

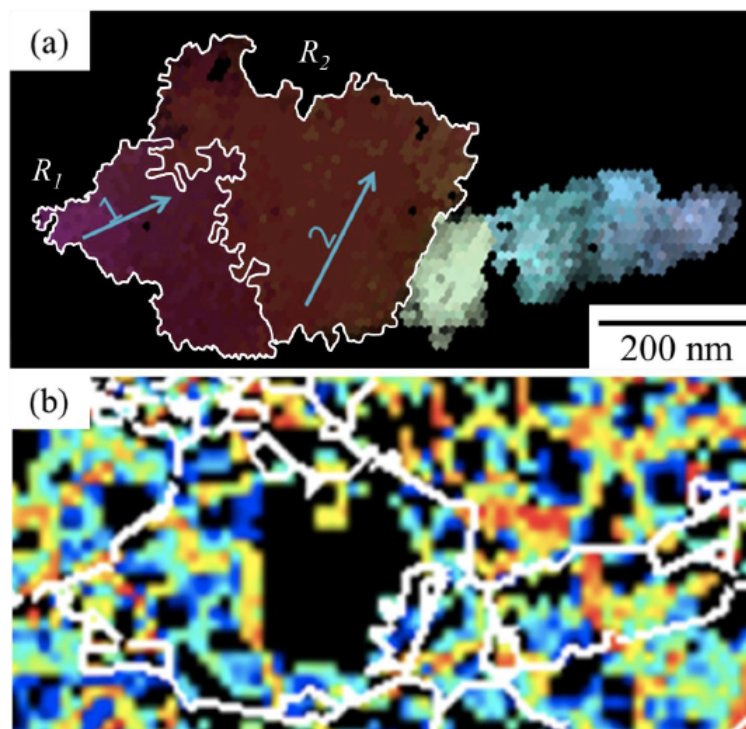


## Optics and Photonics Group Lunchtime Seminar

# “Advances in characterization and modeling of advanced non-ferrous structural alloys”

Pete Collins

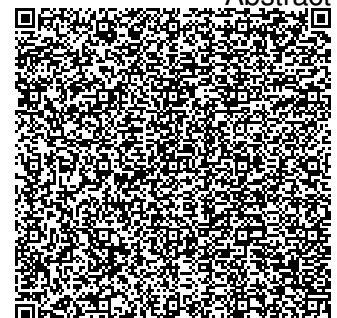
*College of Engineering, Iowa State University*



12:00pm Tuesday 23rd May 2017  
203 Tower Building  
All Welcome

[http://optics.nottingham.ac.uk/wiki/Talks\\_2017](http://optics.nottingham.ac.uk/wiki/Talks_2017)

Abstract



# “Advances in characterization and modeling of advanced non-ferrous structural alloys”

Pete Collins

12:00pm Tuesday 23rd May 2017

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All Welcome

Non-ferrous structural alloys, such as those based upon titanium, are seeing increased use in next-generation aircraft. As new alloys and new manufacturing processes are explored, including electron beam additive manufacturing and equal channel angular extrusion, it is necessary to develop the scientific understanding of their chemistry-processing-structure-property relationships. This talk will discuss how new characterization and modeling techniques may be integrated to accelerate the insertion of these new materials into products. Included will be details of large-scale additive manufacturing, including the electron beam additive manufacturing approach that can be used to build components that are more than 100kg. It will also present “Precession Electron Diffraction”, an transmission electron microscopy based technique that can provide maps of the local crystal orientation with around 1nm resolution.