Youngung **Jeong**

Associate professor

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Education

POSTECH, Graduate Institute of Ferrous Technology — *Pohang, Republic of Korea*
PhD — *Mar. 2010 - Feb. 2014*

POSTECH, Graduate Institute of Ferrous Technology — *Pohang, Republic of Korea*
MS — *Mar. 2008 - Feb. 2010*

Hanyang University, Materials Science and Engineering — *Seoul, Republic of Korea*
BS — *Mar. 2001 - Feb. 2008*

Experience

Changwon National University — *Changwon, Republic of Korea*
Associate professor — *April. 2021, - present*

Los Alamos National Laboratory — *Los Alamos, NM, USA*
Guest Scientist — *Feb. 2022, - Feb. 2024*

Changwon National University — *Changwon, Republic of Korea*
Assistant professor — *Mar. 2017, - Mar. 2021*

POSTECH — *Pohang, Republic of Korea*
Post Doctorate Researcher — *Dec. 2016, - Feb. 2017*

Clemson University — *Greenville, SC, USA*
Research Scientist — *Mar. 2016, - Nov. 2016*

National Institute of Standards and Technology — *Gaithersburg, MD, USA*
Post Doctorate Researcher — *Mar. 2014, - Feb. 2016*

Los Alamos National Laboratory — *Los Alamos, NM, USA*
Research Affiliate — *Apr. 2012, - Sep. 2012*

National Institute of Standards and Technology — *Gaithersburg, MD, USA*
Guest Researcher — *June. 2011, - Dec. 2011*

Skills

Programming	Python, Fortran, Bash script, C/C++, LaTeX, Matlab
Languages	Korean, English
Experimental Mechanics	Uniaxial tension, shear, hydraulic bulge test, biaxial tests using cruciform piece and Marciniak
Digital Image Correlation (DIC)	VIC3D, DICE
Diffraction experiments	Pole figure, crystallographic texture, phase fraction, residual stress measurements
Computer skills	Linux, Git, Parallel computation
Constitutive modelling	Macro-mechanical description on anisotropic metals using anisotropic yield functions
Crystal plasticity	Visco-plastic / Elasto-visco-plastic self-consistent crystal plasticity models

Journal Articles

Deformation mechanisms of Mg-ZEWK2000 alloy at RT and 225°C studied by slip trace analysis and interpreted via crystal plasticity simulations — *submitted*

José Victoria-Hernández, Y. Jeong*, Dietmar Letzig

Thermal ratcheting of uranium simulated by a thermo-elasto-visco-plastic self-consistent polycrystal model — *Accepted*

Y. Jeong*, C. N. Tomé — *Journal of Nuclear Materials*

Cermet design through modeling the thermal cyclic stability via a Temperature-dependent, Incremental Elasto-Viscoplastic, Self-Consistent (TE-VPSC) formulation — *submitted*

G. R. Peterson, Y. Jeong, C. N. Tomé, M. D. Sangid*

Crystal plasticity finite element simulations on extruded Mg-10Gd rod with texture gradient — *submitted*

Jaeseong Lee, Dirk Steglich, Y. Jeong*

Direct application of elasto-viscoplastic self-consistent crystal plasticity model to U-draw bending and springback of dual-phase high strength steel — *submitted*

B. Jeon, S.-Y. Lee, J. Lee, Y. Jeong*

Temperature-dependent behavior of CP-Ti interpreted via self-consistent crystal plasticity simulation — *Materials Science and Engineering: A*

B. Jeon, M.-S. Lee, T.-S. Jun, Y. Jeong* — *Vol. 890, 149504, 2024*

Finite element analysis using elasto-visco-plastic self-consistent polycrystal model for E-form Mg sheet subjected to bending — *Journal of Magnesium and Alloys*

B. Jeon, M.-S. Kim, S. Choi, Y. Jeong* — *Vol. 11(4), p1393-1407, 2023*

A crystal plasticity finite element analysis on the effect of prestrain on springback — *International Journal of Mechanical Sciences*

M. Joo, M.-S. Wi, S.-Y. Yoon, S.-Y. Lee, F. Barlat, C N. Tomé, B. Jeon, Y. Jeong* — *Vol. 237, 107796, 2023*

Reconstructing orientation data from the images of IPF maps and ODF sections extracted from the literature: A data-collection method for machine learning — *International Journal of Plasticity*

Lalit Kauschik, Ki-Seong Park, Jeong-Gyun Kim, Jae-Seong Lee, Youngung Jeong, Shi-Hoon Choi* — *Vol. 159, 103467, 2022*

Prediction and validation of stress triaxiality assisted by elasto-visco-plastic polycrystal model — *Korean Journal of Metals and Materials*

J. Park, Y. Jeong* — *Vol. 60 (8), 607-618, 2022*

In-situ neutron diffraction study of lattice deformation behaviour of commercially pure titanium at cryogenic temperature — *Scientific Reports*

M.S. Lee, T. Kawasaki, T. Yamashita, S. Harjo, Y.T. Hyun, Y. Jeong, T. S. Jun* — *Vol. 12 (1), 1-10, 2022*

Finite element analysis using an incremental elasto-visco-plastic self-consistent polycrystal model: FE simulations on Zr and low-carbon steel subjected to bending, stress-relaxation, and unloading — *International Journal of Plasticity*

Y. Jeong*, B. Jeon, C N. Tomé — *Vol. 147, 103110, 2021*

An efficient elasto-visco-plastic self-consistent formulation: Application to steel subjected to loading path changes — *International Journal of Plasticity*

Y. Jeong*, C. N. Tomé — *Vol. 135, 102812, 2020*

Modelling-assisted description of anisotropic edge failure in magnesium sheet alloy under mixed-mode loading — *International Journal of Mechanical Sciences*

Y. Jeong*, D. Steglich — *Vol. 181, 105680, 2020*

Extension of the VPSC model to account for elasto-visco-plastic behavior using a perturbed viscoplastic approach
Y. Jeong*, C. N. Tomé
Modelling and Simulation in Materials Science and Engineering
Vol. 27(8) 085013, 2019

Superior tensile fracture strength of hot isostatically pressed TiC–steel metallic composite fabricated by a novel infiltration
S. J. Park, Y. Jeong, C. W. Kim, J. H. Lee, S. C. Cho, S. B. Lee, S. K. Lee, D. H. Kim, H. U. Hong*
Materials Science and Engineering: A
Vol. 764(9), 2019

Enhancement in viscoplastic self-consistent FLD prediction model and its application for austenitic and ferritic stainless steels
Y. Jeong*, Timo Manninen
Metals and Materials International
Vol. 25(6) pp1548-1563, 2019

A crystal plasticity model for describing the anisotropic hardening behavior of steel sheets during strain-path changes
H. Kim, F Barlat, Y. Lee, S. Zaman, CS Lee, Y. Jeong*
International Journal of Plasticity
Vol. 111 p85-106, 2018

A comparative study between micro- and macro-mechanical constitutive models developed for complex loading scenarios
Y. Jeong*, F. Barlat, C. N. Tomé, W. Wen
International Journal of Plasticity
Vol. 93 p212-228, 2017

Uncertainty in flow stress measurements using X-ray diffraction for sheet metals subjected to large plastic deformations
Y. Jeong*, T. Gnäupel-Herold, M. Iadicola, A. Creuziger
Journal of Applied Crystallography
Vol. 49 p1991-2004, 2016

Texture-based forming limit prediction for Mg sheet alloys ZE10 and AZ31
D. Steglich, Y. Jeong*
International Journal of Mechanical Sciences
Vol. 117 p102-114, 2016

Forming limit prediction using a self-consistent crystal plasticity framework: a case study for BCC fiber textures
Y. Jeong*, M.-S. Pham, M. Iadicola, A. Creuziger, T. Foecke
Modelling and Simulation in Materials Science and Engineering
Vol. 24(5), 055002 (21 pp), 2016

Multiaxial constitutive behavior of an interstitial-free steel: measurements through X-ray and digital image correlation
Y. Jeong*, M. Iadicola, T. Gnäupel-Herold, A. Creuziger
Acta Materialia
Vol. 112 p84-93, 2016

Effect of martensitic phase transformation on the behavior of 304 austenitic stainless steel under tension
H. Wang*, Y. Jeong, B. Clausen, Y. Liu, R. J. McCabe, F. Barlat, C. N. Tomé
Materials Science and Engineering A
Vol. 649 p174-183, 2016

Evaluation of biaxial flow stress based on Elasto-Viscoplastic Self-Consistent analysis of X-ray Diffraction Measurements
Y. Jeong, T. Gnäupel-Herold, F. Barlat, M. Iadicola, A. Creuziger, M.-G. Lee*
International Journal of Plasticity
Vol. 66 p103-118, 2015

Application of crystal plasticity to an austenitic stainless steel
Y. Jeong*, F. Barlat, M.-G. Lee
Modelling and Simulation in Materials Science and Engineering
Vol. 20 p024009, 2012

Biaxial Deformation Behavior of AZ31 Magnesium Alloy: Crystal-Plasticity-Based Prediction and Experimental Validation
D. Steglich*, Y. Jeong, M. O. Andar, T. Kuwabara
International Journal of Solids and Structure
Vol. 49(25) p3551-3561, 2012

Conference proceedings

Thermal Ratcheting of Uranium Simulated with a Thermo-Elasto-Visco-Plastic Polycrystal Model

Carlos N. Tome*, Y. Jeong

Proceedings of the 14th International Conference on the Technology of Plasticity - Current Trends in the Technology of Plasticity

Interpretation of the Unloading Non-linearity in Dual-Phase 980 Steel Using an Elasto-Visco-Plastic Self-consistent Polycrystal Model

B. Jeon, Y. Jeong*

Proceedings of the 14th International Conference on the Technology of Plasticity - Current Trends in the Technology of Plasticity

Formability predictions and measurement of 316L stainless steel using self-consistent crystal plasticity

Y. Jeong*, Timo Manninen

Journal of Physics: Conference Series
Vol. 150673, 2018

Forming limits of dual phase steels using crystal plasticity in conjunction with MK approach

Y. Jeong*, S. Panich

Procedia Manufacturing
Vol. 15, 2018

Texture-based formability prediction for Mg wrought alloys ZE10 and AZ31

D. Steglich Y. Jeong

AIP Conference Proceedings
Vol. 1896, 020001, 2017

Advances in Constitutive Modeling of Plasticity for Forming Applications

F. Barlat, Y. Jeong, J. Ha, C. N. Tomé, M.-G. Lee, W. Wen

Key Engineering Materials
Vol. 725, p3-14, 2017

Validation of Homogeneous Anisotropic Hardening Approach Based on Crystal Plasticity

Y. Jeong, F. Barlat, C. N. Tomé, W. Wen

AIP Conference Proceedings
Vol. 1769, 160001, 2016

Forming limit predictions using a self-consistent crystal plasticity model: a parametric study

Y. Jeong, M.-S. Pham, M. Iadicola, A. Creuziger

Key Engineering Materials
Vol. 651 p193-198, 2015

Microstructural and crystallographic aspects of yield surface evolution

Y. Jeong, F. Barlat, M.-G. Lee

Materials Science Forum
Vol. 702 p224-228, 2011

Crystal Plasticity Predictions of Forward-Reverse Simple Shear Flow Stress

Y. Jeong, F. Barlat, M.-G. Lee

Materials Science Forum
Vol. 702 p204-207, 2011

Synergestic Activities

2018- **Editorial board,** Korean J. Met. Mater. *S.Korea*
Review services, Int. J. of Plast., Acta Materialia, MSE:A, Sci. Report, JALCOM, MMI, JOM, MMTA, MST, IJFO, ...