Dr. Meral Tuna Eroğlu

Education

Ph. D	2013 - 2020	Istanbul Technical University, Mechanical Engineering GPA: 3.81/4.00 *Thesis:* Nonlocal theory of elasticity in nanomechanics and application to multiscale models
M. Sc	2010 - 2013	Istanbul Technical University, Solid Mechanics GPA: 4.00/4.00 *Thesis:* Computer simulation of bone remodeling
B. Sc	2005 – 2010	Istanbul Technical University, Shipbuilding and Ocean Engineering GPA: 2.98/4.00 *Thesis:* Stability analysis of Roll-on/Roll-off (RORO) ships

Experience

Yaşar University
Assistant Professor — **Sep 2020 - Present**

Sapienza Università di Roma
Visiting Researcher — **Feb 2020 – Aug 2020**
Visiting Researcher — **Jun 2019 – Sep 2019**
Visiting Researcher — **Apr 2018 – Jul 2018**
Visiting Researcher — **Nov 2017 – Jan 2018**

Istanbul Technical University
Research and Teaching Assistant — **Feb 2011 – Oct 2018**

Research Interest

Theoretical and applied solid mechanics, multiscale modelling approaches, nonlocal (non-classical) elasticity theories, molecular dynamics simulations, numerical methods, biomechanics: dental mechanics and bone remodeling.

Research Ambitions

Non-linear solid mechanics, mechanics of elastoplastic materials, modelling of damage propagation

Language

Turkish
Native speaker
Persian
Native speaker
English
e-YDS: 95/100 (Computer-Based Foreign Language Test) (July, 2020)

Publications in SCI, SCI-E Journals

Tuna M., Trovalusci P. (2021) Stress distribution around an elliptic hole in a plate with 'implicit'and 'explicit'non-local models. *Composite Structures*, 256, 113003.

Izadi R., **Tuna M**., Trovalusci P., Ghavanloo, E. (2021) Torsional characteristics of carbon nanotubes: Micropolar elasticity models and molecular dynamics simulation, *Nanomaterials*, 11:2, 453.

Tuna M., Kirca M. (2021) Unification of Eringen's nonlocal parameter through an optimization based approach. *Mechanics of Advanced Materials and Structures*, 28:8, 839-848.

Tuna M., Leonetti L., Trovalusci P., Kirca M. (2020) 'Explicit' and 'implicit' non-local continuous descriptions for a plate with circular inclusion in tension. *Meccanica*, 55:4, 927-944.

Tuna M., Trovalusci P. (2020) Scale dependent continuum approaches for discontinuous assemblies: 'explicit' and 'implicit' non-local models. *Mechanics Research Communication*, 103, 103461.

Tuna M., Kirca M., Trovalusci P. (2019) Deformation of atomic models and their equivalent continuum counterparts using Eringen's two-phase local/nonlocal model. *Mechanics Research Communication*, 97, 26-32.

Tuna M., Kirca M. (2017) Bending, buckling and free vibration analysis of Euler-Bernoulli nanobeams using Eringen's nonlocal integral model via finite element method. *Composite Structures*, 179, 269-284.

Tuna M., Kirca M. (2017) 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". *International Journal of Engineering Science*, 116, 141-144.

Tuna M., Kirca M. (2016) Exact Solution of Eringen's nonlocal integral model for vibration and buckling of Euler-Bernoulli beam. *International Journal of Engineering Science*, 107, 54-67.

Tuna M., Kirca M. (2016) Exact Solution of Eringen's nonlocal integral model for bending of Euler-Bernoulli and Timoshenko beams. *International Journal of Engineering Science*, 105, 80-92.

Tuna M., Sunbuloglu E., Bozdag E. (2014) Finite element simulation of the behavior of the periodontal ligament: a validated nonlinear contact model. *Journal of Biomechanics*, 47:12, 2883-2890.

Book Chapter

Tuna M., Leonetti L., Trovalusci P., Kirca M. (2021) 'Explicit' and 'implicit' non-local continuum descriptions: Plate with circular hole. *Size-dependent Continuum Mechanics Approaches*, edited by Ghavanloo E., Fazelzadeh S.A., Marotti de Sciarra F., 311-338, Springer.

Others

Çelik Güven M., **Tuna M**., Bozdağ E., Öztürk G.N., Bayraktar G. (2017) Comparison of retention forces with various fabrication methods and materials in double crowns. *The Journal of Advanced Prosthodontics*, *9*, 308–314.

Imren Y., Gurkan V., Bilsel K., Desteli E.E., **Tuna M**., Gurcan C., Tuncay I., Sen C. (2016) Biomechanical comparison of dynamic hip screw, proximal femoral nail, cannulated screw, and monoaxial external fixation in the treatment of basicervical femoral neck fractures. *Acta Chir Orthop Traumatol Cech*, 82, 140-144.

Yildiz F., Kiliçoglu O.I., Dikmen G., Bozdag E., Sunbuloglu E., **Tuna M**. (2016) Biomechanical comparison of oblique and step-cut osteotomies used in total hip arthroplasty with femoral shortening. *Journal of Orthopaedic Science*, 21, 640-646.

Karaca B., Basat S.O., Ozel A., Bozdag E., **Tuna M**, Sar M., Pilanci O. (2016) The effects of mucoperichondrial flap elevation on septal L-strut cartilage: a biomechanical and histological analysis in a rabbit model. *Plastic and reconstructive surgery*, 137, 1784-1791.

Bilgili F., Balci H.I., Karaytug K., Sariyilmaz K., Atalar A.C., Bozdag E., **Tuna M.**, Bilgic B., Gurler N. (2015) Can normal fracture healing be achieved when the implant is retained on the basis of infection, an experimental animal model. *Clinical Orthopaedics and Related Research,* 473, 3190-3196.

Citations

Total Citations (excluding self-citations): 313
h – index: 9

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