

Sustainable Regions Nanotechnology Project

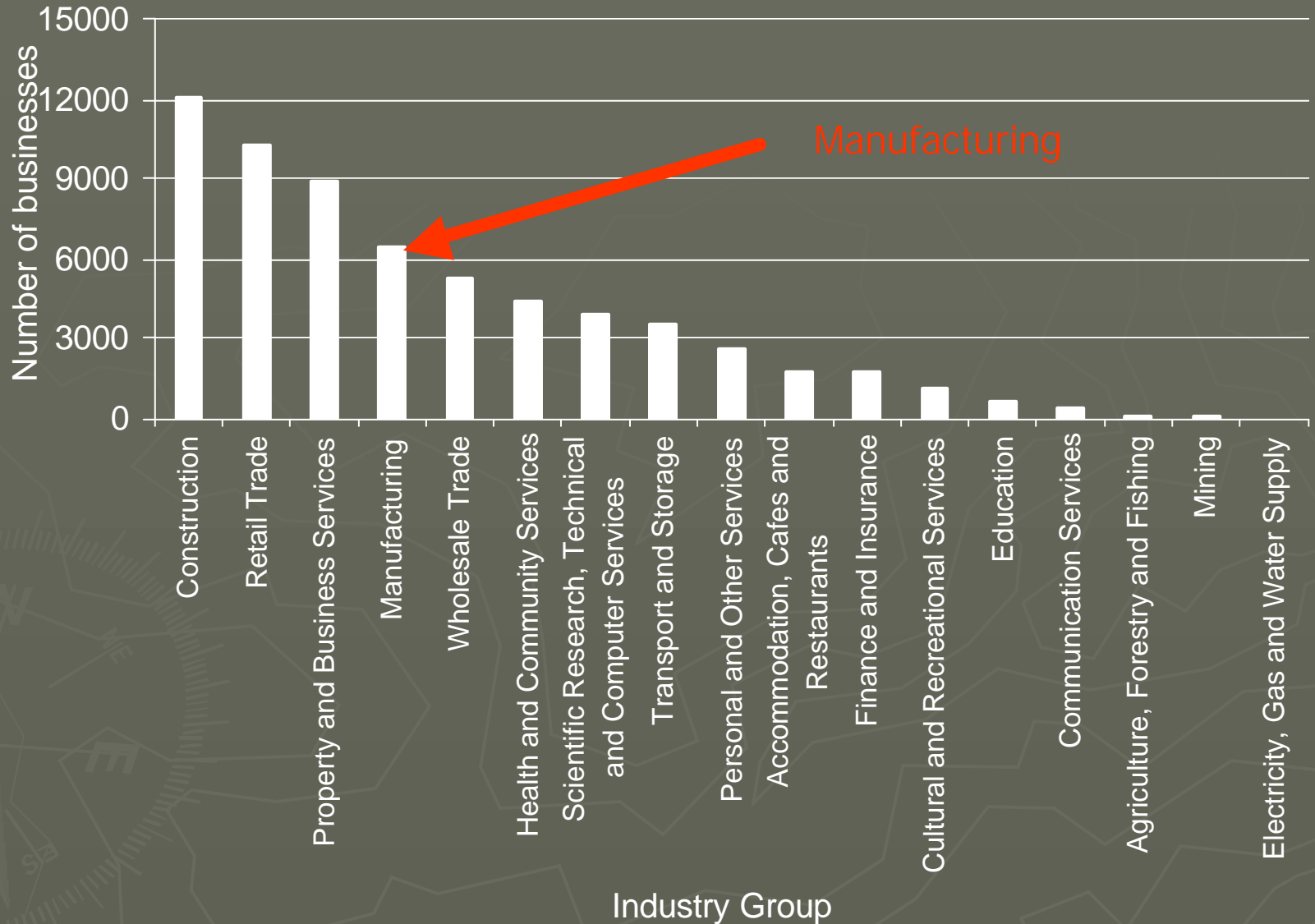
Michael Wilson

Lu Papi

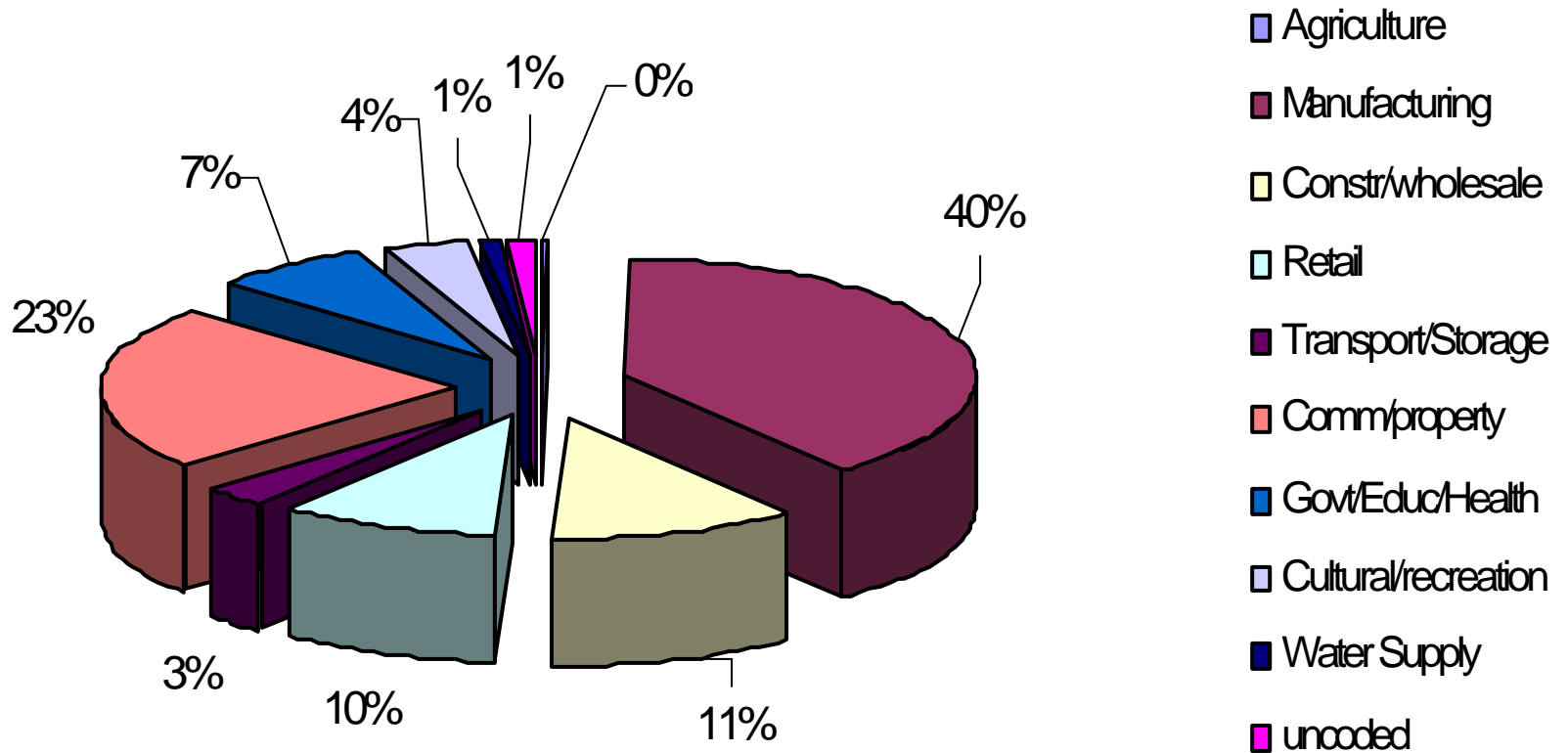
Bob Creelman

Kim Leever

Greater Western Sydney Businesses



Campbelltown Area



Nanotechnology

- ? Building industries from understanding manufacturing at the atomic level
- ? Materials
- ? Biomimetrics
- ? Electronics

Sustainability Grant

- ? 250K for industry liaison and awareness
- ? ARC funding for fundamental research
- ? Leads to industry link and industry funding

Developments

? Nanotechnology Network group

Jan Temple, Kim Leever

? Research group

? Clients

Nanotechnology Network

- ? First Meeting
- ? Next meeting 5.00pm 11 November 2003,
Conference Room 5, Building 22,
Campbelltown Campus with guest speaker
new Professor of Nanotechnology Bill Price

Research group

Prof Mick Wilson----- Prof Bill Price

Dr Bob Creelman– funded by grant

Dr Kamali Kannangara

Dr Gary Dennis

Dr Andrew Shalliker

Dr Adrian Milev– ARC funded

Dr Jimmy Hu– ARC funded

Dr Alan McCutcheon- ARC funded

One hons student, 3PhD students, one starting,

Geosci Australia, Qld forestry, Quinphos, NSW Agric

Initiatives

- ? ARC Centre of Excellence
- ? UWS Regional Post doc funds
- ? Two ARC grant submissions
- ? Two ARC equipment submissions
- ? Kirk funding
- ? Romar engineering
- ? Advanced Metal Products

Research projects

- ? Carbon nanotubes
- ? Nanocoated apatite
- ? Nanotubular aluminosilicates
- ? Nanocoated fertilisers (Quinphos)
- ? Nanodispersed clays (Kirk)
- ? Coated spun aluminium components (Clapham Metal Spinners)
- ? Water Treatment (Advanced Metal Products)

Kirk

- ? Development of a Cost-Effective Organic-Inorganic Nanocomposite for High Quality Gravure Printing

Kirk

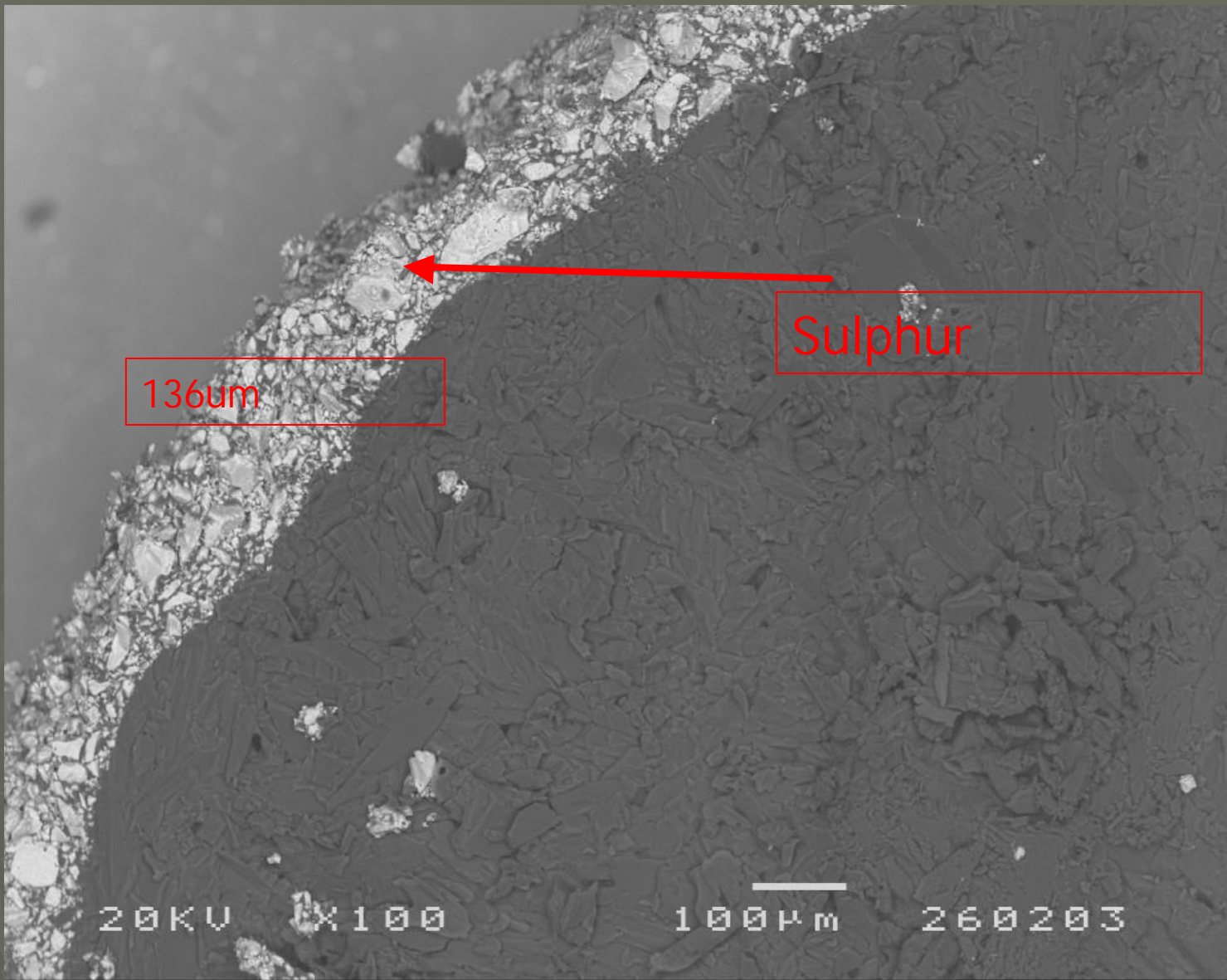
- ? The downsides associated with the traditional gravure process are,
- ? Copper-based cylinders are weighty and therefore expensive to transport;
- ? Electrolytic plating requires the copper and chrome to be in solution. Soluble copper and chrome are an environmental hazard.
- ? Cyanides used in the copper and chrome plating procedure for cylinders are an environmental hazards
- ? Conventional processing requires the proper disposal of chemical wastes, and this add a cost impost onto the process.
- ? The copper-based cylinders are restricted to electromechanical engraving only;
- ? The cost of gravure printing is expensive and therefore many resort to less expensive forms of printing.
- ? This project aims to develop an organic-inorganic nanocomposite material to replace the copper plating and chrome-coating on metallic and non-metallic substrates.

Methods

- ? XRD clay particles –cards
- ? Organics- polymerise

Quinphos

- ? Slow release fertilisers
- ? Sulphur on fertiliser granules via polydispersing
- ? Sulphur source in Australia
- ? Type of sulphur



Romar Engineering

- ? Design of a Disc Filter for recovery of wine from lees
- ? Development of materials suited to food hygiene standards.
- ? Development of other plastic and plastic based components for the wine and food industry
- ? Investigations into sterile surfaces on components used in the food and beverage industries.

Clapham Metal spinners

- ? Sprays on aluminium shapes
- ? Investigate reflective coats on spun products for lighting. Temperature resistant reflective surfaces

Advanced Metal Products

- ? Water Treatment
- ? Development of small water treatment plants to post-prototype stage.
- ? Application studies in the domestic water market

Problems

