



A JOINT CONFERENCE OF THE

NEW ZEALAND NIR SPECTROSCOPY SOCIETY
AND THE
AUSTRALIAN NIR SPECTROSCOPY GROUP



Courses

Monday 8th April 2024 Waimakariri 1

8:30 – 8:55am	Registration – Novotel Cathedral Square Christchurch
9:00 – 10:30pm:	Session 1: Full–day course <i>Hyperspectral Imaging</i> (Professor José Manuel Amigo)
10:30 – 11:00am:	Tea break: Crossing Foyer
11:00 – 12:30pm:	session 2 Full–day course <i>Hyperspectral Imaging</i> (Professor José Manuel Amigo)
12:30 – 1:30pm:	Lunch at Novotel: The Square Restaurant
1:30 – 3:00pm:	Session 3: Full–day course <i>Hyperspectral Imaging</i> (Professor José Manuel Amigo)
3:00 – 3:30pm:	Tea break: Crossing Foyer
3:30 – 5:00pm:	Session 4 Full–day course <i>Hyperspectral Imaging</i> (Professor José Manuel Amigo)

Tuesday 9th April 2024 Waimakariri 1

8:30 am	Registration starts
9:00 – 10:30pm:	Session 1:Half–day course 1 <i>Vibrational Spectroscopy</i> (Dr Cushla McGoverin)
10:30 – 11:00am:	Tea break: Crossing Foyer
11:00 – 12:30pm:	Session 2:Half–day course 1 <i>Vibrational Spectroscopy</i> (Dr Cushla McGoverin)
12:30 – 1:30pm:	Lunch at Novotel: The Square Restaurant
1:30 – 3:00pm:	Session 1:Half–day course 2 <i>Calibration and Chemometrics</i> (Dr Kyle Devey)
3:00 – 3:30pm:	Tea break: Crossing Foyer
3:30 – 5:00pm:	Session 2:Half–day course 2 <i>Calibration and Chemometrics</i> (Dr Kyle Devey)
6:50 pm onwards	Dinner for workshop participants outside the hotel: TBA



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Conference

DAY 1 – Wednesday 10th April 2024 Waimakariri 1 & 2

8:00 am Registration starts.
9:00 – 9:15 am Karakia, Welcome and housekeeping

9:15 – 11:00 am SESSION 1

Session Chair: Steve Holroyd

9:15 – 9:45 am **Tony Blakeney Award:** Food under the light of near infrared spectroscopy
9:45 – 10:15 am **José Manuel Amigo (PLENARY):** Benefits and drawback in combining NIR-HSI and spatial texture features (O-01)
10:15 – 11:00 am Morning Tea: Crossing Foyer, Rakaia and Ashley Rooms

11:00 – 12:30 pm SESSION 2: Agriculture, dairy and food

Session Chair: Steve Ranford

11:00 – 11:30 am **Cameron Craigie (PLENARY):** Commercialisation Insights – development of hyperspectral imaging technology for the food processing sector (O-02)
11:30 – 11:50 am **Nicholas Rigas:** NIR moisture and protein calibrations for lupin (*Lupinus angustifolius*) wholegrain and grist (O-03)
11:50 – 12:10 pm **Yidan Tang:** Pre-harvest protein prediction of faba bean (*Vicia faba*) using hyperspectral data and partial least square regression (O-04)
12:10 – 1:30 pm Lunch Novotel: The Square Restaurant

1:30 – 3:00pm SESSION 3 Chemometrics and machine learning

Session Chair: David Marston

1:30 – 2:00 pm **Brad Swarbrick (PLENARY):** The Sampling, NIR and Chemometrics Paradigm: A necessary trinity for reliable prediction (O-05)
2:00 – 2:20 pm **Alex Barnes:** Rapid Characterization of New Zealand One Penny Stamps (1936 to 1953) utilizing Non-destructive Spectroscopic Techniques (O-06)
2:20 – 2:40 pm **Kyle Devey:** Matrix driven validation: assessing fitness of purpose across multiple matrices within NIR models (O-07)



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2:40 – 3:00 pm	Graeme Batten: The basis of calibrations for total and phytate-bound phosphorus using near infrared spectra (O-08)
3:00 – 3:30 pm	Afternoon Tea: Crossing Foyer, Rakaia and Ashley Rooms
3:30 – 3:50 pm	Flash presentations (5 min each poster) Chair: Kyle Devey
	<ul style="list-style-type: none">• Jervee M. Punzalan: Exploratory analysis of semi-refined flaxseed protein extract with a MicroNIR spectrometer coupled with principal component analysis (P-01)• Luke Pavich: A Novel Approach – Sex determination of fruit fly pupa using Near Infrared (NIR) Spectroscopy (P-02)• Yash Dixit: Can NIR spectroscopy be used to authenticate halal processed beef? (P-03)
3:50 – 4:50 pm	Panga: Data competition (Facilitated by Kyle Devey)
4:50 – 5:50 pm	Refreshments and Posters: Crossing Foyer, Rakaia and Ashley Rooms
5:50 – 6:45 pm	Free
6:45 – 7:00 pm	Seating for dinner:
7:00 – 7:15 pm	Kai Karakia
7:15 – 9:15 pm	Dinner at Novotel: The Square Restaurant

DAY 2 – Thursday 11th April 2024 Waimakariri 1 & 2

8:30 – 9:00	Roger Meder (PLENARY): Observations of an NIR journal editor: How to ease the torture of publishing (O-09) Introduction: Steve Holroyd
9:00 – 10:00 am	SESSION 4 Water, soil, environment Session Chair: Roger Meder
9:00 – 9:30 am	David Pollard (PLENARY): Twenty years of NIR spectroscopy measurements across multiple continents with just one light source (O-10)
9:30 – 9:50am	Nicholas Anderson: Enhancing Soil Properties Analysis for Construction Safety through Near-Infrared Spectroscopy (O-11)
9:50 – 10:10 am	Harpreet Kaur: Rapid determination of potentially mineralizable carbon(C) and nitrogen(N) of soil using NIRS (O-12)
10:10 – 10:30 am	Morning Tea: Crossing Foyer, Rakaia and Ashley Rooms



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10:30–12:00 pm SESSION 5 Hyperspectral Imaging

Session Chair: Yash Dixit

- 10:30 – 11:00 am **Robert Valkenburg:** PLENARY: The peaks and troughs of real time fruit grading (O-13)
- 11:00 – 11:20 am **Mos Sharifi:** Clarospec™, In-plant estimates of red meat quality in real-time using Hyperspectral Imaging Technology (O-14)
- 11:20 – 11:40 am **Yang Liu:** Application of hyperspectral imaging in leather industry (O-15)
- 11:40 – 12:00 am **Carlie Watt:** Hyperspectral Imaging of Rembrandt's *Landscape with an Obelisk* Etching (O-16)
- 12:00 – 1:00 pm Lunch at Novotel: The Square Restaurant
- 1:00–1:50 pm **Panel discussion** ("*Future trends in NIR*", moderated by Kyle Devey)

1:50 – 3:00pm SESSION 6 Advancements in instruments and sensors Session Chair: Harpreet Kaur

- 1:50 – 2:20 pm **Michel Nieuwoudt** (PLENARY): Good Vibrations: Shedding light on skin cancers (O-17)
- 2:20 – 2:40 pm **Steve Holroyd:** Out with the old and in with the new: replacing instruments in an NIR network (O-18)
- 2:40 – 3:40 pm Awards and conference closing
- 3:40 – 4:10 pm Afternoon Tea: Crossing Foyer, Rakaia and Ashley Rooms