

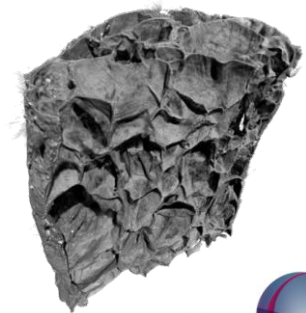
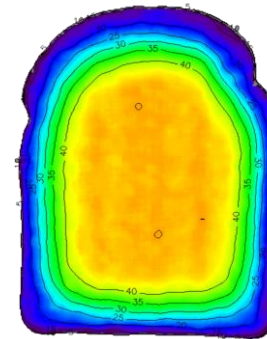
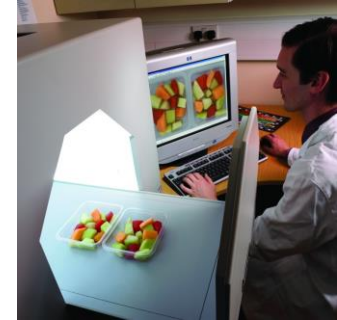
Campden BRI

Practical application of technical excellence for the food and drink supply chain.

- 2500 member companies
- Analytical testing, consulting, product and process innovation, training etc.
- 3000m² laboratories, 3500m² process halls

Photonics

- Product characterisation: Spectroscopy (UV, Visible, NIR, FTIR), Microscopy (Visible, FTIR), Colour measurement and imaging, X-ray micro CT, Hyperspectral NIR imaging, Thermal imaging, Particle size analysis.
- Evaluation and application of new technologies



Martin Whitworth

EPIC Online Technology Meeting on Photonics for the Food and Beverage Industry

Photonics applications

- Precision agriculture
- Manufacturing: Raw material inspection, sorting, process control, machine vision, final product inspection
- Laboratory analysis, product development
- Regulatory and supply chain validation.

Challenges

- Translating laboratory and at-line measurements to online: automation, continuous inspection, validation and assurance.
- e.g. moisture ✓, fat ✓, colour ✓, temperature ✓ - what about saturated fat, salt, acrylamide, structure, particle size in bulk tanks?



Challenges

- Food safety
 - Decontamination (UV, pulsed light)
 - Inspection of cleanliness – on surfaces, in pipes
 - Detection of pathogens, allergens, mycotoxins...
- Foreign body detection
 - Metal detectors✓ X-ray✓ Surface features✓
 - Low density materials - plastic, wood, egg shell, nut shell, fruit stones; cluttered background: glass fragments in glass jars
- Internal defects: holes, rot etc.
- Supply chain validation: authenticity, freshness (meat/fish)...
 - HSI for herbs and spices, Raman spectroscopy for drinks...



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food and drink innovation

