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Education Information

Doctorate, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, Turkey 2007 - 2013

Postgraduate, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, Turkey 2004 - 2006

Undergraduate, İstanbul Teknik Üniversitesi, Uçak Ve Uzay Bilimleri Fakültesi, Uçak Mühendisliği Bölümü, Turkey 1999 - 2004

Foreign Languages

English

Dissertations

Doctorate, Mechanics of nanomaterials consisted of random networks, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, 2013

Postgraduate, Mikro hücreli karbon köpüklerin istatistiksel ve sayısal olarak modellenmesi, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, 2006

Research Areas

Technical Sciences, Mechanical Engineering, Mechanical, Solid Mechanics, Fracture Mechanics, Finite Element Methods, Continuous Mechanics, Aeronautical and Space Engineering, Aeronautical Engineering, Structural Technologies, Material Technologies, Metallic Materials

Academic Titles / Tasks

Associate Professor, Istanbul Technical University, Makina, Makina Mühendisliği, 2013 - Continues

Research Assistant, University Of Pittsburgh, İnşaat Fakültesi, İnşaat Mühendisliği, 2009 - 2010

Courses

KATI CİSİMLER MEKANİĞİNİN TEMELLERİ, Postgraduate, 2014 - 2015, 2016 - 2017

FİNİTE ELEMENT ANALYSIS IN ENGINEERING, Undergraduate, 2016 - 2017

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

- I. **Tensile behavior of nanoporous polyethylene reinforced with carbon-based nanostructures**
Degirmenci U., Erturk A. S., Yurtalan M. B., Kirca M.
COMPUTATIONAL MATERIALS SCIENCE, vol.186, 2021 (Journal Indexed in SCI)
- II. **Strain rate effects on tensile and compression behavior of nano-crystalline nanoporous gold: A molecular dynamic study**
Yıldız Y. O., Ahadi A., Kirca M.
MECHANICS OF MATERIALS, vol.143, 2020 (Journal Indexed in SCI)
- III. **'Explicit' and 'implicit' non-local continuous descriptions for a plate with circular inclusion in tension**
Tuna M., Leonetti L., Trovalusci P., Kirca M.
MECCANICA, vol.55, no.4, pp.927-944, 2020 (Journal Indexed in SCI)
- IV. **Reverse non-equilibrium molecular dynamics simulations on the thermal conductivity of three-dimensional graphene nano-ribbon foams**
Değirmenci Ü., Kirca M.
JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS, vol.136, 2020 (Journal Indexed in SCI)
- V. **Energy dissipation characteristics of covalently-bonded stochastic carbon nanotube networks under compressive loading**
Kirkayak L., Bilgili D., Kirca M.
COMPOSITES PART B-ENGINEERING, vol.172, pp.195-205, 2019 (Journal Indexed in SCI)
- VI. **Unification of Eringen's nonlocal parameter through an optimization-based approach**
Tuna Eroğlu M., Kirca M.
MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, 2019 (Journal Indexed in SCI)
- VII. **Deformation of atomic models and their equivalent continuum counterparts using Eringen's two-phase local/nonlocal model**
Tuna Eroğlu M., Kirca M., Trovalusci P.
MECHANICS RESEARCH COMMUNICATIONS, vol.97, pp.26-32, 2019 (Journal Indexed in SCI)
- VIII. **Mechanical performance and morphological evolution of heat-treated nanoporous gold: A molecular dynamics study**
Erturk A. S., Yildi Y. O., Kirca M.
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.108, pp.15-21, 2019 (Journal Indexed in SCI)
- IX. **Compression and shear behavior of ultrathin coated nanoporous gold: A molecular dynamics study**
Yıldız Y. O., Kirca M.
JOURNAL OF APPLIED PHYSICS, vol.124, no.18, 2018 (Journal Indexed in SCI)
- X. **Design and mechanical characterization of a novel carbon-based hybrid foam: A molecular dynamics study**
Değirmenci Ü., Kirca M.
COMPUTATIONAL MATERIALS SCIENCE, vol.154, pp.122-131, 2018 (Journal Indexed in SCI)
- XI. **Nanoporous gold reinforced with carbon based nanomaterials: A molecular dynamics study**
Gülmez D. E., Yıldız Y. O., Kirca M.
COMPOSITES PART B-ENGINEERING, vol.151, pp.62-70, 2018 (Journal Indexed in SCI)
- XII. **Mechanical enhancement of an aluminum layer by graphene coating**
ERTURK A. S., Kirca M., Kirkayak L.
JOURNAL OF MATERIALS RESEARCH, vol.33, no.18, pp.2741-2751, 2018 (Journal Indexed in SCI)
- XIII. **Mechanical behavior of a novel carbon-based nanostructured aluminum material**
ERTURK A. S., Yıldız Y. O., Kirca M.
COMPUTATIONAL MATERIALS SCIENCE, vol.144, pp.193-209, 2018 (Journal Indexed in SCI)
- XIV. **Bending, buckling and free vibration analysis of Euler-Bernoulli nanobeams using Eringen's nonlocal integral model via finite element method**
Tuna M., Kirca M.
COMPOSITE STRUCTURES, vol.179, pp.269-284, 2017 (Journal Indexed in SCI)
- XV. **Effects of ultrathin coating on the tensile behavior of nanoporous gold**

- Yıldız Y. O. , Kirca M.
JOURNAL OF APPLIED PHYSICS, vol.122, no.8, 2017 (Journal Indexed in SCI)
- XVI. **Respond to the comment letter by Romano and Barretta on the paper "Exact solution of Eringen's nonlocal integral model for bending of Euler-Bernoulli and Timoshenko beams"**
TUNA M., Kirca M.
International Journal of Engineering Science, vol.116, pp.141-144, 2017 (Journal Indexed in SCI Expanded)
- XVII. **The effects of intertube bridging through graphene nanoribbons on the mechanical properties of pillared graphene**
Bilgili D., Kirkayak L., Kirca M.
COMPOSITES PART B-ENGINEERING, vol.120, pp.1-9, 2017 (Journal Indexed in SCI)
- XVIII. **Atomistic simulation of Voronoi-based coated nanoporous metals**
Yıldız Y. O. , Kirca M.
MODELLING AND SIMULATION IN MATERIALS SCIENCE AND ENGINEERING, vol.25, no.2, 2017 (Journal Indexed in SCI)
- XIX. **Homogenization of additive manufactured polymeric foams with spherical cells**
Zeinalabedini H., Yıldız Y. O. , Zhang P., Laux K., Kirca M., To A. C.
ADDITIVE MANUFACTURING, vol.12, pp.274-281, 2016 (Journal Indexed in SCI)
- XX. **Exact solution of Eringen's nonlocal integral model for vibration and buckling of Euler-Bernoulli beam**
Tuna M., Kirca M.
INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE, vol.107, pp.54-67, 2016 (Journal Indexed in SCI)
- XXI. **Exact solution of Eringen's nonlocal integral model for bending of Euler-Bernoulli and Timoshenko beams**
Tuna M., Kirca M.
INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE, vol.105, pp.80-92, 2016 (Journal Indexed in SCI)
- XXII. **Effects of lithium doping on hydrogen storage properties of heat welded random CNT network structures**
Baykasoglu C., Ozturk Z., Kirca M., Celebi A. T. , MUGAN A., TO A. C.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.41, no.19, pp.8246-8255, 2016 (Journal Indexed in SCI)
- XXIII. **Sandwiched graphene-fullerene composite: A novel 3-D nanostructured material for hydrogen storage**
Ozturk Z., Baykasoglu C., Kirca M.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.41, no.15, pp.6403-6411, 2016 (Journal Indexed in SCI)
- XXIV. **Design and analysis of sandwiched fullerene-graphene composites using molecular dynamics simulations**
Kirca M.
COMPOSITES PART B-ENGINEERING, vol.79, pp.513-520, 2015 (Journal Indexed in SCI)
- XXV. **Efficient Design-Optimization of Variable-Density Hexagonal Cellular Structure by Additive Manufacturing: Theory and Validation**
Zhang P., TOMAN J., YU Y., BIYIKLI E., Kirca M., CHMIELUS M., TO A. C.
JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME, vol.137, no.2, 2015 (Journal Indexed in SCI)
- XXVI. **Hydrogen storage in heat welded random CNT network structures**
Ozturk Z., Baykasoglu C., Celebi A. T. , KIRCA M., Muğan A., TO A. C.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.40, no.1, pp.403-411, 2015 (Journal Indexed in SCI)
- XXVII. **Tensile behavior of heat welded CNT network structures**
Celebi A. T. , KIRCA M., Baykasoglu C., Muğan A., TO A. C.
COMPUTATIONAL MATERIALS SCIENCE, vol.88, pp.14-21, 2014 (Journal Indexed in SCI)
- XXVIII. **Nonlinear failure analysis of carbon nanotubes by using molecular-mechanics based models**
Baykasoglu C., Kirca M., MUGAN A.
COMPOSITES PART B-ENGINEERING, vol.50, pp.150-157, 2013 (Journal Indexed in SCI)

- XXIX. **A stochastic algorithm for modeling heat welded random carbon nanotube network**
Kirca M., YANG X., To A. C.
COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING, vol.259, pp.1-9, 2013 (Journal Indexed in SCI)
- XXX. **Thermal conductivity of periodic array of intermolecular junctions of silicon nanowires**
Yang X., TO A. C. , Kirca M.
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.44, no.1, pp.141-145, 2011 (Journal Indexed in SCI)
- XXXI. **On determining the thermal state of individual atoms in molecular dynamics simulations of nonequilibrium processes in solids**
Fu Y., Kirca M., To A. C.
CHEMICAL PHYSICS LETTERS, vol.506, pp.290-297, 2011 (Journal Indexed in SCI)
- XXXII. **Surface structure and properties of functionalized nanodiamonds: a first-principles study**
Datta A., Kirca M., FU Y., To A. C.
NANOTECHNOLOGY, vol.22, no.6, 2011 (Journal Indexed in SCI)
- XXXIII. **Ligament and joint sizes govern softening in nanoporous aluminum**
To A. C. , TAO J., Kirca M., SCHALK L.
APPLIED PHYSICS LETTERS, vol.98, no.5, 2011 (Journal Indexed in SCI)
- XXXIV. **Computational modeling of micro-cellular carbon foams**
Kirca M., GUL A., EKINCI E., Yardim F., MUGAN A.
FINITE ELEMENTS IN ANALYSIS AND DESIGN, vol.44, pp.45-52, 2007 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Compressive behavior and deformation mechanism of nanoporous open-cell foam with ultrathin ligaments**
GIRI A., TAO J., WANG L., Kirca M., To A. C.
Journal of Nanomechanics and Micromechanics, vol.4, no.2, 2014 (Refereed Journals of Other Institutions)
- II. **Mechanical properties of SWNT X-Junctions through molecular dynamics simulation**
Stormer B., Piper N., Yang X., TAO J., FU Y., Kirca M., To A.
International Journal of Smart and Nano Materials, vol.3, no.1, pp.33-46, 2012 (Refereed Journals of Other Institutions)

Books & Book Chapters

- I. **Mechanics of CNT Network Materials**
KIRCA M., TO A. C.
in: Advanced Computational Nanomechanics, Nuno Silvestre, Editor, WILEY, 2016

Citations

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