國立清華大學
NATIONAL TSING HUA UNIVERSITY

Colloquium

Department of Engineering and System Science, Institute of Nuclear Engineering and Science, National Tsing Hua University

Utilising Multiscale Mechanical Testing for Extreme Materials Design

中山大學機械與機電工程學系

李伯軒助理教授

Prof. Bo-Shiuan Li

We are currently exploring additive manufacturing of metallic alloys via selective laser melting (SolidMEN-300™). This allows us to manufacture samples of complicated geometry directly from fine metallic powder. Multiscale mechanical testing techniques (indentation mapping + EBSD/EDX) are used to evaluate the microstructure-to-property relationship of the as-printed alloys, and locate the region-of-interest to extract more mechanical properties (micro-cantilever bending or micro-pillar compression). This is crucial for optimising processing parameters, e.g. laser patterning strategy, to prevent formation of structural weaker features. Our ultimately goal is for the additive-manufactured alloy to exhibit comparable properties to their conventional-made counterparts. We are currently interested in refractory HEAs and tungsten-based alloys used for nuclear fusion

15:30-17:20, Wednesday, Dec.21st, 2022
NE69 ESS Building, NTHU
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Biography:

- **Assistant Professor, Dept. of Mech. & Electromech. Engr., NSYSU (Aug 2022~present)**
- **Principle Engineer at NPPII, TSMC (Dec 2020~May 2022)**
- **Postdoctoral Researcher, Department of Materials, University of Oxford (Jan 2018~Nov 2020)**
- **DPhil in Materials, University of Oxford, UK, 2017**
- **MSc in Nuclear Engineering, University of South Carolina, USA, 2013**
- **BS in Engineering & System Science, NTHU, TW, 2009**

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