Exponent®
Engineering & Scientific Consulting

Julie Soderlind, Ph.D.

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Professional Profile

Dr. Soderlind is a materials scientist with expertise in metallurgy and microstructure evolution with an emphasis on materials processing-microstructure-property relationships. She has extensive experience in various characterization techniques including metallography, optical microscopy, scanning and transmission electron microscopy (SEM and TEM), and both mechanical and corrosion characterization techniques.

Prior to joining Exponent, Dr. Soderlind earned her Ph.D at University of California, Davis where she investigated spark plasma sintering and laser powder bed fusion as alternative processing methods for Mg alloy WE43. As part of this work, she gained expertise in phase identification by electron diffraction and chemical analysis using energy dispersive spectroscopy (EDS) as well as microhardness, tensile and compression testing, fracture surface analysis, corrosion surface characterization and immersion experiments.

Dr. Soderlind was awarded the UC-National Lab In-Residence Graduate Fellowship, allowing her to spend the last three years of her Ph.D at Lawrence Livermore National Lab. Dr. Soderlind also spent a year of her Ph.D as an academic guest at ETH Zürich. Prior to her Ph.D, she did her undergraduate work at Washington State University where she investigated laser surface treatments of Ti alloys for improved wear resistance.

Academic Credentials & Professional Honors

Ph.D., Materials Science and Engineering, University of California, Davis, 2020

B.S., Materials Science and Engineering, Washington State University, 2013

UC-National Lab In-Residence Graduate Fellowship 2017-2020

Licenses and Certifications

NACE Certified Coating Inspector (CA)

Publications

Soderlind J, Cihova M, Schäublin R, Risbud SH, Löffler JF. Towards refining microstructures of biodegradable magnesium alloy WE43 by spark plasma sintering. Acta Biomaterialia 2019 98, 67-80.

Cahill J, Du Frane W, Sio C, King G, Soderlind J, R. Lu, Worsley M, Kuntz J, Transformation of boron nitride from cubic to hexagonal under 1-atm helium, Diamond and Related Materials, Volume 109, 2020,

108078.

Sahasrabudhe H, Soderlind J, Bandyopadhyay A. Laser processing of in situ TiN/Ti composite coating on titanium. Journal of the Mechanical Behavior of Biomedical Materials 53, 239-249, 2015.

Balla VK, Soderlind J, Bose S, Bandyopadhyay A Microstructure, mechanical and wear properties of laser surface melted Ti6Al4V alloy. Journal of the Mechanical Behavior of Biomedical Materials 2014 32, 335-344.

Presentations

Soderlind J, Cihova M, Schäublin R, Risbud SH, Löffler JF. Densification and microstructure of spark-plasma sintered WE43 powder. Biometal: Symposium on Biodegradable Metals 2018 Oxford, UK

Soderlind J, Calta NP, Martin AA, Depond PJ, Wang J, Vrancken B, Schäublin RE, Thampy V, Fong AY, Weker JN, Stone KH, CJ Tassone, Toney MF, Van Buuren A, Löffler JF, Risbud SH, Matthews M.

Parametric study of in situ melt pool dynamics and microstructure of WE43 processed by laser powder bed fusion. Solid Freeform Fabrication 2019 Austin, TX

Soderlind J, Calta NP, Martin AA, Depond PJ, Wang J, Vrancken B, Schäublin RE, Thampy V, Fong AY, Weker JN, Stone KH, CJ Tassone, Toney MF, Van Buuren A, Löffler JF, Risbud SH, Matthews M.

Parametric study of in situ melt pool dynamics and microstructure of WE43 processed by laser powder bed fusion. Materials Science & Technology 2019 Portland, OR

Soderlind J, Schäublin R, Risbud SH, Löffler JF. In-vitro corrosion and mechanical performance of Mg alloy WE43 processed by spark plasma sintering. TMS Annual Meeting 2020 San Diego, CA

Additional Education & Training

Coatings Inspector Level 1