

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)

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