Matthew Kasemer

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EDUCATION

Doctor of Philosopy 2018
Cornell University
Title: A Framework for Modeling Discrete Deformation Twinning in Hexagonal Crystals
Advisor: Prof. Paul Dawson

Master of Science 2015
Cornell University
Title: The Influence of Mechanical Constraints Introduced by β Annealed Microstructures on the Yield Strength and Ductility of Ti-6Al-4V
Advisor: Prof. Paul Dawson

Bachelor of Science 2012
Rochester Institute of Technology
Highest Honors, Honors Program

EXPERIENCE

Max-Planck-Institut für Eisenforschung 2018 – Present
Postdoctoral Researcher, Department of Microstructure Physics and Alloy Design
Project: Simulation of R-values of Aluminum Alloys
Supervisors: Prof. Dr. Dierk Raabe, Dr. Franz Roters

Cornell High Energy Synchrotron Source 2012 – 2017
Graduate Research Assistant
Project: Graduate theses
Committee: Prof. Paul Dawson, Prof. Matt Miller, Prof. Shefford Baker

Rochester Institute of Technology 2011 – 2012
Undergraduate Researcher, Mechanics Laboratory
Project: Laboratory Activities to Illustrate the Importance of Low Cycle Fatigue
Supervisors: Prof. Elizabeth DeBartolo, Prof. Stephen Boedo

NASA Glenn Research Center 2011 – 2012
Undergraduate Researcher, Mechanics and Life Prediction Branch
Project: Viscoelastoplastic Deformation and Damage Response of Titanium Alloy, Ti-6Al-4V, at Elevated Temperatures
Supervisor: Dr. Steven Arnold

PUBLICATIONS

PUBLISHED

[3] K. Chatterjee, M.P. Echlin, M. Kasemer, P.G. Callahan, T.M. Pollock, P. Dawson, "Prediction of Tensile Stiffness and Strength of Ti-6Al-4V using Instantiated Volume Elements and Crystal Plasticity," *Acta Materialia*, vol. 157, pp. 21–32, 2018.

[2] M. Kasemer, M.P. Echlin, J.C. Stinville, T.M. Pollock, and P. Dawson, "On Slip Initiation in Equiaxed α/β Ti-6Al-4V," *Acta Materialia*, vol. 136, pp. 288–302, 2017.

[1] M. Kasemer, R. Quey, and P. Dawson, "The Influence of Mechanical Constraints Introduced by β Annealed Microstructures on the Yield Strength and Ductility of Ti-6Al-4V," *Journal of the Mechanics and Physics of Solids*, vol. 103, pp. 179–198, 2017.

IN PREPARATION

[3] M. Kasemer and P. Dawson, "A Framework for Modeling Discrete Deformation Twinning in Hexagonal Crystals," In preparation, 2018.

[2] R. Quey, M. Kasemer, and P. Dawson, "Multiscale Polycrystals for the Finite Element Method: Generation and Meshing," In preparation, 2018.

[1] E. Zepeda-Alarcón, M. Kasemer, P. Dawson, and H.R. Wenk, "Texture Development in a Dual Phase Bridgmanite/Periclase Mineral Aggregate," In preparation, 2018.

CONFERENCES

CONFERENCE PRESENTATIONS

[2] M. Kasemer, R. Quey, D. Boyce and P. Dawson, "Investigating the Influence of Microstructural Features on the Yield Strength and Ductility of Ti-6Al-4V," at *International Workshop on Mechanistic Behaviour of HCP Alloys*, University of Oxford, Oxford, England, UK, March 2016.

[1] M. Kasemer, E. Wielewski, R. Quey, and P. Dawson, "Investigating the Influence of Microstructural Features on Strength and Ductility of β Annealed Ti-6Al-4V," at *3rd World Congress on Integrated Computational Materials Engineering*, Colorado Springs, Colorado, USA, June 2015.

CONFERENCE PROCEEDINGS

[2] S. Boedo, E. DeBartolo, and M. Kasemer, "Laboratory Activities to Illustrate the Importance of Low Cycle Fatigue," *2013 ASEE Annual Conference & Exposition*, Atlanta, Georgia, USA, June 2013.

[1] S. Arnold, B. Lerch, A. Saleeb, and M. Kasemer, "Viscoelastoplastic Deformation and Damage Response of Titanium Alloy, Ti-6Al-4V, at Elevated Temperatures," *International Symposium on Plasticity and its Current Applications*, Nassau, Bahamas, January 2013.

TEACHING EXPERIENCE

GRADUATE TEACHING ASSISTANT

MAE3280: Experimental and Applied Mechanics of Structures — Spring 2018
Cornell University, Prof. Matt Miller
Recipient, Sibley School Excellence in Graduate Teaching Assistance Prize

WORKSHOPS

InSitμ Workshop — March 2018
Sibley School of Mechanical and Aerospace Engineering, Cornell University

Invited Speaker — April 2017
University of California, Santa Barbara

Modelling the Micromechanics of Polycrystalline Materials Workshop — April 2016
University of Glasgow

InSitμ Workshop — June 2014
Cornell High Energy Synchrotron Source, Cornell University

STUDENT MENTORSHIP

Kayleigh Nelson — Fall 2016
University of Glasgow
Doctoral student of Prof. Euan Wielewski

Eloisa Zepeda-Alarcón — Spring 2015
University of California, Berkeley
Doctoral student of Prof. Hans-Rudolf Wenk

Joshua Ren — Spring 2015
Cornell University
Mechanical engineering undergraduate student

GRANTS & AWARDS

Sibley School Excellence in Graduate Teaching Assistance Prize	Spring 2018
Cornell University International Graduate Research Grant	Spring 2016
Cornell University Conference Grant	Spring 2016
Cornell University Conference Grant	Spring 2015

PROFESSIONAL MEMBERSHIPS

The Materials, Metals, and Minerals Society
American Society of Mechanical Engineers
Tau Beta Pi

OTHER WORK EXPERIENCE

LORD Corporation — 2009 – 2010
Engineering Design Intern