

Eralp Demir

CONTACT INFORMATION	<i>Mailing Adress:</i> Sabanci University, Orta mah. 34956 Tuzla, Istanbul, TURKEY.	<i>E-mail:</i> eralpd@sabanciuniv.edu <i>Phone:</i> (+90) 216 300 1354
CITIZENSHIP	Turkish	
DATE OF BIRTH	30.03.1981	
MARITAL STATUS	Married (one daughter)	
RESEARCH INTERESTS	Continuum mechanics, finite element analysis, crystal plasticity and texture, residual stress determination, orientation microscopy.	
EDUCATION	Cornell University, Sibley School of Mechanical and Aerospace Engineering, Ithaca, USA. Post-Doctoral studies, Deformation process laboratory, June 2010 - August 2012 <ul style="list-style-type: none">• Topic: A new multiscale methodology for evaluating three dimensional residual stress distributions of aerospace materials• Project investigators: Prof. Paul Dawson, Prof. Matthew Miller Max Planck Institut fur Eisenforschung, Dusseldorf, Germany Doctoral studies, Dept. of Microstructure Physics and Metal Forming, June 2007 - May 2010 <ul style="list-style-type: none">• Thesis Topic: Constitutive modeling of fcc single crystals and mechanical size effects• PhD. Advisor: Prof. Dierk Raabe, Dr. Franz Roters• PhD. degree: RWTH Aachen University, Faculty of Geo-resources and Materials Engineering• Area of Study: Investigation of mechanical size effect with finite element models and small scale experiments using electron microscopy, focused ion-beam milling, orientation microscopy and nano-indentation. Carnegie Mellon University, Pittsburgh, USA. Research assistant, Mechanical Engineering Department, May 2005 - January 2007 <ul style="list-style-type: none">• Advisor: Prof. Burak Ozdoganlar• Worked as a research assistant, took classes from materials science dept.; Advanced Characterization of Materials (Prof. A.D. Rollett), Defects and Dislocations (Prof. G.S. Rohrer), Structure of Materials (Prof. D.E. Laughlin)• Area of Study: tool workpiece indication (experimental), effect of cryogenic heat treatment on tungsten-carbide tool life (experimental) Middle East Technical University, Ankara, Turkey. M.S., Mechanical Engineering Department, June 2003 - April 2005 <ul style="list-style-type: none">• Thesis Topic: Design of fourbar linkages in computer environment• Advisor: Professor Eres Soylemez• Area of Study: Four bar linkage design for various applications B.S., Mechanical Engineering Department, September 1999 - June 2003 <ul style="list-style-type: none">• Graduated with 3.85/4.00 GPA	

JOB EXPERIENCE

Sabanci University, Istanbul, Turkey.

Faculty Member, August 2016 - current

- Teaching: MFG 512 Mechanics of Solids, MFG 513 Advanced Finite Element Methods, ENS 209 Computer Aided Drawing
- Theory and simulation group leader of Sabanci University - Composites Excellence Center
- Research: Design of variable stiffness composites

Gulermak Heavy Industries, Construction and Contracting Co., Ankara, Turkey.

Project Engineer, , August 2012 - August 2016

- Worked on bid preparation of various contracting projects in Turkey.
- On-site experience involves Electro-mechanical Systems Engineer of Otogar-Bagcilar metro, Site Manager at Golden Horn cable stayed bridge, Vice Project Manager at Sabiha Gokcen subway construction projects.
- Investigated some other business development opportunities like local production of metro vehicles in Turkey.

AWARDS

- Max Planck Fellowship, 2007-2010.
- Best cum.GPA award, 3rd ranking, 2003.
- Graduation project award, 3rd ranking, 2003.

SELECTED JOURNAL PUBLICATIONS

Demir E., A physically based constitutive model for FCC single crystals with a single state variable per slip system, *Modelling Simul. Mater. Sci. Eng.* 25 (2017) 015009 (23pp) [doi:10.1088/1361-651X/25/1/015009](https://doi.org/10.1088/1361-651X/25/1/015009) 0965-0393

Demir E., Park J.S., Miller M.P. and Dawson P.R., A computational framework for evaluating residual stress distributions from diffraction-based lattice strain data, *Computer Methods in Applied Mechanics and Engineering*, vol. 265, pp. 120-135, 2013. [doi:10.1016/j.cma.2013.06.002](https://doi.org/10.1016/j.cma.2013.06.002)

Demir E., Roters F. and Raabe D., Bending of single crystal copper micro cantilever beams with cube orientation: Finite element model and experiments, *J.Mech. and Phy. of Sol.*, vol. 58, pp. 1599-1612, 2010. [doi:10.1016/j.jmps.2010.07.007](https://doi.org/10.1016/j.jmps.2010.07.007)

Demir E., Raabe D., Zaafarani N. and Zaeferrer S., Investigation of the indentation size effect through the measurement of the geometrically necessary dislocations beneath small indents of different depths using EBSD tomography, *Acta Mater.*, vol. 57, pp. 559-569, 2009. [doi:10.1016/j.actamat.2008.09.039](https://doi.org/10.1016/j.actamat.2008.09.039)

Demir E., Taylor-based model for micro-machining of single crystal fcc materials including frictional effects: Application to micro-milling process, *Int. J. of Mach. Tool. and Manuf.*, vol. 48, pp. 1592-1598, 2008. [doi:10.1016/j.msea.2010.01.004](https://doi.org/10.1016/j.msea.2010.01.004)

TECHNICAL SKILLS

Programming: Fortran, Matlab, Visual Basic
Applications: L^AT_EX, Microsoft Office, MSC Marc

LANGUAGE

- English (Advanced)
- German (Intermediate, B1)