ S., Investigation of fatigue behaviour of external stores under fixed wing aircraft platforms during random vibration, Post Graduate, E.OKUR(Student), 2015

DAĞ S., A surface crack in an orthotropic medium subjected to sliding contact by a rigid stamp, Doctorate, D.SARIKAYA(Student), 2014

DAĞ S., Isıl ve higroskopik yüklemeye altındaki ortotropik fonksiyonel derecelendirilmiş malzemelerde hesaplamalı yöntemlerle kırılma analizi, Doctorate, S.TOPAL(Student), 2013

DAĞ S., Fatigue and fracture analysis of helicopter fuselage structures, Post Graduate, R.ÖZCAN(Student), 2013

ORAL S., DAĞ S., Design of a vehicle barrier, Post Graduate, E.METİN(Student), 2013

DAĞ S., CİĞEROĞLU E., Static and free vibration analyses of small-scale functionally graded beams possessing a variable length scale parameter using different beam theories, Post Graduate, R.AGHAZADEH(Student), 2013

DAĞ S., Hygrothermal fracture analysis of fibrous composites with variable fiber spacing using Jk-integral, Post Graduate, F.SAEİDİ(Student), 2013

DAĞ S., Malzeme özellikleri sıcaklığa bağımlı olan izotropik fonksiyonel derecelendirilmiş malzemelerde bulunan eğik çatlakların gerilme şiddet çarpanları Jk-integral yöntemi ile hesaplanması, Post Graduate, M.YEGANEHPoor(Student), 2012

DAĞ S., Three dimensional fracture analysis of orthotropic materials, Post Graduate, G.AKGÜL(Student), 2012

DAĞ S., Tek yönlü kompozit malzemelerin higrotermal kırılma analizi için Jk-integral metodu, Post Graduate, O.ARSLAN(Student), 2011

DAĞ S., YAZICIOĞLU Y., Vibration fatigue analysis of structures under broadband excitation, Post Graduate, B.KOÇER(Student), 2010

DAĞ S., YAMAN İ. Ö. , Finite element simulation of crack propagation for steel fiber reinforced concrete, Post Graduate, K.ÖZENÇ(Student), 2009

DAĞ S., Mechanical characterization and modelling of porous polymeric materials manufactured by selective laser sintering, Post Graduate, C.MURAT(Student), 2009

GÖKLER M. İ. , DAĞ S., Finite element analysis of a micro satellite structure under vibration induced loads during launch, Post Graduate, S.ONTAÇ(Student), 2008

DAĞ S., Jk-integral formulation and implementation for thermally loaded orthotropic functionally graded materials, Post Graduate, E.ERHAN(Student), 2008

DAĞ S., Storage reliability analysis of solid rocket propellants, Post Graduate, M.SİNAN(Student), 2008

DAĞ S., KADIOĞLU F. S. , Computational 3d fracture analysis in axisymmetric media, Post Graduate, Ö.ÜNAL(Student), 2008

DAĞ S., Stress and fracture analysis of riveted joints, Post Graduate, G.KEÇELİOĞLU(Student), 2008

DAĞ S., Three dimensional fracture analysis of fillet welds, Post Graduate, F.FIÇICI(Student), 2007

DAĞ S., A finite elements based approach for fracture analysis of welded joints in construction machinery, Post Graduate, T.KARAGÖZ(Student), 2007

DAĞ S., Mixed-mode fracture analysis of orthotropic FGM coatings under mechanical and thermal loads, Doctorate, K.AYŞE(Student), 2007

DAĞ S., Three dimensional mixed mode fracture analysis of functionally graded materials, Post Graduate, S.KÖŞKER(Student), 2007

DAĞ S., Thermal stress intensity factor evaluation for inclined cracks in functionally graded materials using Jk-integral method, Post Graduate, B.DEMİRÇİVİ(Student), 2006

DAĞ S., Fatigue crack growth analysis models for functionally graded materials, Post Graduate, B.SABUNCUOĞLU(Student), 2006

DAĞ S., KADIOĞLU F. S. , Buckling driven delamination of orthotropic functionally graded materials, Post Graduate, S.YILMAZ(Student), 2006

DAĞ S., Mixed-mode fracture analysis of orthotropic functionally graded materials, Post Graduate, D.SARIKAYA(Student), 2005

DAĞ S., Contact mechanics of graded materials with two-dimensional material property variations, Post Graduate, K.GÖKAY(Student), 2005

DAĞ S., Fonksiyonel derecelendirilmiş malzemelerden yapılmış termal bariyer kaplamalarındaki kenar çatlaklarının süreksiz rejimde sonlu elemanlar metodu ile incelenmesi, Post Graduate, E.GÜLİN(Student), 2004

DAĞ S., Three dimensional fracture analysis of FGM coatings, Post Graduate, Ö.İNAN(Student), 2004  
DAĞ S., Automated design analysis of anti-roll bars, Post Graduate, K.ÇALIŞKAN(Student), 2003  
DAĞ S., Contact mechanics of a graded surface with elastic gradation in lateral direction, Post Graduate, A.CİHAN(Student), 2003

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- **Forced vibrations of functionally graded annular and circular plates by domain-boundary element method**  
Eshraghi I., DAĞ S.  
ZAMM-ZEITSCHRIFT FUR ANGEWANDTE MATHEMATIK UND MECHANIK, vol.100, 2020 (Journal Indexed in SCI)
- **Moving contact problems involving a rigid punch and a functionally graded coating**  
Balci M. N. , DAĞ S.  
APPLIED MATHEMATICAL MODELLING, vol.81, pp.855-886, 2020 (Journal Indexed in SCI)
- **Mechanics of dynamic contact of coated substrate and rigid cylindrical ended punch**  
Balci M. N. , DAĞ S.  
JOURNAL OF MECHANICAL SCIENCE AND TECHNOLOGY, vol.33, pp.2225-2240, 2019 (Journal Indexed in SCI)
- **Solution of the dynamic frictional contact problem between a functionally graded coating and a moving cylindrical punch**  
BALCI M. N. , DAĞ S.  
INTERNATIONAL JOURNAL OF SOLIDS AND STRUCTURES, vol.161, pp.267-281, 2019 (Journal Indexed in SCI)
- **Thermal effect on bending, buckling and free vibration of functionally graded rectangular micro-plates possessing a variable length scale parameter**  
Aghazadeh R., Dağ S., Ciğeroğlu E.  
MICROSYSTEM TECHNOLOGIES-MICRO-AND NANOSYSTEMS-INFORMATION STORAGE AND PROCESSING SYSTEMS, vol.24, pp.3549-3572, 2018 (Journal Indexed in SCI)
- **Dynamic frictional contact problems involving elastic coatings**  
BALCI M. N. , DAĞ S.  
TRIBOLOGY INTERNATIONAL, vol.124, pp.70-92, 2018 (Journal Indexed in SCI)
- **Hyperbolic heat conduction based weight function method for thermal fracture of functionally graded hollow cylinders**  
Eshraghi I., Soltani N., DAĞ S.  
INTERNATIONAL JOURNAL OF PRESSURE VESSELS AND PIPING, vol.165, pp.249-262, 2018 (Journal Indexed in SCI)
- **Modelling of graded rectangular micro-plates with variable length scale parameters**  
Aghazadeh R., Dağ S., Ciğeroğlu E.  
STRUCTURAL ENGINEERING AND MECHANICS, vol.65, pp.573-585, 2018 (Journal Indexed in SCI)
- **Domain-boundary element method for elastodynamics of functionally graded Timoshenko beams**  
Eshraghi I., DAĞ S.  
COMPUTERS & STRUCTURES, vol.195, pp.113-125, 2018 (Journal Indexed in SCI)
- **Contact mechanics problem between an orthotropic graded coating and a rigid punch of an arbitrary profile**  
ARSLAN O., DAĞ S.  
INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.135, pp.541-554, 2018 (Journal Indexed in SCI)
- **Free vibration analysis of functionally graded rectangular nanoplates considering spatial variation of the nonlocal parameter**  
Ghassabı A. A. , Dağ S., Ciğeroğlu E.  
ARCHIVES OF MECHANICS, vol.69, pp.105-130, 2017 (Journal Indexed in SCI)
- **Subsurface stresses in graded coatings subjected to frictional contact with heat generation**  
BALCI M. N. , DAĞ S., YILDIRIM B.

- JOURNAL OF THERMAL STRESSES, vol.40, pp.517-534, 2017 (Journal Indexed in SCI)  
**Surface cracking in an orthotropic medium subjected to frictional contact**  
Sarıkaya D., DAĞ S.
- INTERNATIONAL JOURNAL OF SOLIDS AND STRUCTURES, vol.90, pp.1-11, 2016 (Journal Indexed in SCI)  
**Bending and free vibrations of functionally graded annular and circular micro-plates under thermal loading**  
Eshraghi I., DAĞ S., Soltani N.
- COMPOSITE STRUCTURES, vol.137, pp.196-207, 2016 (Journal Indexed in SCI)  
**Consideration of spatial variation of the friction coefficient in contact mechanics analysis of laterally graded materials**  
DAĞ S.
- ZAMM-ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK, vol.96, pp.121-136, 2016 (Journal Indexed in SCI)  
**Weight function method for transient thermomechanical fracture analysis of a functionally graded hollow cylinder possessing a circumferential crack**  
Eshraghi I., Soltani N., DAĞ S.
- JOURNAL OF THERMAL STRESSES, vol.39, pp.1182-1199, 2016 (Journal Indexed in SCI)  
**Analysis of frictional contacts with heat generation considering temperature dependent properties**  
BALCI M. N. , YILDIRIM B., DAĞ S.
- INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.101, pp.59-69, 2015 (Journal Indexed in SCI)  
**Consideration of spatial variation of the length scale parameter in static and dynamic analyses of functionally graded annular and circular micro-plates**  
Eshraghi I., DAĞ S., Soltani N.
- COMPOSITES PART B-ENGINEERING, vol.78, pp.338-348, 2015 (Journal Indexed in SCI)  
**Static and free vibration analyses of small-scale functionally graded beams possessing a variable length scale parameter using different beam theories**  
Aghazadeh R., Ciğeroğlu E., Dağ S.
- EUROPEAN JOURNAL OF MECHANICS A-SOLIDS, vol.46, pp.1-11, 2014 (Journal Indexed in SCI)  
**Production of graded porous polyamide structures and polyamide-epoxy composites via selective laser sintering**  
Jande Y. A. C. , ERDAL ERDOĞMUŞ M., DAĞ S.
- JOURNAL OF REINFORCED PLASTICS AND COMPOSITES, vol.33, pp.1017-1036, 2014 (Journal Indexed in SCI)  
**Computational Methods for Inclined Cracks in Orthotropic Functionally Graded Materials Under Thermal Stresses**  
DAĞ S., YILDIRIM B., TOPAL S.
- JOURNAL OF THERMAL STRESSES, vol.36, pp.1001-1026, 2013 (Journal Indexed in SCI)  
**Frictional Hertzian contact between a laterally graded elastic medium and a rigid circular stamp**  
DAĞ S., GÜLER M. A. , YILDIRIM B., Ozatag A. C.
- ACTA MECHANICA, vol.224, pp.1773-1789, 2013 (Journal Indexed in SCI)  
**Hygrothermal Fracture Analysis of Orthotropic Functionally Graded Materials Using J(k)-Integral-Based Methods**  
TOPAL S., DAĞ S.
- MATHEMATICAL PROBLEMS IN ENGINEERING, 2013 (Journal Indexed in SCI)  
**Three dimensional computational analysis of fatigue crack propagation in functionally graded materials**  
Sabuncuoğlu B., DAĞ S., YILDIRIM B.
- COMPUTATIONAL MATERIALS SCIENCE, vol.52, pp.246-252, 2012 (Journal Indexed in SCI)  
**HYGROTHERMAL FRACTURE ANALYSIS OF ORTHOTROPIC MATERIALS USING J(k)-INTEGRAL**  
DAĞ S., YILDIRIM B., Arslan O., Arman E. E.
- JOURNAL OF THERMAL STRESSES, vol.35, pp.596-613, 2012 (Journal Indexed in SCI)  
**A surface crack in a graded coating subjected to sliding frictional contact**

DAĞ S., APATAY T., GÜLER M. A. , Gulgec M.

ENGINEERING FRACTURE MECHANICS, vol.80, pp.72-91, 2012 (Journal Indexed in SCI)

● **Computation of thermal fracture parameters for orthotropic functionally graded materials using  $J(k)$ -integral**

DAĞ S., Arman E. E. , YILDIRIM B.

INTERNATIONAL JOURNAL OF SOLIDS AND STRUCTURES, vol.47, pp.3480-3488, 2010 (Journal Indexed in SCI)

● **Sliding frictional contact between a rigid punch and a laterally graded elastic medium**

DAĞ S., GÜLER M. A. , Yidirim B., Ozatag A. C.

INTERNATIONAL JOURNAL OF SOLIDS AND STRUCTURES, vol.46, pp.4038-4053, 2009 (Journal Indexed in SCI)

● **Computation of Thermal Fracture Parameters for Inclined Cracks in Functionally Graded Materials Using  $J_k$ -Integral**

DAĞ S., YILDIRIM B.

JOURNAL OF THERMAL STRESSES, vol.32, pp.530-556, 2009 (Journal Indexed in SCI)

● **Mixed-mode fracture analysis of orthotropic functionally graded material coatings using analytical and computational methods**

DAĞ S., Ilhan K. A.

JOURNAL OF APPLIED MECHANICS-TRANSACTIONS OF THE ASME, vol.75, 2008 (Journal Indexed in SCI)

● **Mixed-mode fracture analysis of orthotropic functionally graded materials under mechanical and thermal loads**

Dag S., Yildirim B., Sarikaya D.

INTERNATIONAL JOURNAL OF SOLIDS AND STRUCTURES, vol.44, pp.7816-7840, 2007 (Journal Indexed in SCI)

● **A surface crack in a graded coating bonded to a homogeneous substrate under general loading conditions**

El-Borgi S., Abdelmoula R., DAĞ S., Lajnef N.

JOURNAL OF MECHANICS OF MATERIALS AND STRUCTURES, vol.2, pp.1331-1353, 2007 (Journal Indexed in SCI)

● **Mixed-mode fracture analysis of functionally graded materials under thermal stresses: A new approach using  $J(k)$ -integral**

Dag S.

JOURNAL OF THERMAL STRESSES, vol.30, pp.269-296, 2007 (Journal Indexed in SCI)

● **Thermal fracture analysis of orthotropic functionally graded materials using an equivalent domain integral approach**

Dag S.

ENGINEERING FRACTURE MECHANICS, vol.73, pp.2802-2828, 2006 (Journal Indexed in SCI)

● **Circumferential crack problem for an fgm cylinder under thermal stresses**

DAĞ S., Kadioğlu S., Yahşi O. S.

Journal of Thermal Stresses, vol.22, pp.659-687, 1999 (Journal Indexed in SCI)

● **Crack problem for a functionally graded layer on an elastic foundation**

Kadioğlu S., DAĞ S., Yahşi S.

International Journal of Fracture, vol.94, pp.63-77, 1998 (Journal Indexed in SCI)

## Articles Published in Other Journals

● **Domain-boundary element method for forced vibrations of fiber-reinforced laminated beams**

Ahmed Z., Eshraghi I., DAĞ S.

INTERNATIONAL JOURNAL FOR COMPUTATIONAL METHODS IN ENGINEERING SCIENCE & MECHANICS, vol.21, pp.141-158, 2020 (Journal Indexed in ESCI)

## Refereed Congress / Symposium Publications in Proceedings

● **MIXED-MODE HYGROTHERMAL FRACTURE ANALYSIS OF ORTHOTROPIC FUNCTIONALLY GRADED MATERIALS USING J-INTEGRAL**

TOPAL S., DAĞ S.

12th ASME Biennial Conference on Engineering Systems Design and Analysis (ESDA2014), Copenhagen, Denmark, 25 - 27 June 2014

● **Three Dimensional Modeling of Inclined Surface Cracks in FGM Coatings**

Kosker S., DAĞ S., YILDIRIM B.

10th International Symposium on Multiscale, Multifunctional and Functionally Graded Materials, Sendai, Japan, 22 - 25 September 2008, pp.109-110

● **Mechanical modeling of Thin Films Bonded to Functionally Graded Materials**

GÜLER M. A. , Gulver Y. F. , DAĞ S.

10th International Symposium on Multiscale, Multifunctional and Functionally Graded Materials, Sendai, Japan, 22 - 25 September 2008, pp.333-334

● **Manufacturing of Functionally Graded Porous Products by Selective Laser Sintering**

ERDAL ERDOĞMUŞ M., DAĞ S., Jande Y., Tekin C. M.

10th International Symposium on Multiscale, Multifunctional and Functionally Graded Materials, Sendai, Japan, 22 - 25 September 2008, pp.253-258

● **Structural finite element analysis of stiffened and honeycomb panels of the RASAT satellite**

Ontac S., DAĞ S., Goekler M. I.

3rd International Conference on Recent Advances in Space Technologies, İstanbul, Turkey, 14 - 16 June 2007, pp.171-172

● **Modeling of thin films and cover plates bonded to graded substrates**

GÜLER M. A. , Erdogan F., DAĞ S.

9th International Conference on Multiscale and Functionally Graded Materials, Hawaii, United States Of America, 15 - 18 October 2006, vol.973, pp.790-791

● **Mixed-mode stress intensity factors for an embedded crack in an orthotropic FGM coating**

DAĞ S., İlhan K. A. , Erdogan F.

9th International Conference on Multiscale and Functionally Graded Materials, Hawaii, United States Of America, 15 - 18 October 2006, vol.973, pp.16-17

● **Contact mechanics of graded materials: Analyses using singular integral equations**

Dag S.

9th International Conference on Multiscale and Functionally Graded Materials, Hawaii, United States Of America, 15 - 18 October 2006, vol.973, pp.820-825

● **Fatigue crack growth analysis models for functionally graded materials**

DAĞ S., Sabuncuoglu B., YILDIRIM B.

9th International Conference on Multiscale and Functionally Graded Materials, Hawaii, United States Of America, 15 - 18 October 2006, vol.973, pp.423-424

● **Three dimensional analysis of periodic cracking in FGM coatings under thermal stresses**

DAĞ S., Yildirin B., Erdogan F.

9th International Conference on Multiscale and Functionally Graded Materials, Hawaii, United States Of America, 15 - 18 October 2006, vol.973, pp.676-677

● **The frictional contact problem of sliding rigid parabolic stamps on graded materials**

GÜLER M. A. , Erdogan F., DAĞ S.

9th International Conference on Multiscale and Functionally Graded Materials, Hawaii, United States Of America, 15 - 18 October 2006, vol.973, pp.784-785

## Citations

Total Citations (WOS):609

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