

## Dr Yu Lung Chiu BE, PhD

Senior Lecturer

**[School of Metallurgy and Materials \(/schools/metallurgy-materials/index.aspx\)](/schools/metallurgy-materials/index.aspx)**

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### About

Dr Yu Lung Chiu is a lecturer in School of Metallurgy and Materials. He has broad research interests in electron microscopy and physical metallurgy.

### Qualifications

PhD in Materials Science, University of Hong Kong, China, 1999  
BE in Metallurgy, Northeastern University, Shenyang China, 1994

### Biography

Dr. Yu Lung Chiu studied Metallurgy for his BE degree at Northeastern University (Shenyang, China) and went on to study for a PhD in Materials Science at the University of Hong Kong (China). He spent a few years doing research and teaching at universities and research institutes in Hong Kong, France, Switzerland and New Zealand before his current employment at the University of Birmingham.

### Teaching

Undergraduate Level:

- Microscopy and Analysis (Y2 Biomaterials)
- Materials Characterisation (Y3 Metallurgy and Materials)

Postgraduate Level:

- Electron Microscopy (MRes, EngD)
- Materials Science (MSc, Physics PTNR)

### Postgraduate supervision

Dr Yu Lung Chiu is interested in supervising doctoral research students in the following two areas:

- Electron Microscopy
- Physical Metallurgy

If you are interested in studying in these areas please contact Dr Chiu using the contact details above.

### Research

#### RESEARCH THEMES

Electron Microscopy

- Microstructure characterisation of advanced structural materials;
- Microanalysis and phase determination
- In-situ electron microscopy studies

Physical Metallurgy

- Plastic deformation mechanisms
- Light alloys
- Strengthening mechanisms

More details can be found from the Electron Microscopy Group website at <http://bhamem.wordpress.com/>

#### RESEARCH ACTIVITY

- Magnesium alloys for bio-medical applications
- Precipitation hardening in magnesium alloys
- Microstructure characterisation of pipeline steels

- Microstructure characterisation of inertial friction weld in nickel-base superalloy
- Microstructure characterisation of linear friction welded titanium alloys
- Microstructure and nanomechanical properties of copper nanowires
- Electron tomography
- Nanomechanical property assessment
- Severe plastic deformation of light alloys
- Electron diffraction and nanomechanical properties of amorphous materials

## Other activities

- Member of Institute of Physics
- Committee member of Electron Microscopy and Analysis Group, IoP.
- Committee member of Midland Microanalysis Users Group.

## Publications

R. Ding, C. Chung, Y.L. Chiu, P. Lyon, *Effect of ECAP on microstructure and mechanical properties of ZE41 magnesium alloy*, Materials Science and Engineering A, 527, 3777 – 3784, (2010).

Y.J. Huang, Y.L. Chiu, J. Shen, J. Chen, J.F. Sun, *Cooling rate effect of nanomechanical response for a Ti-based bulk metallic glass*, Journal of Non-Crystalline Solids, 356, 966 – 970, (2010).

Y.J. Huang, Y.L. Chiu, J. Shen, J. Chen, J.F. Sun, *Indentation creep of a Ti-based metallic glass*, Journal of Materials Research, 24, 993 – 997. (2010)

Y.J. Huang, Y.L. Chiu, J. Shen, J. Chen, J.F. Sun, *Mechanical performance of metallic glasses during nanoscratch tests*, Intermetallics, 18, 1056-1061, (2010)

