

Asst. Prof. Adnan Kefal

Personal Information

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International Researcher IDs

ScopusID: 56866304900

Education Information

Postgraduate, Istanbul Technical University, Fen Bilimleri, Mühendislik Yönetimi, Turkey 2017 - Continues

Doctorate, University of Strathclyde, Faculty Of Engineering, Naval Architecture, Ocean And Marine Engineering, United Kingdom 2013 - 2017

Undergraduate, Istanbul Technical University, Gemi İnşaatı Ve Deniz Bilimleri Fakültesi, Gemi İnşaatı Ve Gemi Makineleri Mühendisliği Bölümü, Turkey 2008 - 2013

Undergraduate, University of Southampton, Faculty Of Engineering And The Environment, Ship Science - Erasmus Exchange, United Kingdom 2011 - 2012

Foreign Languages

English, C1 Advanced

Certificates, Courses and Trainings

Education Management and Planning, Postgraduate Certificate in Researcher Professional Development (PG Cert RPD), University of Strathclyde, 2017

Dissertations

Doctorate, Structural Health Monitoring of Marine Structures by using Inverse Finite Element Method, University Of Strathclyde, Faculty Of Engineering,, Department Of Naval Architecture, Ocean And Marine Engineering,, 2017

Research Areas

Technical Sciences, Mechanical Engineering, Mechanical, Solid Mechanics, Fracture Mechanics, Finite Element Methods, Continuous Mechanics, Naval Architecture and Marine Engineering, Ship Construction, Metallurgical and Materials Engineering, Material science and engineering, Composites

Academic Titles / Tasks

Assistant Professor, Istanbul Technical University, Gemi İnşaatı Ve Deniz Bilimleri Fakültesi, Gemi İnşaatı Ve Gemi

Academic and Administrative Experience

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Dent damage identification in stiffened cylindrical structures using inverse Finite Element Method**
Li M., Kefal A., Cerik B. C., Oterkus E.
Ocean Engineering, vol.198, 2020 (SCI-Expanded)
- II. **Topology optimization of cracked structures using peridynamics**
Kefal A., Sohoulı A., Oterkus E., YILDIZ M., Suleman A.
CONTINUUM MECHANICS AND THERMODYNAMICS, vol.31, no.6, pp.1645-1672, 2019 (SCI-Expanded)
- III. **An efficient curved inverse-shell element for shape sensing and structural health monitoring of cylindrical marine structures**
Kefal A.
OCEAN ENGINEERING, vol.188, 2019 (SCI-Expanded)
- IV. **Experimental and numerical investigation on fracture behavior of glass/carbon fiber hybrid composites using acoustic emission method and refined zigzag theory**
Tabrizi I. E., Kefal A., ZANJANI J. S. M., Akalin C., YILDIZ M.
COMPOSITE STRUCTURES, vol.223, 2019 (SCI-Expanded)
- V. **Isogeometric plate element for unstiffened and blade stiffened laminates based on refined zigzag theory**
Hasim K. A., Kefal A., Madenci E.
COMPOSITE STRUCTURES, vol.222, 2019 (SCI-Expanded)
- VI. **A novel isogeometric beam element based on mixed form of refined zigzag theory for thick sandwich and multilayered composite beams**
Kefal A., Hasim K. A., YILDIZ M.
COMPOSITES PART B-ENGINEERING, vol.167, pp.100-121, 2019 (SCI-Expanded)
- VII. **A computational model of peridynamic theory for deflecting behavior of crack propagation with micro-cracks**
BAŞOĞLU M. F., ZERİN Z., Kefal A., Oterkus E.
COMPUTATIONAL MATERIALS SCIENCE, vol.162, pp.33-46, 2019 (SCI-Expanded)
- VIII. **Modelling and parameter identification of electromechanical systems for energy harvesting and sensing**
Kefal A., Maruccio C., Quaranta G., Oterkus E.
MECHANICAL SYSTEMS AND SIGNAL PROCESSING, vol.121, pp.890-912, 2019 (SCI-Expanded)
- IX. **Three dimensional shape and stress monitoring of bulk carriers based on iFEM methodology**
Kefal A., Mayang J. B., Oterkus E., Yildiz M.
OCEAN ENGINEERING, vol.147, pp.256-267, 2018 (SCI-Expanded)
- X. **Modeling of Sensor Placement Strategy for Shape Sensing and Structural Health Monitoring of a Wing-Shaped Sandwich Panel Using Inverse Finite Element Method**
Kefal A., Yildiz M.
SENSORS, vol.17, no.12, 2017 (SCI-Expanded)
- XI. **An enhanced inverse finite element method for displacement and stress monitoring of multilayered composite and sandwich structures**
Kefal A., TESSLER A., Oterkus E.
COMPOSITE STRUCTURES, vol.179, pp.514-540, 2017 (SCI-Expanded)
- XII. **Displacement and stress monitoring of a Panamax containership using inverse finite element method**
Kefal A., Oterkus E.

OCEAN ENGINEERING, vol.119, pp.16-29, 2016 (SCI-Expanded)

- XIII. **Displacement and stress monitoring of a chemical tanker based on inverse finite element method**
Kefal A., Oterkus E.
OCEAN ENGINEERING, vol.112, pp.33-46, 2016 (SCI-Expanded)

Articles Published in Other Journals

- I. **A quadrilateral inverse-shell element with drilling degrees of freedom for shape sensing and structural health monitoring**
Kefal A., Oterkus E., TESSLER A., SPANGLER J. L.
ENGINEERING SCIENCE AND TECHNOLOGY-AN INTERNATIONAL JOURNAL-JESTECH, vol.19, no.3, pp.1299-1313, 2016 (ESCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **Increasing Toughness by Introducing Micro-cracks**
BAŞOĞLU M. F., ZERİN Z., KEFAL A., Oterkus E.
ASME 2019 International Mechanical Engineering Congress and Exposition (IMECE), Utah, United States Of America, 8 - 14 November 2019, pp.13171
- II. **Isogeometric iFEM analysis**
KEFAL A., Oterkus E.
International Mechanical Engineering Congress Exposition (IMECE 2019), Utah, United States Of America, 8 - 14 November 2019
- III. **Dent damage prediction by using iFEM**
Li M., KEFAL A., Cerik B. C., Oterkus E.
International Mechanical Engineering Congress Exposition (IMECE 2019), Utah, United States Of America, 8 - 14 November 2019
- IV. **Multi-material Topology Optimization of Structures using Peridynamics**
Sohouli A., KEFAL A., YILDIZ M., Suleman A.
30th International Conference on Adaptive Structures and Technologies (ICAST2019), Montreal, Canada, 7 - 11 October 2019
- V. **Modeling Of Thick Composite Structures With An Eight-Node Curved Shell Element By Using The Refined Zigzag Theory**
BAŞOĞLU M. F., KEFAL A., HAŞİM K. A.
7th ECCOMAS Thematic Conference on the Mechanical Response of Composites: COMPOSITES 2019, Girona, Spain, 18 - 20 September 2019, pp.50
- VI. **Dynamic Behavior of Functionally Graded Plates using Bond-Based Peridynamics**
ÖZDEMİR M., KEFAL A., Oterkus E.
International Conference on Nonlinear Solid Mechanics (IconSoM2019), 16 - 19 June 2019
- VII. **Structural health monitoring of submarine pressure hull using inverse finite element method**
Li M., KEFAL A., Cerik B. C., Oterkus E.
7th International Conference on Marine Structures (MARSTRUCT 2019), Dubrovnik, Croatia, 6 - 08 May 2019
- VIII. **Displacement and Stress Monitoring of a Curved Stiffened Panel based on Inverse Finite Element Method**
KEFAL A.
7th International Conference on Marine Structures (MARSTRUCT 2019), Dubrovnik, Croatia, 6 - 08 May 2019
- IX. **Peridynamics Simulations on the Deflecting Propagation of Cracks with Minor Cracks**
BAŞOĞLU M. F., ZERİN Z., KEFAL A., Oterkus E.
The International Workshop on Computational Mechanics of Materials (IWCMM 28), Glasgow, United Kingdom, 10

- 12 September 2018

- X. **Synchronization-based approach for parameters identification in linear and nonlinear energy harvesting systems dynamics**
KEFAL A., Maruccio C., Quaranta G., Montegiglio P., Oterkus E.
The 28th International Workshop on Computational Mechanics of Materials (IWCMM), Glasgow, United Kingdom, 10 - 12 September 2018
- XI. **Topology Optimization of Cracked Structures using Peridynamics**
KEFAL A., Sohouli A., Oterkus E., YILDIZ M., Suleman A.
28th International Workshop on Computational Mechanics of Materials IWCMM28, Glasgow, United Kingdom, 10 - 12 September 2018
- XII. **Isogeometric analysis of moderately thick composite beams and plates based on refined zigzag theory**
KEFAL A., HAŞİM K. A., YILDIZ M.
28th International Workshop on Computational Mechanics of Materials IWCMM28, Glasgow, United Kingdom, 10 - 12 September 2018
- XIII. **Isogeometric analysis using peridynamics and XFEM**
Madenci E., Kefal A., Dorduncu M., Barut A., Yildiz M.
AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 2018, Florida, United States Of America, 8 - 12 January 2018
- XIV. **Deformation risks of the Marmaray tunnel and requirement of real-time monitoring based on iFEM method**
Sen S., Karacuha E., OTERKUS E., Kefal A., Erdem Z., Balci C., Kerey I. E., Celik G.
International Tunneling Symposium, İstanbul, Turkey, 2 - 03 December 2017, pp.1
- XV. **A novel methodology to determine optimum sensor locations for bulk carriers**
Kefal A., MAYANG J. B., OTERKUS E.
The 4th Symposium on Fluid-Structure-Sound Interactions and Control, Tokyo, Japan, 21 - 24 August 2017, pp.1
- XVI. **An inverse finite element method based on refined zigzag theory for structural health monitoring of laminated composite and sandwich shell structures**
Kefal A., TESSLER A., OTERKUS E.
The 14th U.S. National Congress on Computational Mechanics, Montreal, Canada, 17 - 20 July 2017, pp.1
- XVII. **Structural health monitoring of a wing-shaped sandwich panel using iFEM-RZT methodology**
Kefal A., YILDIZ M., OTERKUS E.
The 3rd Joint Turkey-Japan Workshop on Polymeric Composite Materials, Kyoto, Japan, 5 - 07 July 2017, pp.1
- XVIII. **Shape and stress sensing of offshore structures by using inverse finite element method**
Kefal A., OTERKUS E.
6th International Conference on Marine Structures, MARSTRUCT 2017, Lisbon, Portugal, 8 - 10 May 2017, pp.141-148
- XIX. **Shape sensing of aerospace structures by coupling isogeometric analysis and inverse finite element method**
Kefal A., OTERKUS E.
The 58th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Texas, United States Of America, 9 - 13 January 2017, pp.427
- XX. **Shape- and stress-sensing of a container ship by using inverse finite element method**
Kefal A., OTERKUS E.
The Royal Institution of Naval Architects (RINA) International Conference on Smart Ship Technology, London, United Kingdom, 26 - 27 January 2016, pp.67-75
- XXI. **A smart system to determine sensor locations for structural health monitoring of ship structures**
Kefal A., Hizir O., OTERKUS E.
9th International Workshop on Ship and Marine Hydrodynamics (IWSH 2015), Glasgow, United Kingdom, 26 - 28 August 2015, pp.1
- XXII. **Structural health monitoring of marine structures by using inverse finite element method**

Kefal A., OTERKUS E.

5th International Conference on Marine Structures (MARSTRUCT 2015), Southampton, United Kingdom, 25 March - 27 May 2015, pp.341-349

Other Publications

I. An Efficient Inverse Finite Element Method for Shape and Stress Sensing of Laminated Composite and Sandwich Plates and Shells

Kefal A., TESSLER A., OTERKUS E.

Technical Report, pp.1-61, 2018

II. Hydrodynamic and structural analysis

Kefal A., OTERKUS E.

Technical Report, pp.1-92, 2014

Scientific Refereeing

Composite Structures, SCI Journal, May 2018

Mechanical Systems and Signal Processing, SCI Journal, May 2018

Metrology and Measurement Systems, SCI Journal, May 2018

Ocean Engineering, SCI Journal, May 2018

Journal of the Faculty of Engineering and Architecture of Gazi University, National Scientific Refreed Journal, February 2018

Ocean Engineering, SCI Journal, May 2016

Metrics

Publication: 42

Citation (WoS): 144

Citation (Scopus): 209

H-Index (WoS): 7

H-Index (Scopus): 8

Congress and Symposium Activities

28th International Workshop on Computational Mechanics of Materials, Session Moderator, Glasgow, United Kingdom, 2018

3rd Joint Turkey-Japan Workshop on Polymeric Composite Materials, Session Moderator, Kyoto, Japan, 2017

Scholarships

Engineering The Future Scholarship, University, 2013 - Continues

Non Academic Experience

State Agency, Nasa Langley Research Center, Structural Mechanics And Concepts Branch