

Milwaukee Chapter

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How Additive Manufacturing Changes Material Property Considerations

Peter Kootstra, Markforged

Event Sponsor:

**Date:** Tuesday | January 9, 2018
Time: 5:30 - Social | 6:00 - Dinner | 7:00 - Presentation**Location:** Klemmers Banquet Center
10401 W. Oklahoma Ave., Milwaukee Wisconsin 53227**Cost:** **\$30** Members | **\$35** Nonmembers | **\$15** Retirees and Life Members
Free to Students, Members between jobs, Gold sustaining member reps
and Meeting sponsor (2 attendees)**RSVP by:** Friday | January 5
Register online at asm.milwaukee.org or contact Jim Schwaegler
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Start 2018 by joining us! **Peter Kootstra** is an Application Engineer for Markforged based in Boston, MA. Markforged is the industry innovator for fiber inlaid composites and their new metal printing technology. Prior to this role, he was an Application Engineer for Renishaw in their AM division. He has gained accreditation as a Certified SOLIDWORKS Professional and Technician as well as technical certifications for many industrial 3D



printers on the market today. Peter is a 2015 graduate of the Milwaukee School of Engineering with his B.S. in Mechanical Engineering where he was a member of the Underwater Robotics team and wrestling team.

Peter's main objective is providing engineering support and educational content to engineers about additive technologies. The purpose is to implement AM into the traditional manufacturing landscape through new applications that often go overlooked. The AM industry is misunderstood when engineers qualify what the ideal use for 3D printing is. To help change this, he is conveying the proper use of AM with considerations like materials, load conditions, and design parameters.

Material properties are often a large consideration when it comes to part design. This is the basis for FEA software that allows companies to validate a design through simulation prior to ever building a part. The downside is that FEA software relies heavily on the assumption of a homogenous part throughout. With the layering process and infill patterns that every additive process uses, parts never perform in an isotropic manner meaning that a different set of design considerations need to be analyzed. This presentation will take a look at the proper set of design criteria for part design and explain how that correlates to materials properties.