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Education Information

Doctorate, Iowa State University, Chemical Engineering, United States Of America 1984 - 1987

Postgraduate, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, Turkey 1980 - 1984

Undergraduate, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Turkey 1974 - 1979

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Doctorate, Ionic Structure of Hydrocarbon Flames, Iowa State University, Chemical Engineering, 1987

Postgraduate, Fluid Flow and Heat Transfer in Circular and Annular Ducts, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 1984

Research Areas

Engineering and Technology

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Engineering Sciences, 2009 - 2016

Advising Theses

ERASLAN A. N., Development of computational fluid dynamics (CFD) based topology optimization codes in openfoam, Postgraduate, N.ŞENOL(Student), 2019

ERASLAN A. N., Negative bending of strain hardening curved beam in theelastoplastic states of stress, Postgraduate,

G.ÇAKIR(Student), 2018

ERASLAN A. N., Elastic analysis of orthotropic cylinders under different boundary conditions, Postgraduate,

Ö.CAN(Student), 2016

ERASLAN A. N., Analysis of stress in the elastic state in a solid cylinder subjected to periodic boundary condition, Postgraduate, B.YEDEKÇİ(Student), 2015

ERASLAN A. N., Analysis of stress in a solid cylinder with periodic heat generation, Postgraduate, E.VARLI(Student), 2015

ERASLAN A. N., Elastic-plastic solutions of a long tube subjected to a temperature cycle, Doctorate, Y.KAYA(Student), 2014

ERASLAN A. N., Effect of a temperature cycle on a rotating elastic-plastic shaft, Doctorate, E.Arslan(Student), 2010

ERASLAN A. N., Analytical and numerical solutions to rotating orthotropic disk problems, Postgraduate, Y.KAYA(Student), 2007

ERASLAN A. N., TOKDEMİR T., Generalized finite differences for the solution of one dimensional elastic plastic problems of nonhomogeneous materials, Postgraduate, P.UYGUR(Student), 2007

ERASLAN A. N., Thermoelastoplastic response of composite tubes subjected to nonuniform heat source external pressure and convective boundary condition /, Postgraduate, M.EMİN(Student), 2004

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **A CONCISE ANALYTICAL TREATMENT OF ELASTIC RESPONSE OF A COOLING TWO-LAYER SOLID CYLINDER WITH DIFFERENT END AND BOUNDARY CONDITIONS**
AKIŞ T., ERASLAN A. N.
ISI BILIMI VE TEKNİĞİ DERGİSİ-JOURNAL OF THERMAL SCIENCE AND TECHNOLOGY, vol.40, no.2, pp.293-308, 2020 (SCI-Expanded)
- II. **Analyses of elastic limit heat loads in thick walled tubes subjected to periodic surface temperatures: analytical treatment**
APATAY T., ERASLAN A. N.
ARCHIVES OF MECHANICS, vol.70, no.1, pp.37-53, 2018 (SCI-Expanded)
- III. **Thermal loading and unloading of a solid cylinder subjected to periodic internal energy cycling**
ERASLAN A. N., APATAY T.
ZAMM-ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK, vol.97, no.3, pp.340-357, 2017 (SCI-Expanded)
- IV. **Analytical solution to thermal loading and unloading of a cylinder subjected to periodic surface heating**
ERASLAN A. N., APATAY T.
JOURNAL OF THERMAL STRESSES, vol.39, no.8, pp.928-941, 2016 (SCI-Expanded)
- V. **Bending of graded curved bars at elastic limits and beyond**
ARSLAN E., ERASLAN A. N.
INTERNATIONAL JOURNAL OF SOLIDS AND STRUCTURES, vol.50, no.5, pp.806-814, 2013 (SCI-Expanded)
- VI. **Amendments on "Application of Mises yield criterion to rotating solid disk problem" by N. Aleksandrova [Int. J. Eng. Sci. 51 (2012) 333-337]**
ERASLAN A. N., AKIŞ T.
INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE, vol.56, pp.127-128, 2012 (SCI-Expanded)
- VII. **The rotating elastic-plastic hollow shaft conveying a hot medium**
Arslan E., Mack W., ERASLAN A. N.
FORSCHUNG IM INGENIEURWESEN-ENGINEERING RESEARCH, vol.74, no.1, pp.27-39, 2010 (SCI-Expanded)
- VIII. **Analytical solution to the bending of a nonlinearly hardening wide curved bar**
Arslan E., ERASLAN A. N.
ACTA MECHANICA, vol.210, pp.71-84, 2010 (SCI-Expanded)
- IX. **ELASTIC-PLASTIC STRESS ANALYSIS OF NONHOMOGENEOUS ROTATING SOLID DISCS**

ERASLAN A. N., APATAY T., Gulgec M.

JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.23, no.3, pp.627-635, 2008 (SCI-Expanded)

- X. **Discussion of the article "Approximate solution of limit angular speed for externally loaded rotating solid disk" by S. Bhowmick, D. Misra and NK Saha [Int J Mech Sci 2008;50:163-74]**
ERASLAN A. N., AKIŞ T.
INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.50, no.9, pp.1432-1433, 2008 (SCI-Expanded)
- XI. **A concise analytical treatment of elastic-plastic bending of a strain hardening curved beam**
ERASLAN A. N., Arslan E.
ZAMM-ZEITSCHRIFT FUR ANGEWANDTE MATHEMATIK UND MECHANIK, vol.88, no.8, pp.600-616, 2008 (SCI-Expanded)
- XII. **Thermoelastic response of a fin exhibiting elliptic thickness profile: An analytical solution**
ERASLAN A. N., TOKDEMİR T.
INTERNATIONAL JOURNAL OF THERMAL SCIENCES, vol.47, no.3, pp.274-281, 2008 (SCI-Expanded)
- XIII. **On the use of temperature-dependent physical properties in thermomechanical calculations for solid and hollow cylinders**
Argeso H., ERASLAN A. N.
INTERNATIONAL JOURNAL OF THERMAL SCIENCES, vol.47, no.2, pp.136-146, 2008 (SCI-Expanded)
- XIV. **Effect of a temperature cycle on a rotating elastic-plastic shaft**
ARSLAN E., Mack W., ERASLAN A. N.
ACTA MECHANICA, vol.195, pp.129-140, 2008 (SCI-Expanded)
- XV. **The strain hardening rotating hollow shaft subject to a positive temperature gradient**
Eraslan A. N., Arslan E., Mack W.
ACTA MECHANICA, vol.194, pp.191-211, 2007 (SCI-Expanded)
- XVI. **Exact solution of rotating FGM shaft problem in the elastoplastic state of stress**
Akis T., Eraslan A. N.
ARCHIVE OF APPLIED MECHANICS, vol.77, no.10, pp.745-765, 2007 (SCI-Expanded)
- XVII. **Stresses in FGM pressure tubes under non-uniform temperature distribution**
Eraslan A. N.
STRUCTURAL ENGINEERING AND MECHANICS, vol.26, no.4, pp.393-408, 2007 (SCI-Expanded)
- XVIII. **Heat and mass transfer mechanisms in drying of a suspension droplet: A new computational model**
Dalmaz N., Ozbelge H. O., Eraslan A. N., Uludag Y.
DRYING TECHNOLOGY, vol.25, pp.391-400, 2007 (SCI-Expanded)
- XIX. **The stress response and onset of yield of rotating FGM hollow shafts**
Akis T., Eraslan A. N.
ACTA MECHANICA, vol.187, pp.169-187, 2006 (SCI-Expanded)
- XX. **Plane strain analytical solutions for a functionally graded elastic-plastic pressurized tube**
Eraslan A. N., Akis T.
INTERNATIONAL JOURNAL OF PRESSURE VESSELS AND PIPING, vol.83, no.9, pp.635-644, 2006 (SCI-Expanded)
- XXI. **The stress response of partially plastic rotating FGM hollow shafts: Analytical treatment for axially constrained ends**
Eraslan A. N., Akis T.
MECHANICS BASED DESIGN OF STRUCTURES AND MACHINES, vol.34, no.3, pp.241-260, 2006 (SCI-Expanded)
- XXII. **On the plane strain and plane stress solutions of functionally graded rotating solid shaft and solid disk problems**
Eraslan A., Akis T.
ACTA MECHANICA, vol.181, pp.43-63, 2006 (SCI-Expanded)
- XXIII. **Yielding of two-layer shrink-fitted composite tubes subject to radial pressure**
Eraslan A., Akis T.
FORSCHUNG IM INGENIEURWESEN-ENGINEERING RESEARCH, vol.69, no.4, pp.187-196, 2005 (SCI-Expanded)
- XXIV. **Stress distributions in cooling fins of variable thickness with and without rotation**

- Eraslan A., Kartal M.
JOURNAL OF THERMAL STRESSES, vol.28, no.8, pp.861-883, 2005 (SCI-Expanded)
- XXV. **Elastoplastic analysis of nonlinearly hardening variable thickness annular disks under external pressure**
Eraslan A., Orcan Y., Guven U.
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- XXVI. **Stress distributions in elastic-plastic rotating disks with elliptical thickness profiles using Tresca and von Mises criteria**
Eraslan A.
ZAMM-ZEITSCHRIFT FUR ANGEWANDTE MATHEMATIK UND MECHANIK, vol.85, no.4, pp.252-266, 2005 (SCI-Expanded)
- XXVII. **A computational procedure for estimating residual stresses and secondary plastic flow limits in nonlinearly strain hardening rotating shafts**
Eraslan A., Mack W.
FORSCHUNG IM INGENIEURWESEN-ENGINEERING RESEARCH, vol.69, no.2, pp.65-75, 2005 (SCI-Expanded)
- XXVIII. **Tresca's yield criterion and linearly hardening rotating solid disks having hyperbolic profiles**
Eraslan A.
FORSCHUNG IM INGENIEURWESEN-ENGINEERING RESEARCH, vol.69, no.1, pp.17-28, 2004 (SCI-Expanded)
- XXIX. **Thermoplastic response of a linearly hardening cylinder subjected to nonuniform heat source and convective boundary condition**
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- XXX. **Von Mises' yield criterion and nonlinearly hardening rotating shafts**
Eraslan A.
ACTA MECHANICA, vol.168, pp.129-144, 2004 (SCI-Expanded)
- XXXI. **On annular disks of variable thickness subjected to external pressure**
Eraslan A., Apatay T.
FORSCHUNG IM INGENIEURWESEN-ENGINEERING RESEARCH, vol.68, no.3, pp.133-138, 2004 (SCI-Expanded)
- XXXII. **Elastoplastic deformations of rotating parabolic solid disks using Tresca's yield criterion**
Eraslan A.
EUROPEAN JOURNAL OF MECHANICS A-SOLIDS, vol.22, no.6, pp.861-874, 2003 (SCI-Expanded)
- XXXIII. **On the elastic-plastic deformation of a rotating disk subjected to a radial temperature gradient**
Eraslan A., Akis T.
MECHANICS BASED DESIGN OF STRUCTURES AND MACHINES, vol.31, no.4, pp.529-561, 2003 (SCI-Expanded)
- XXXIV. **Assessment of flow and heat transfer characteristics for proposed solid density distributions in dilute laminar slurry upflows through a concentric annulus**
Eraslan A., Ozbelge T.
CHEMICAL ENGINEERING SCIENCE, vol.58, no.17, pp.4055-4069, 2003 (SCI-Expanded)
- XXXV. **Stress distributions in energy generating two-layer tubes subjected to free and radially constrained boundary conditions**
Eraslan A., Sener E., Argeso H.
INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.45, no.3, pp.469-496, 2003 (SCI-Expanded)
- XXXVI. **On the linearly hardening rotating solid shaft**
Eraslan A.
EUROPEAN JOURNAL OF MECHANICS A-SOLIDS, vol.22, no.2, pp.295-307, 2003 (SCI-Expanded)
- XXXVII. **Thermally induced deformations of composite tubes subjected to a nonuniform heat source**
Eraslan A.
JOURNAL OF THERMAL STRESSES, vol.26, no.2, pp.167-193, 2003 (SCI-Expanded)
- XXXVIII. **Von mises yield criterion and nonlinearly hardening variable thickness rotating annular disks with rigid inclusion**
Eraslan A.

- MECHANICS RESEARCH COMMUNICATIONS, vol.29, no.5, pp.339-350, 2002 (SCI-Expanded)
- XXXIX. **On the rotating elastic-plastic solid disks of variable thickness having concave profiles**
Eraslan A., Orcan Y.
INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.44, no.7, pp.1445-1466, 2002 (SCI-Expanded)
- XL. **Elastic-plastic stresses in linearly hardening rotating solid disks of variable thickness**
Orcan Y., Eraslan A.
MECHANICS RESEARCH COMMUNICATIONS, vol.29, no.4, pp.269-281, 2002 (SCI-Expanded)
- XLI. **Elastic-plastic deformation of a rotating solid disk of exponentially varying thickness**
Eraslan A., Orcan Y.
MECHANICS OF MATERIALS, vol.34, no.7, pp.423-432, 2002 (SCI-Expanded)
- XLII. **Computation of transient thermal stresses in elastic-plastic tubes: Effect of coupling and temperature-dependent physical properties**
Eraslan A., Orcan Y.
JOURNAL OF THERMAL STRESSES, vol.25, no.6, pp.559-572, 2002 (SCI-Expanded)
- XLIII. **Limit angular velocities of variable thickness rotating disks**
Eraslan A., Argeso H.
INTERNATIONAL JOURNAL OF SOLIDS AND STRUCTURES, vol.39, no.12, pp.3109-3130, 2002 (SCI-Expanded)
- XLIV. **Thermal stresses in elastic-plastic tubes with temperature-dependent mechanical and thermal properties**
Orcan Y., Eraslan A.
JOURNAL OF THERMAL STRESSES, vol.24, no.11, pp.1097-1113, 2001 (SCI-Expanded)
- XLV. **COMPUTER ECONOMY AND ACCURACY OF THE METHOD OF LINES APPLIED TO LAMINAR FLAME PROBLEMS**
ERASLAN A., BROWN R.
COMMUNICATIONS IN APPLIED NUMERICAL METHODS, vol.5, no.3, pp.181-190, 1989 (SCI-Expanded)

Articles Published in Other Journals

- I. **Analytical solutions to orthotropic variable thickness disk problems**
ERASLAN A. N., Kaya Y., VARLI E.
PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSITESI MUHENDISLIK BILIMLERI DERGISI, vol.22, no.1, pp.24-30, 2016 (ESCI)
- II. **DEFORMATION ANALYSIS OF TWO LAYER COMPOSITE TUBES UNDER CYCLIC LOADING OF EXTERNAL PRESSURE**
ERASLAN A. N., AKIŞ T.
Journal of Basic and Applied Research International, 2016 (Peer-Reviewed Journal)
- III. **Fracture and Fatigue Crack Growth Characterization of Conventional and Head Hardened Railway Rail Steels**
Motameni A., ERASLAN A. N.
Journal of Scientific and Engineering Research, 2016 (Peer-Reviewed Journal)
- IV. **Analytical and Numerical Solutions to a Rotating FGM Disk**
ERASLAN A. N., ARSLAN E.
Journal of Multidisciplinary Engineering Science and Technology, vol.2, no.10, pp.2843-2850, 2015 (Peer-Reviewed Journal)
- V. **Analytical Solutions To Elastic Functionally Graded Cylindrical And Spherical Pressure Vessels**
ERASLAN A. N., AKIŞ T.
Journal of Multidisciplinary Engineering Science and Technology, vol.2, no.10, pp.2686-2693, 2015 (Peer-Reviewed Journal)
- VI. **Analytical and Numerical Solutions to Rotating Variable Thickness Disks for a New Thickness Profile**
ERASLAN A. N., Buşra Ç.

- Journal of Multidisciplinary Engineering Science and Technology, vol.2, no.9, pp.2359-2364, 2015 (Peer-Reviewed Journal)
- VII. **Thermoelastic Stresses in a Rod Subjected to Periodic Boundary Condition An Analytical Treatment**
ERASLAN A. N., APATAY T.
Journal of Multidisciplinary Engineering Science and Technology, vol.2, no.9, pp.2438-2444, 2015 (Peer-Reviewed Journal)
- VIII. **Stress analysis in strain hardening two layer composite tubes subjectto cyclic loading of internal pressure**
ERASLAN A. N., AKIŞ T.
International Journal of Advances in Applied Mathematics and Mechanics, vol.3, no.2, pp.65-76, 2015 (Peer-Reviewed Journal)
- IX. **Elastic Response of a Heat Generating Rod at a Variable Generation Rate**
ERASLAN A. N., VARLI E.
International Journal of Advances in Engineering Science and Technology, vol.4, no.2, pp.73-83, 2015 (Peer-Reviewed Journal)
- X. **A COMPUTATIONAL MODEL FOR PARTIALLY PLASTIC STRESS ANALYSIS OF ORTHOTROPIC VARIABLE THICKNESS DISKS SUBJECTED TO EXTERNAL PRESSURE**
ERASLAN A. N., KAYA KARALAR Y., YEDEKÇİ B.
Mathematical Sciences and Applications E-Notes, vol.2, no.1, pp.1-13, 2014 (Peer-Reviewed Journal)
- XI. **Analytical Solution of Nonlinear Strain Hardening Preheated Pressure Tube**
ERASLAN A. N., APATAY T.
Turkish Journal of Engineering and Environmental Sciences, 2008 (Peer-Reviewed Journal)
- XII. **Computer Solutions of Plane Strain Axisymmetric Thermomechanical Problems**
ERASLAN A. N., ARGEŞO A. H.
Turkish Journal of Engineering and Environmental Sciences, 2005 (Peer-Reviewed Journal)
- XIII. **A Class of Nonisothermal Variable Thickness Rotating Disk Problems Solved by Hypergeometric Functions**
ERASLAN A. N.
Turkish Journal of Engineering and Environmental Sciences, 2005 (Peer-Reviewed Journal)
- XIV. **Yielding and Elastoplastic Deformation of Annular Disks of a Parabolic Section Subject to External Compression**
AKGÜL F., ERASLAN A. N.
Turkish Journal of Engineering and Environmental Sciences, vol.29, no.1, pp.51-60, 2005 (Scopus)
- XV. **Deformation Analysis of Elastic-Plastic Two Layer Tubes Subject to Pressure: an Analytical Approach**
ERASLAN A. N., AKIŞ T.
Turkish Journal of Engineering and Environmental Sciences, 2004 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **Effects of wall thickness and material properties on the elastic limit behavior of a tube subject to periodic boundary conditions**
APATAY T., ERASLAN A. N.
International Congress on Industrial and Applied Mathematics, Valensiya, Spain, 15 - 19 July 2019
- II. **İç Yüzey Sıcaklığı Periyodik Olarak Değişen Kalın Cidarlı Tüplerde Termoelastik Gerilme Davranışı: Analitik Çözüm**
ERASLAN A. N., APATAY T.
20. Ulusal Mekanik Kongresi, Bursa, Turkey, 5 - 09 September 2017
- III. **Dış Yüzey Sıcaklığı Zamanla Değişen Silindirin Elastik-Plastik Analitik Çözümü**
ERASLAN A. N., APATAY T., VARLI E.
19. Ulusal Mekanik Kongresi, Turkey, 24 - 28 August 2015

- IV. **SİNÜZOİDAL DEĞİŞEN İÇ ISI ÜRETİMİ ETKİSİNDEKİ SİLİNDİRİN KISMEN PLASTİK ANALİTİK ÇÖZÜMÜ**
APATAY T., ERASLAN A. N., YEDEKÇİ B.
Ulusal Mekanik Kongresi XIX, Trabzon, Turkey, 24 - 28 August 2015, vol.1, pp.97-104
- V. **Analytical and Numerical Solutions to Rotating Variable Thickness Disks for a New Thickness Profile**
ERASLAN A. N., Ciftci B.
International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), Rhodes, Greece, 22 - 28 September 2014, vol.1648
- VI. **Elastic Response of Heat Generating Rod at a Variable Generating Rate**
ERASLAN A. N., VARLI E.
International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), Rhodes, Greece, 22 - 28 September 2014, vol.1648

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