



3:00-3:50pm, Friday, March 18<sup>th</sup>, 2016  
Frank H. Walk Design Presentation Room

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The growth rate of 3D printing market from 2011 onward is evaluated to be over 20% each year, fastest of any R&D and industrial manufacturing sector. On demand manufacturing, customization of every manufactured part, cloud-based global supply chain, and use of the same machine to print a variety of parts are some of the strengths of this manufacturing technique. This presentation is focused on two aspects of additive manufacturing (AM) challenges: manufacturability and security. First, there are several useful compositions of composite materials that cannot be manufactured by traditional methods. Examples of such composite materials will be discussed with the AM techniques that have successfully manufactured them. Second, a new paradigm is proposed to insert security features in AM techniques through innovative CAD designs. Examples of CAD design features that can only be printed with a specific setting are discussed for use as security features.