



Kick-off meeting

Barcelona, 3-5 March 2014

University of Birmingham - overview



Facts about Birmingham:

- ***Population – 1million***
- ***International airport***
- ***163km from London***

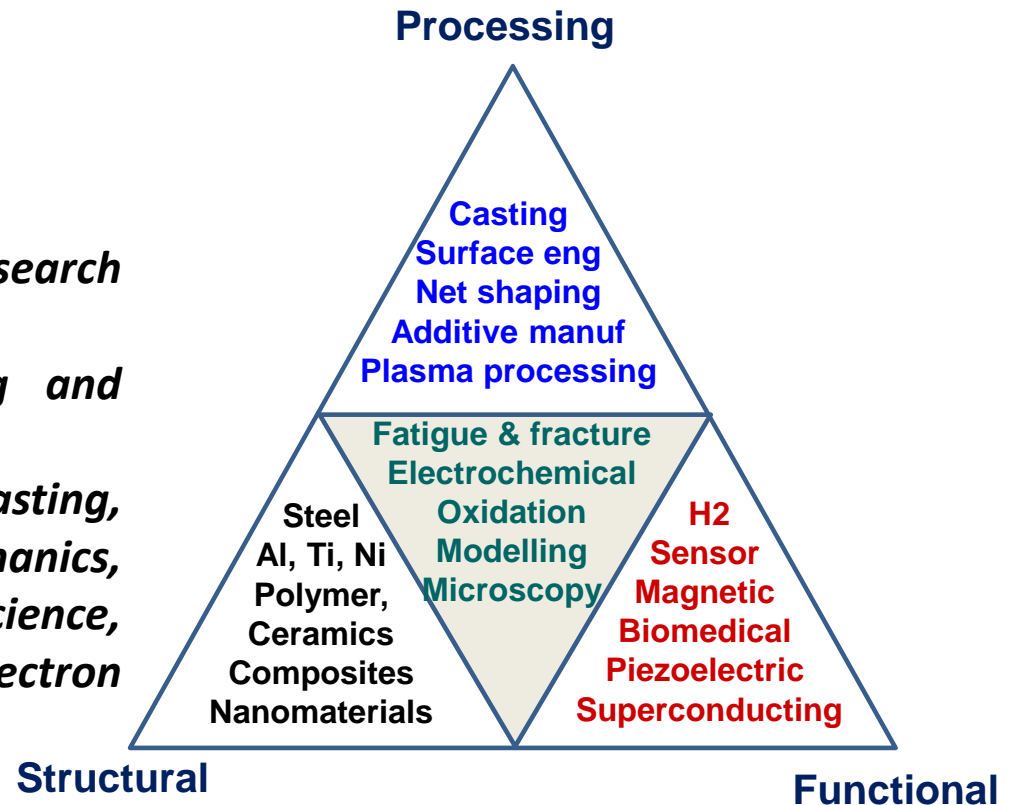
- ***Total number of student: 28000***
- ***Undergraduate: 20500***
- ***Postgraduate: 7500***
- ***Staff number: 6000***
- ***Annual income: £462M***
- ***QS World University Ranking: 62nd***
- ***Founder member of Universitas 21***

School of Metallurgy and Materials - overview



- *Academic Staff: 25*
- *Admin/technicians/researchers:80*
- *Undergraduate (6 programmes):170*
- *Postgraduate (PhD, EngD, MRes) :195*

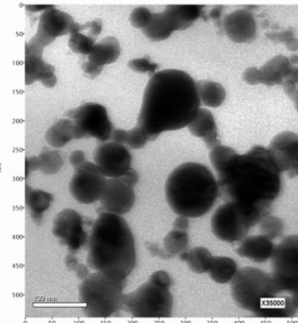
- *One of the top 5 Materials Research Departments in UK.*
- *World-wide reputation on Processing and Characterisation of Advanced Materials.*
- *Specialised in Powder Processing, Casting, Surface Engineering, Fracture mechanics, Polymer Engineering, Corrosion Science, Physical Metallurgy and Electron Microscopy.*



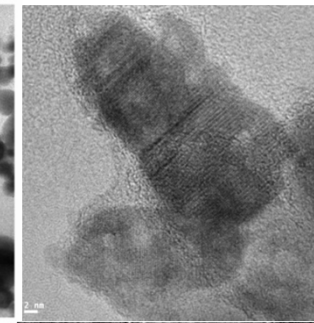
Field of expertise – Dr Isaac Chang

- **Research Areas :**
 - *Synthesis of nanostructured materials by electrical arc discharge, mechanical alloying and vapour transport processes. (eg nanoparticles, nanotubes, graphene, nanocomposites etc..)*
 - *Netshape manufacturing by powder processing and hot embossing routes. (eg microcomponents, micropatterns, bimetallic components)*
 - *Upscaling of nanoparticle synthesis from laboratory scale (<10g/day) to production scale (>1kg/day).*
- **Teaching Activities:**
 - *Head of Education in charge of all undergraduate taught courses.*
 - *1st year Modules on Phase Diagrams and Materials Selection.*
 - *3rd year Modules on Design for Manufacture and Powder Metallurgy.*
 - *M.Res module on Thermal Analysis for Materials Characterisation.*
- **Other Activities:**
 - *Founder and director of University spinout company known as Metal Nanopowders Limited.*
 - *Editor of textbook (Advances in Powder Metallurgy) and Powder Metallurgy journal .*

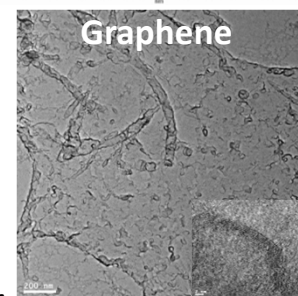
Cu ($D_{50} = 55\text{nm}$)



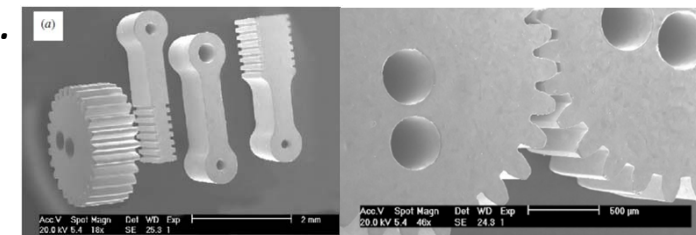
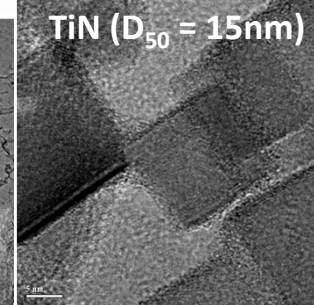
ZnO ($D_{50} = 17\text{nm}$)



Graphene



TiN ($D_{50} = 15\text{nm}$)



Stainless steel microcomponents

Role in the project

- *Review course content and manuals.*
- *Indentificaion of education gaps and key players for spin-out creation.*
- *Delivery of introductory lectures.*
- *Advise on vocational courses.*
- *Initiate new projects with other partners.*