



December 2024

Director's note

I wonder what transformation you dream of, that digitalisation could make in your world? In metrology, I would love to see details of the sources of error in a measurement embedded in the calibration information we pass to each other. Tools to do this are indeed being developed alongside many others to change the way we work and think.

We still have a long way to go to replace the skilled metrologist though! I can't yet see digital tools replacing their nose for something that might be influencing the results of a measurement, their knack for quantifying it, and their practical bent to make sure the level of accuracy and the thing we are actually measuring suit the purpose of the measurement.

Capturing these distinctions of measurement experts systematically, in a way that we can explain to a computer, is one of our challenges for the era of digitalisation. Having learned my craft in a spectrophotometry lab, I am continually surprised by how my colleagues in other parts of metrology think about their work – a sure sign that I still have a lot to learn, and that we haven't yet codified our discipline.

I'm looking forward to what our digitalisation colleagues will bring to us. For now, I'm very grateful for what I continue to learn from all my colleagues and rely on their depth of experience to continue to deliver quality measurements to all our customers.

Enjoy the holiday period,

Annette



Introducing MSL's latest KTP, Dr Rebecca Hawke

If you are an accredited laboratory, you'll know all too well how important your Key Technical Persons (KTPs) are! Our KTPs are approved to sign MSL's calibration reports – they are our anchors of trust. Meet Rebecca, our most recent KTP.

When did you start at MSL?

"It was October 2018, I was returning to New Zealand having just completed studies overseas in the field of new materials for solar panels, and was lucky to find an open position at MSL."

What quantities are you a KTP for?

"Calibration of masses between 1 mg and 500 kg. Most of our work is between 1 mg and 10 kg which we can deliver routinely with world-class accuracy."

What sorts of customers do you provide calibration reports for?

"Measurement of mass is critical in a huge range of industries including manufacturing, dairy, pharmaceuticals, food and beverages, and wool. We provide

services directly to them or via the many other calibration and testing laboratories across the country. Researchers, regulators, and those monitoring the environment also rely on high quality measurements of mass."

What are you looking forward to?

"We are in the process of commissioning a new balance which will enable us to deliver an even better service from 10 g to 100 g. I am also working toward becoming a KTP for derived quantities such as pressure, density, volume and flow. I'm also excited to be part of the team developing New Zealand's own Kibble balance which will contribute to the new International System of Units (SI) and the adoption of the new definition of the kilogram." Click the link for more details here – [Redefinition of the kg at BIPM](#).

Updated Resources

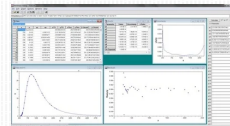
Calibration of low-temperature infrared thermometers Temperature and Humidity - Technical Guide 22

(Version 4 of this Technical Guide includes a description of the uncertainties in the calibration corrections.)



The advent of low-cost handheld infrared thermometers, which make non-contact measurements in the range -50°C to 500°C , has led to a proliferation of the thermometers in the food, building, and low-temperature processing industries. However, these instruments are not as simple to use as they first appear due to systematic effects related to emissivity, reflections, and the temperature of the thermometer itself. This guide explains how to calibrate low-temperature infrared thermometers and gives methods for correcting for the systematic effects.

Software for data processing Nonlinear Fitting Software Version 5.46



A Windows application that allows general-purpose linear and nonlinear fitting of any user-defined function to a set of input data.

Unweighted, weighted, or generalised least-squares fitting algorithms can be employed. Uncertainties in all fitted parameters are calculated as well as the propagated uncertainty for the fitted curve. A pdf file containing the software instructions will be installed in the same directory as the software itself.

150th Anniversary of the Metre Convention!

Save the date: MSL will hold its own celebration of the Anniversary at World Metrology Day 2025 on Friday 23 May at Gracefield Innovation Quarter, Lower Hutt. Your invitation will be sent out in March next year.

Click [read more](#) to follow the Bureau International des Poids et Mesures (BIPM), key players in the world of metrology, as they celebrate this historic milestone.

[Read more](#)



Find the tools you need to drive your R&D and innovation projects forward.

Kitmap showcases a wide range of advanced Scientific infrastructure and resources available for R&D and Innovation in New Zealand.

18+	5+	300+	240+
Platforms	Institutes	Resources	Infrastructures

Kitmap – Free-to-use online platform

The Science, Innovation and Technology sector is working together to improve collaboration and access to infrastructure, equipment and expertise via Kitmap. A special mention goes to our very own [Mesh Pillay](#), who led the Kitmap initiative.

The cutting-edge equipment is available to everyone across Aotearoa New Zealand's innovation ecosystem. It includes access to advanced facilities such as clean rooms, Good Manufacturing Practice certified testing, pilot and manufacturing infrastructure, and specialised nuclear magnetic resonance spectroscopy capabilities. These resources were previously accessible only within Crown Research Institutes, the National eScience Infrastructure, and Callaghan Innovation.

Click [read more](#) to view the media release and visit Kitmap [here](#).

 [Read more](#)



MSA Conference – August 2025

The Metrology Society of Australasia is holding their biannual conference in Sydney from Monday 25 to Thursday 28 August 2025. MSA2025 will bring together a very broad audience from across the measurement community. It creates the perfect opportunity to problem-solve calibration issues alongside technical experts from Measurement Standards Laboratory and counterparts from National Measurement Institute, Australia (NMI).

On offer is a jam-packed 3-day programme with technical talks, social events and a tour to the NMIA Linfield site. Already, MSA2025 has a great sponsorship uptake from a range of regular supporters who see value in connecting, including Sydney business, Rapid-Tech Equipment who are the Platinum sponsor. The first call for papers is now open and registrations are due to open early in 2025. Check out the refreshed MSA website and event page here – <https://metrology.asn.au/events/msa-conference-sydney-aus-25-28-august-2025/>

Festive close-down dates

MSL and our Inwards/Outwards Goods Store will be closed from midday on Friday 20 December and reopen on Wednesday 8 January 2025. We look forward to assisting you then – happy holidays!



www.measurement.govt.nz



info@measurement.govt.nz

[MSL's Strategic Plan](#)

Tell us what sort of information you would like to receive in future updates from us by emailing info@measurement.govt.nz



© 2024 Measurement Standards Laboratory of New Zealand



Powered by
Callaghan Innovation
Te Pokapū Auaha

Callaghan Innovation, 69 Gracefield Road, Gracefield Innovation Quarter, Lower Hutt, Wellington 5010

[Manage preferences](#)