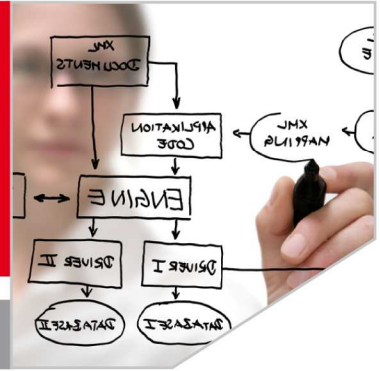


# Mechanical engineering gone small - how to measure Zeptograms and Yoctograms using MEMS technology

Professor John Dell BE PhD, University of Western Australia

Joint Technical Session presented by Mechanical Branch Engineers Australia WA, The Institution of Mechanical Engineers and American Society of Mechanical Engineers



## EVENT DETAILS

### Date:

Wednesday, 25 March 2009

### Time:

5.30 pm for a 6.00 pm start

### Venue:

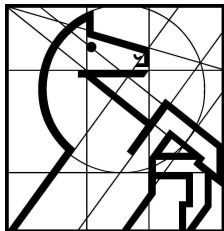
Auditorium  
Engineers Australia  
712 Murray Street  
West Perth

### Cost:

Free

### RSVP:

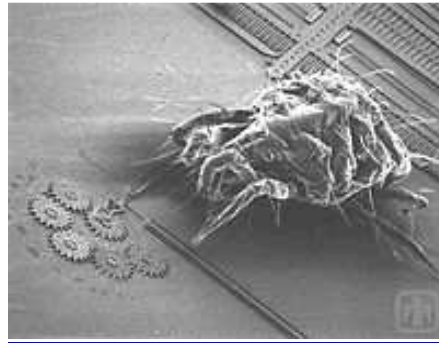
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Micro-Electro-Mechanical Systems (MEMS) and Nano-Electro-Mechanical Systems (NEMS) have been research tools for many years, with some industrial applications. The biggest commercial successes have been accelerometers (air bags originally, now mobile phones and games), pressure sensors (industrial and automotive) and digital light projectors (used to be expensive, now in your mobile phone). Recently materials engineering, mechanical engineering, optical engineering, electrical engineering and bio-chemical engineering have combined to make some amazingly simple yet incredibly sensitive MEMS-based sensors. This talk will give a brief background on MEMS technologies; how you measure zeptograms (yoctograms isn't there yet); what you can really do practically (at the moment); where biochemical engineering comes in; what is needed to replace the mass spectrometer at the airport; and prospects for the future in bio-chemical sensing using MEMS.



Courtesy of Sandia National Laboratories, SUMMiTTM Technologies,  
[www.mems.sandia.gov](http://www.mems.sandia.gov)

## About the Speaker:

### Professor John Dell

John Dell holds a BE and PhD, both from The University of Western Australia. After completing his studies he worked in industry in Australia and France for more than 10 years, in optoelectronics, optical communications systems, and space radiation effects on semiconductor devices. He then returned to UWA to pursue a career in academia, while still maintaining a strong industry focus. He has been working on MEMS technologies for nearly 10 years. Currently some of his work on MEMS is being developed to be used in agriculture and food science. He is part of a large research group running an annual budget of several million dollars per year. In 2008 he was joint winner of the inaugural Australia Museum Eureka Prize for Science in Support of Defence and Security.

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