

Optics and Photonics Group  
Lunchtime Seminar

# “Contemporary medical thermometry”

Graham Machin

*National Physical Laboratory*



1:00pm Friday 6th October 2017  
A17 Pope Building  
All Welcome

[http://optics.nottingham.ac.uk/wiki/Talks\\_2017](http://optics.nottingham.ac.uk/wiki/Talks_2017)

Abstract



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Since the advent of reliable mercury-in-glass thermometers at the turn of the last century the practice of clinical thermometry was thought to be a solved issue. However with advances in technology there has in recent decades been a proliferation of temperature measurement methods applied to medical science.

The first part of the talk will give an overview of the fundamentals of temperature measurement, especially outlining the often neglected issues of calibration and traceability (to known temperature references). These form the basis of all sound measurement on which reliable trustworthy research of enduring value is founded.

The second part of the talk will introduce some of the more modern approaches to thermometry in use or under development in a clinical setting; these will be a) tympanic thermometry which will be used as a case study to show the importance of calibration and traceability, b) inter-cranial thermometry, c) thermal imaging and d) MRI thermometry (MR spectroscopy). Where appropriate these will be illustrated with examples of clinical use.