



Future Opportunities in Manufacturing

CSIRO manufacturing research

Danielle Kennedy | Director AIM Future Science Platform

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ACTIVE INTEGRATED MATTER | MANUFACTURING

www.csiro.au

Materials, Products and Manufacturing Matter

High-value products &
materials manufacturing
matter



Presents a
growth
opportunity for
Australia



Manufacturing

Today

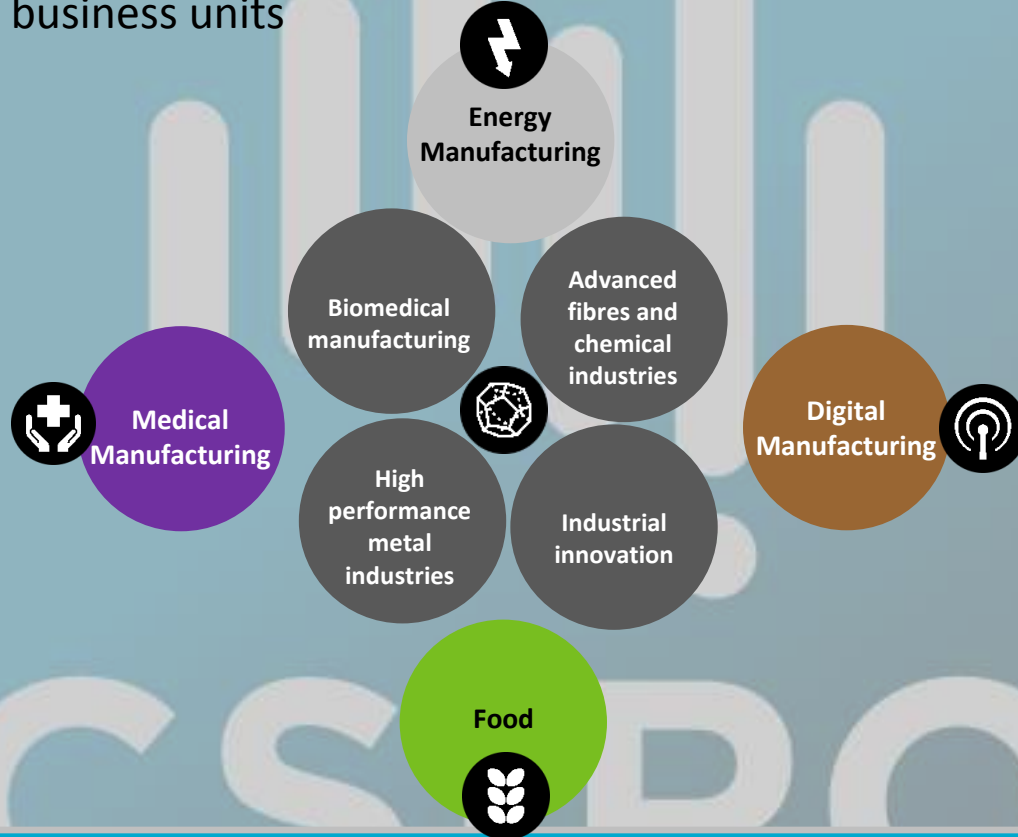


2040



CSIRO Research Manufacturing+

Spans multiple business units



Advanced Materials



Advanced Processing

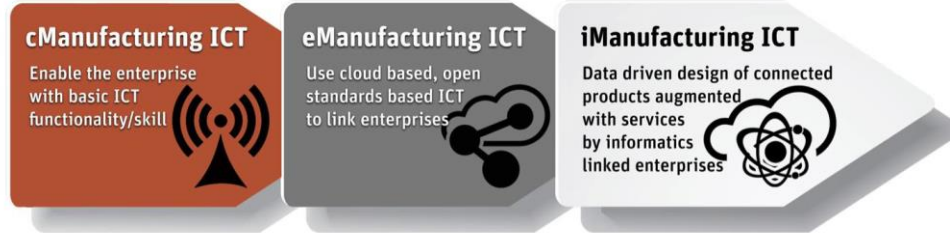


Industry 4.0 or Industrial IoT

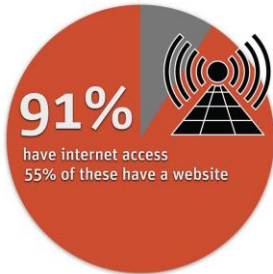


<https://www.i-scoop.eu>

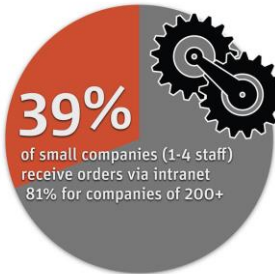
Moving to iManufacturing



Australian enterprise adoption of ICT



Manufacturing sector



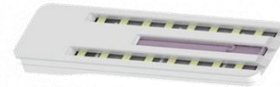
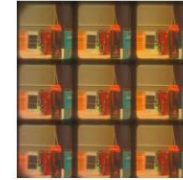
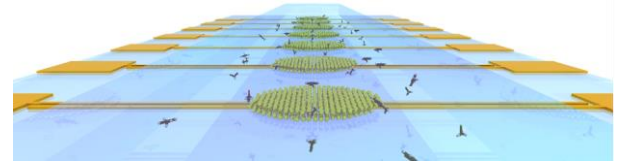
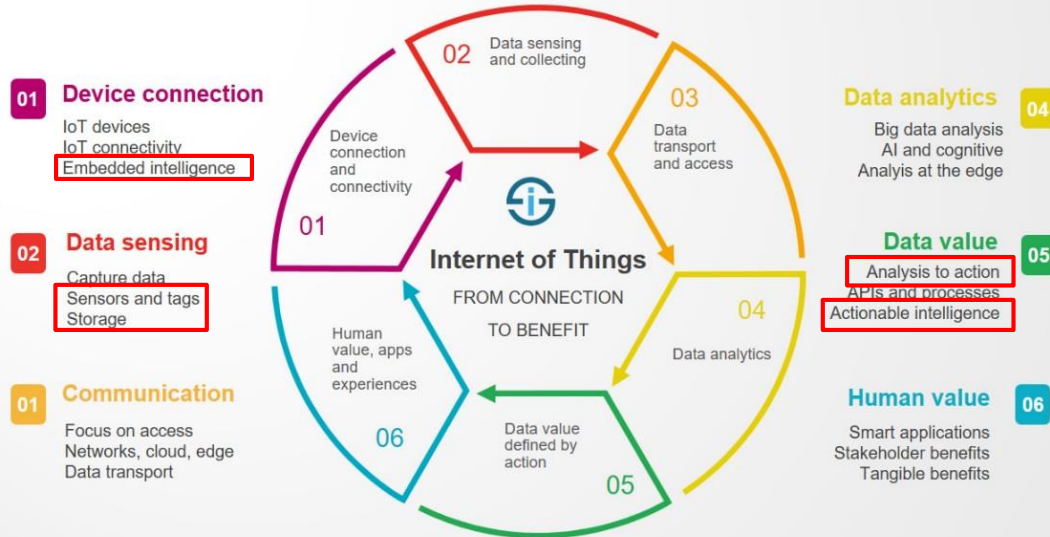
CSIRO Reports



Nico Adams

Sensors Enabling Intelligence for IoT

The Internet of Things From connecting devices to human value



<https://www.i-scoop.eu>

Opportunities Today



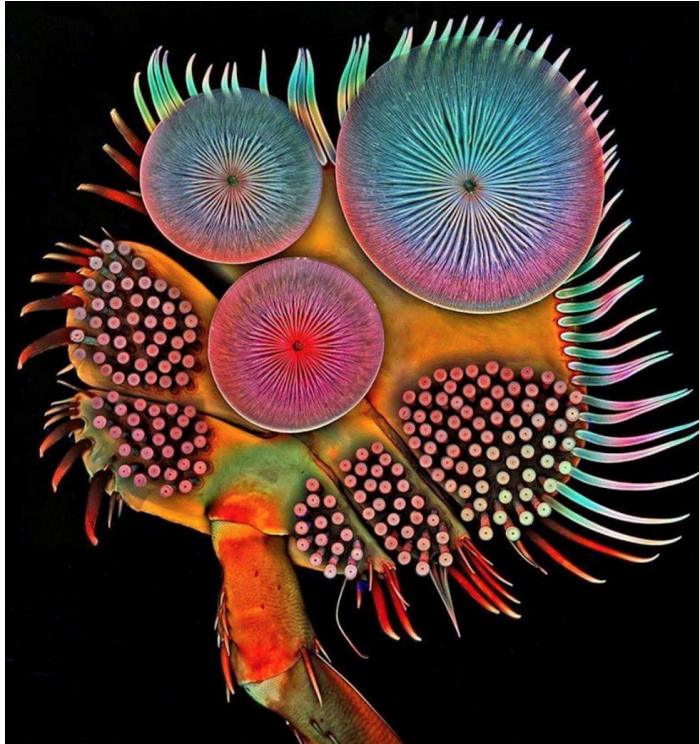
<https://www.i-scoop.eu>

Now: How can the part print the same everywhere?

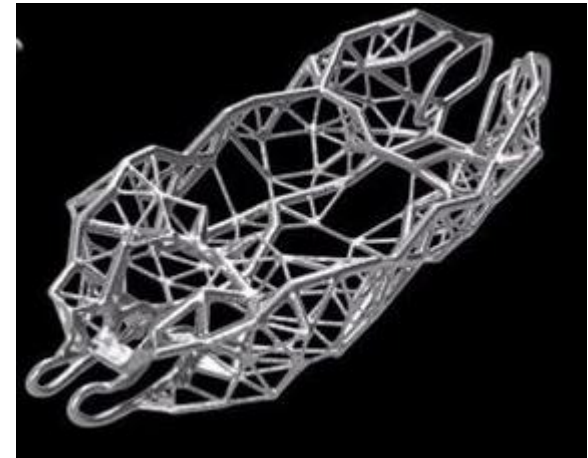


Courtesy of Dr Steve Dowey, Sutton Tools

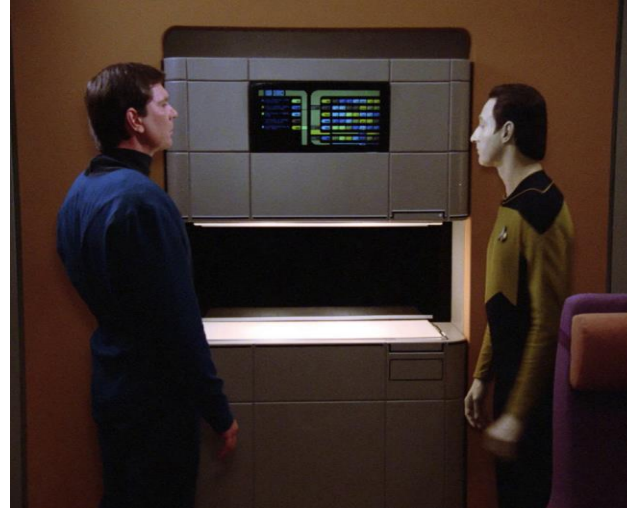
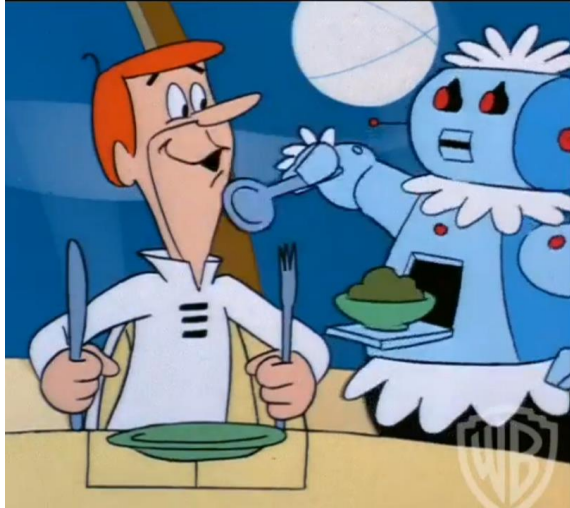
Opportunities by 2040



How can AI design the optimal part from the optimal material before you know you need it?



The Future of Manufacturing in Your Own Backyard

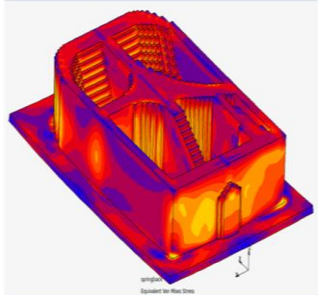
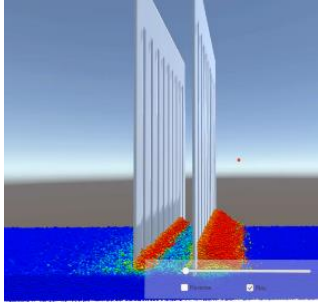


Location Independent Production

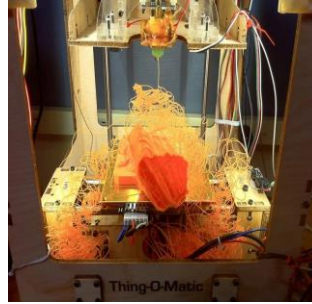
Autonomous Design and Optimisation of Products

Linking Simulation, Prototyping and Data

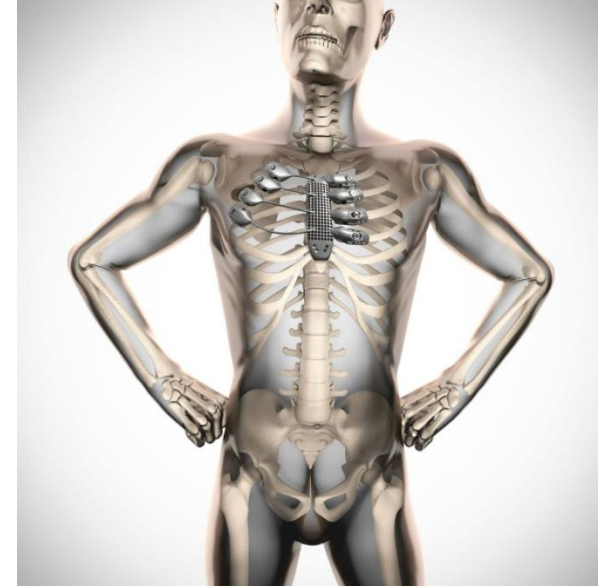
Simulation



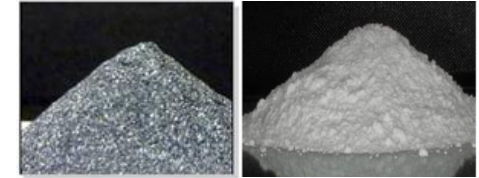
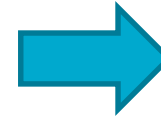
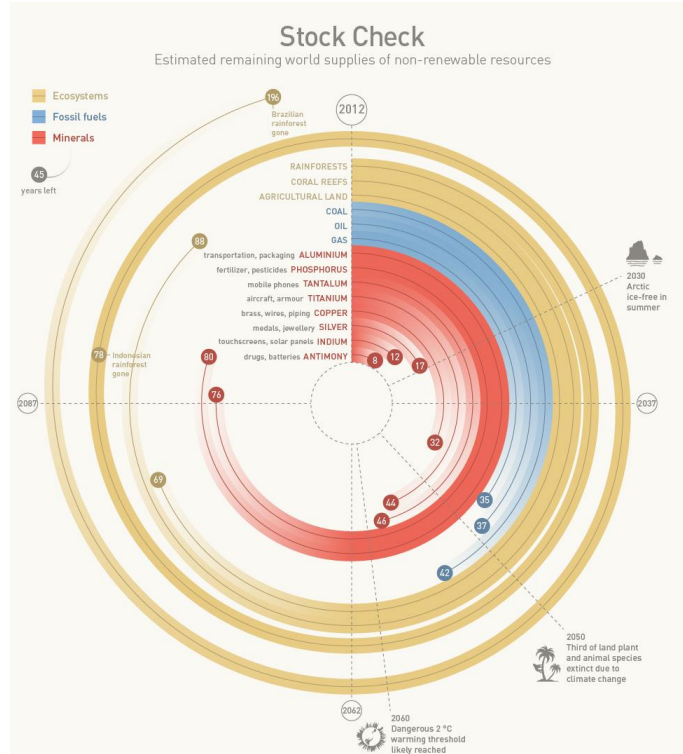
Real World Data



Enhanced Reliability



Closed Loop materials and Manufacturing



Powder for 3D printing

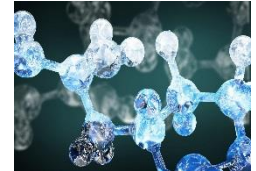
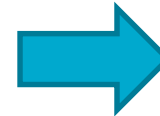
<http://www.bbc.com/future/story/20120618-global-resources-stock-check>

Transforming Manufacturing by 2040

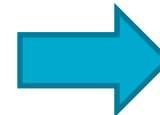
From this:



To this:



Feedstocks and chemicals

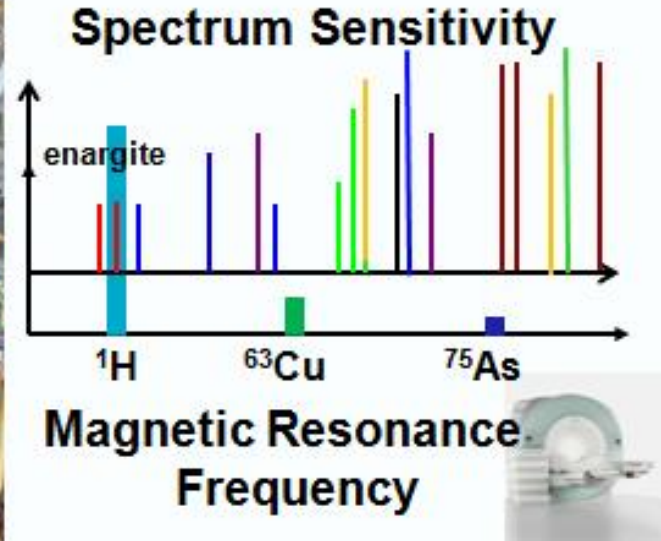


Powder for 3D printing

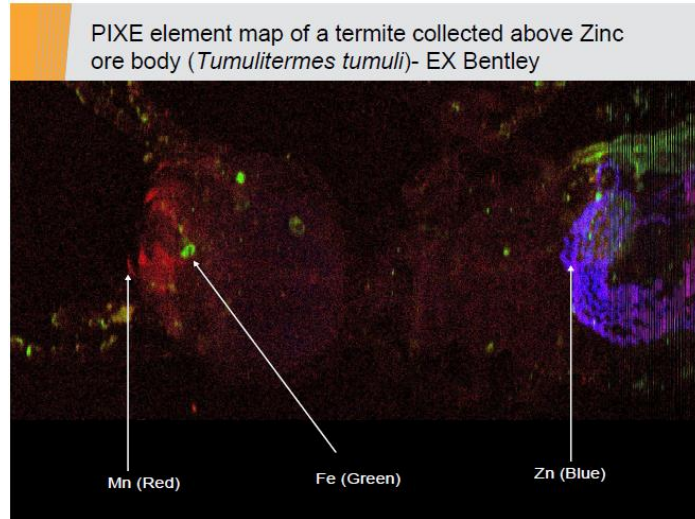
Separations Technology



David Miljak CSIRO



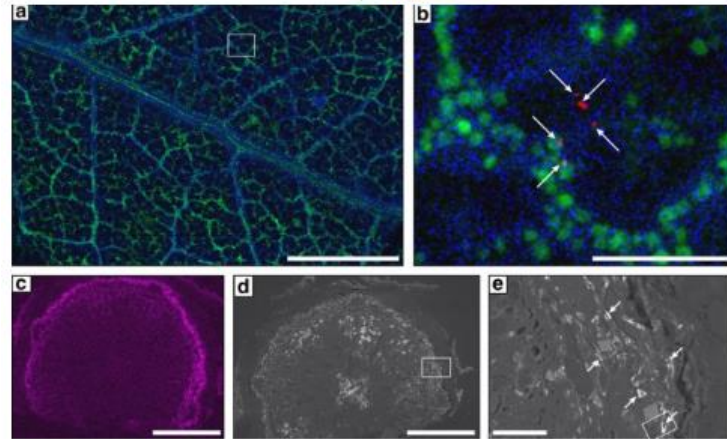
Separations Technology and Particle Production in Biology



Aaron Stewart CSIRO

Money does grow on trees: Gold found in tree leaves, leads to vast hidden underground deposits

By Sebastian Anthony on October 23, 2013 at 10:11 am | 18 Comments



Melvyn Lintern CSIRO

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materials manufacturing
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Dr Danielle Kennedy,
Director, Active Integrated Matter
Future Science Platform

Mariann Fee
BD Manager, CSIRO Manufacturing

