

Saturday 7 November

- 08:00-08:30 Registration for short courses (7F)
- 08.30-10.00 Parallel Short Courses
Course A: Fundamental NIRS: Getting the Best out of Light (**Room7@C**)
Phil Williams (PDK Projects, Canada)
Course B: NIRS for Process Analytical Technology (PAT) (**Room7@B**)
Katherine Bakeev (CAMO and *Former* Glaxo-Smith-Kline, USA)
Course C: Software Workshop I – Part 1: Bruker (**Room 7@A**)
Andre Kok (Bruker Optics, Germany)
- 10.00-10.30 *Coffee break*
- 10:30-12:00 Parallel Short Courses
Course A: Fundamental NIRS (*continue*)
Phil Williams (PDK Projects, Canada)
Course B: NIRS for PAT (*continue*)
Katherine Bakeev (CAMO and *Former* Glaxo-Smith-Kline, USA)
Course C: Software Workshop I – Part 1: Bruker (*continue*)
Andre Kok (Bruker Optics, Germany)
- 12:00-13:00 *Lunch (4F)*
- 13:00-14:30 Parallel Short Courses
Course A: Fundamental NIRS (*continue*)
Phil Williams (PDK Projects, Canada)
Course B: NIRS for PAT (*continue*)
Katherine Bakeev (CAMO and *Former* Glaxo-Smith-Kline, USA)
Course C: Software Workshop I – Part 2: Buchi
Roman Bossart (Buchi Labortechnik AG, Switzerland)
- 14.30-15.00 *Coffee break*
- 15:00-16:30 Parallel Short Courses
Course A: Fundamental NIRS (*continue*)
Phil Williams (PDK Projects, Canada)
Course B: NIRS for PAT (*continue*)
Katherine Bakeev (CAMO and *Former* Glaxo-Smith-Kline, USA)
Course C: Software Workshop I – Part 2: Buchi (*continue*)
Roman Bossart (Buchi Labortechnik AG, Switzerland)
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- 10.00-17.00 Conference Registration (Foyer of 7F)
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Sunday 8 November

08:00-08:30 Registration for short courses (7F)

08.30-10.00 Parallel Short Courses

Course D: Fundamental Chemometrics for NIRS (**Room7@C**)

David Hopkins (NIR Consultant, USA)

Course E: Advanced Chemometrics for NIRS (**Room7@B**)

Tom Fearn (University College London, UK)

Course F: Software Workshop II – Part 1: Foss (**Room 7@A**)

Frederik Ronnberg (Foss, Denmark)

10.00-10.30 *Coffee break*

10:30-12:00 Parallel Short Courses

Course D: Fundamental Chemometrics for NIRS (*continue*)

David Hopkins (NIR Consultant, USA)

Course E: Advanced Chemometrics for NIRS (*continue*)

Tom Fearn (University College London, UK)

Course F: Software Workshop II – Part 1: Foss (*continue*)

Paul Brimmer (Foss NIRSystems Inc, Australia)

12:00-13:00 *Lunch (4F)*

13:00-14:30 Parallel Short Courses

Course D: Fundamental Chemometrics for NIRS (*continue*)

David Hopkins (NIR Consultant, USA)

Course E: Advanced Chemometrics for NIRS (*continue*)

Tom Fearn (University College London, UK)

Course F: Software Workshop II – Part 2: CAMO

Suresh Kumar BV (CAMO-Asia, India)

14.30-15.00 *Coffee break*

15:00-16:30 Parallel Short Courses

Course D: Fundamental Chemometrics for NIRS (*continue*)

David Hopkins (NIR Consultant, USA)

Course E: Advanced Chemometrics for NIRS (*continue*)

Tom Fearn (University College London, UK)

Course F: Software Workshop II – Part 2: CAMO (*continue*)

Suresh Kumar BV (CAMO-Asia, India)

10.00-16.00 Conference Registration (Foyer of 7F)

17.30-22.00 **Welcome reception** on the Chao Phraya Princess Cruise III
Gather at Lower Lobby at 17.30 sharp

<i>Monday 9 November</i>

08.00-08.30	Registration	
08.30-09.00	Opening Ceremony (Grand Ballroom, 6F) - Vichai Haruthaithanasan (Conference Chair, Kasetsart University) - Vudtechai Kapilakanchana (President, Kasetsart University) - Yukihiro Ozaki (Chairperson, Asian NIR Consortium) - Peter Flinn (Chairman, International Council for NIRS)	
09.00-09.20	001-K NIR History: How to Set Up an NIRS Networking System for Agricultural Products P.C. Williams (PDK Projects, <i>Former Canadian Grain Commission, Canada</i>)	1
	SESSION 1: Agriculture <i>Chair: Pierre Dardenne (Walloon Agricultural Research Centre, Belgium)</i>	
09.20-09.45	002-I NIRS for Sustainable Agricultural Development and Protection from Food Deficiency G. Batten (Editor-in-Chief, JNIRS and Sea Spec, Australia)	3
09.45-10.00	003-O Tracking of Deionised Water and Deuterated Water in Wheat by NIR Hyperspectral Imaging P.J. Williams,* G. Du Toit, M. Manley and P. Geladi (Stellenbosch University, South Africa)	4
10.00-10.15	004-O The Use of Hyperspectral Imaging to Detect Mildew Damage in Wheat Samples M. Shahin,* D. Hatcher and S. Symons (Canadian Grain Commission, Canada)	5
10.15-10.45	Breaks and Exhibitions	
	SESSION 1: Agriculture (continue) <i>Chair: Akifumi Ikehata (National Food Research Institute, Japan)</i>	
10.45-11.00	005-O Classification of Grass Samples containing or Free of Endophytes using NIR and Extended Canonical Variates Analysis (ECVA) R. Gislum, P.H. Shetty and J.R. Jørgensen* (Aarhus University, Denmark)	6
11.00-11.15	006-O Moisture Content Analyzer for Natural Rubber Sheet by Handheld NIR Spectrometer R. Rittiron,* C. Tiammueng, J. Saehea and S. Sabchuangchote (Kasetsart University, Thailand)	7
11.15-11.30	007-O Time-of-flight NIRS for Detecting Sugar and Acid Contents in Thick Peel Fruit Y. Kurata,* T. Tsuchida and S. Tsuchikawa (Nagoya University, Japan)	8
11.30-11.45	008-O Outer Product Analysis Applied to Time-resolved Reflectance (TRS) and NIR Reflectance Spectra of Apples S. Barzaghi,* M. Vanoli, K. Cremonesi, G. Cortellino, D. Torreggiani, A. Rizzolo, M. Grassi, L. Spinelli and A. Torricelli (Research Centre for Fodder Crops and Dairy Production, Italy)	9
11.45-12.00	009-O Development of an NIR Sorting Machine for Detecting Internal Disorder and Quality of Mangosteens Fruit S. Teerachaichayut,* W. Thanapase, S. Kasemsumran, K. Shigefuji, K. Kiji, Y. Nitta, S. Saranwong and S. Kawano (King Mongkut's Institute of Technology Ladkrabang/Kasetsart University, Thailand)	10
12.00-13.00	Lunch (4F)	

Monday 9 November (cont)

SESSION 1: Agriculture (continue)

Chair: Ana Garrido-Varo (University of Cordoba, Spain)

- 13.00-13.15 **010-O** Use of VIS-NIR System combined with Multispectral Image Analysis in Spinach Seed 11
M. Halkjær Olesen,* J.M. Carstensen and B. Boelt (Aarhus University, Denmark)
- 13.15-13.30 **011-O** Calibration Pixel Selection for Hyperspectral Discrimination of Ruminant and Fish Animal By-products 12
C. Riccioli,* W. Saeys, P. Vallesquino-Laguna, D. Pérez-Marín, J.E. Guerrero-Ginel and A. Garrido-Varo (University of Cordoba, Spain)
- 13.30-13.35 **012-F** Starch and Sugar – The Assessment of Maturation and Ripening of Fruit by Short Wave NIRS (P) 13
K.B. Walsh* and P.P. Subedi (Central Queensland University, Australia)
- 13.35-13.40 **013-F** Use of Peel Spectral Information to Improve Titratable Acidity Prediction in Intact Orange by NIRS in Long Wavelength Region (NoP) 14
A. Terdwongworakul,* P. Laosubchareon, S. Kasemsumran and W. Thanapase (Kasetsart University, Thailand)
- 13.40-13.45 **014-F** Potential of Genetic Algorithm and Support Vector Regression to Evaluate Organic Matter Content of Manure Composts by NIRS (P) 15
G. Huang and L. Han* (China Agricultural University, China)
- 13.45-13.50 **015-F** Use of NIRS for the Estimation of Total Isoflavone Content in Single Seed Soybean (P) 16
T. Sato,* K. Eguchi and Y. Nishiba (National Agricultural Research Center for Kyushu Okinawa Region, Japan)
- 13.50-13.55 **016-F** Rapid Screening by NIRS for Sugarcane Smut Resistance to Improve Breeding and Selection Outcomes (P) 17
D.E. Purcell,* S. Kokot and M.G. O’Shea (BSES Limited, Australia)

SESSION 2: Food

Chair: Roberto Giangiacomo (CRA-IAA, Italy)

- 13.55-14.20 **017-I** Role of NIRS in the Enhancement of Food Safety Monitoring and Food Authentication 19
G. Downey (TEAGASC, Ireland)
- 14.20-14.35 **018-O** Direct Calculation of Amylose-Amylopectin Ratios and Other Proximates by Curve Fitting of NIR Spectra of Cereal Flours 20
A. Haiduc* and V. Leloup (Nestle PTC Orbe, Switzerland)
- 14.5-14.50 **019-O** Testing the Ability of FT-NIR to Determine the α_1 -Casein and β -Casein Content in Individual Milk Samples 21
T.M.P. Cattaneo,* M. Feligini, I. Bonizzi, R. Giangiacomo and S. Barzaghi (Research Centre for Fodder Crops and Dairy Production: CRA-FLC, Italy)
- 14.50-15.05 **020-O** Detection of Melamine Contamination by NIRS and NIR Microscopy Techniques: Which Perspectives and Limits? 22
V. Baeten,* O. Abbas, B. Lecler and P. Dardenne (Walloon Agricultural Research Centre: CRA-W, Belgium)

15.05-15.30 **Coffee Break, Exhibition**

Monday 9 November (cont)

SESSION 2: Food (continue)

Chair: Steve Holroyd (Fonterra Co-operative Group, New Zealand)

- 15.30-15.45 **021-O** Portable NIR Reflectance Spectroscopy for Assessing Flesh Quality of Aquaculture Produce 23
M. Brown,* M. Fluckiger, R. Tume, A. Sikes, M. Brock and N. Elliott
(CSIRO Marine and Atmospheric Research, Australia)
- 15.45-16.00 **022-O** Novel NIR Transfection Measurements for Non-contact Core Temperature of Processed Meat Products 24
M. O'Farrell,* J. Tschudi, K.A.H. Bakke, J.P. Wold and K.W. Sanden
(SINTEF ICT, Norway)
- 16.00-16.15 **023-O** Ability of *on site* NIRS to Predict Shelf Life Extension of Pork Meat 25
A. Soldado,* V. Fernández-Ibáñez, M. Álvarez, A. Martínez, N. Prado,
P. González, J. Díaz and B. de la Roza-Delgado
(Regional Institute for Research and Agro-Food Development, Spain)

SESSION 2: Food (continue)

Chair: Marena Manley (Stellenbosch University, South Africa)

- 16.15-16.30 **024-O** Non-destructive *in vivo* Classification of Iberian Pigs measured with a handheld NIR Digital Transform Spectrometer 26
E. Zamora-Rojas,* A. Garrido-Varo, D.C. Pérez-Marín, E. De Pedro-Sanz and J.E. Guerrero-Ginel (University of Cordoba, Spain)
- 16.30-16.45 **025-O** Quantitative Analysis of Meat Spoilage using VIS/NIR Spectral Imaging 27
J.M. Carstensen,* E. Panagou and G-J.E. Nychas (Videometer A/S, Denmark)
- 16.45-16.50 **026-F** Monitoring Water Content using Multispectral Imaging and NIR in Minced Meat Preparation Process (P) 28
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(Technical University of Denmark, Denmark)
- 16.50-16.55 **027-F** Imaging Water in Bread (NoP) 29
F. Møller,* S.W. Lindström and D. Nilsson (Danisco A/S, Denmark)
- 16.55-17.00 **028-F** Validation of NIRS Analysis in Authentication of Fresh and Frozen-Thawed Fish Products (P) 30
L. Fasolato,* E. Cencetti, R. Riovanto, M. Mirisola, E. Novelli, S. Balzan, L. Serva,
J.C. Ferlito, F. Benozzo, M.E. Teneggi and P. Berzaghi (Padua University, Italy)
- 17.00-17.05 **029-F** Identification of Honey Authenticity by NIRS (P) 31
P. Sirisomboon,* W. Thanapase, S. Kasemsumran and S. Howvimanporn
(King Mongkut's Institute of Technology Ladkrabang, Thailand)

SESSION 3: Networking-Applications

Chair: Richard Streamer (Foss NIRSystems, Australia)

- 17.05-17.20 **030-O** Standardisation of Factory Online Cane Analysis Systems for the NIR Measurement of Brix and Pol 33
D. Donald* and S. Staunton (BSES Limited, Australia)
- 17.20-17.25 **031-F** Sugarcane Diagnosis System using NIR Networking System (P) 34
E. Taira,* M. Ueno and Y. Kawamitsu (University of the Ryukyus, Japan)
- 17.25-17.30 **032-F** The Development of Global Milk Powder Calibrations (NoP) 35
S.E. Holroyd and M. Fauth (Fonterra Co-operative Group Ltd, New Zealand)
- 17.30-18.15 **Poster A (Room 7@B, 7@C)** (Odd numbers, Flash, P-001~ P-089)
- 18.15-19.00 **Poster B (Room 7@B, 7@C)** (Odd numbers, P-091 ~ P-179)

Tuesday 10 November

- 08.30-08.50 **033-K NIR History:** Biomedical, Pharmaceutical and Environmental Applications 37
from Early Routine NIRS to InSb Chemical Imaging
D. Wetzel (Kansas State University, USA)
- SESSION 4: Pharmaceutical and PAT**
Chair: Heinz Siesler (University of Duisburg-Essen, Germany)
- 08.50-09.15 **034-I PAT in the Pharmaceutical Industry:** Applying NIRS to Gain Process 39
Understanding through the Development Process
K.A. Bakeev* and E. Botonjic-Sehic
(CAMO Software Inc., Former Glaxo-Smith-Kline, USA)
- 09.15-09.30 **035-O Simultaneous Determination of Lamivudine and Zidovudine in Fixed Dose** 40
Combinations using NIRS
S.S. Simões,* S. Grangeiro Jr, D.P. de Santana, M.M. de Albuquerque and
M.F. Pimentel (LAFEPE/UFPE, Brazil)
- 09.30-09.45 **036-O Identification of Counterfeit Tablets and Authentication of Medicines in the** 41
International Wholesaling Supply Chain
S. Assi,* R. Watt and A. Moffat (University of London, UK)
- 09.45-10.00 **037-O Understanding Calibration Transfer Problems in NIRS:** 42
Diethylene Glycol-Glycerol-Water Mixtures
N. Hongrisuk,* R. Jee and A. Moffat (University of London, UK)
- 10.00-10.30 **Coffee Break, Exhibition**
- SESSION 4: Pharmaceutical and PAT (continue)**
Chair: Tsuyoshi Miura (Bruker Optics KK, Japan)
- 10.30-10.45 **038-O Reliable Quantitative Analysis of Pharmaceutical Suspension using NIRS** 43
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(Korea United Pharm. Inc., Korea)
- 10.45-11.00 **039-O The Using of NIR Process Analytical Technologies (PAT) in Pharmaceutical** 44
Manufacturing Drying Processes
C. Chen,* J. Timmermans and S. Hammond (Pfizer Inc., USA)
- 11.00-11.15 **040-O Monitoring Drug Quality using NIR Method in the Circulation Field** 45
Y. Feng,* D. Lei, X. Wang and C. Hu
(National Institute for the Control of Pharmaceutical and Biological Products, China)
- SESSION 4: Pharmaceutical and PAT (continue)**
Chair: Katherine Bakeev (CAMO, USA)
- 11.15-11.30 **041-O NIR as a Multitasking Technique in the Pharmaceutical Field** 46
M. Sarraguça,* A. Cruz, P. Costa, H. Amaral and J. Lopes
(Universidade do Porto, Portugal)
- 11.30-11.45 **042-O Mixture Analysis in Hand-held NIR Instrumentation** 47
D. Day,* M. Butler and F. Haibach (Polychromix, USA)
- 11.45-12.00 **043-O Simultaneous Determination of Chlorogenic Acid and Baicalin in** 48
Heat-clearing and Detoxicating Orally Liquid by NIRS
Z.Y. Liu and J.D. Yang* (Southwest China University, China)
- 12.00-13.00 **Lunch (4F)**
-

Tuesday 10 November (cont)

SESSION 5: Medical and Life Science

Chair: Yiping Du (East China University of Science and Technology, China)

- 13.00-13.25 **044-I** Recent Advancement of NIR Technology in Biomedical Fields 49
Y. Ozaki (Kwansei Gakuin University, Japan)
- 13.25-13.40 **045-O** A Review of Indocyanine Green Contrast Agent in Surgery 50
J.T. Alander (University of Vaasa, Finland)
- 13.40-13.55 **046-O** Testing NIR Based Skin Spectra Analyzer System and Software with the 51
Simulated Data Generated by Genetic Algorithm
T. Mantere,* P. Välisuo and J.T. Alander (University of Vaasa, Finland)
- 13.55-14.10 **047-O** Using Self Modeling Curve Resolution for Quantification of NIR Spectra of 52
Biomedical Samples
D. Burns,* F. Esmonde-White and F. Pandozzi (McGill University, Canada)
- 14.10-14.25 **048-O** A Point-of-issue System for Detecting Platelet Components Contaminated 53
with Bacteria
S. Saranwong,* S. Ezuki, K. Kawabata, H. Ohto and S. Kawano
(National Food Research Institute, Japan)

SESSION 6: Biology and Environment

Chair: Diane Malley (PDK Projects, Canada)

- 14.25-14.50 **049-I** NIRS in Environmental Research - The Value of Monitoring Complexity 55
W.J. Foley (Australian National University, Australia)
- 14.50-15.05 **050-O** NIRS as a Tool in Cultural Heritage Conservation 56
M. Šala,* M. Strlič and J. Kolar (University of Ljubljana, Slovenia)
- 15.05-15.20 **051-O** Use of NIRS to Measure Leaf Water Potential 57
R. De Bei¹, W. Sullivan, W.U. Cynkar, D. Cozzolino,* R.G. Damberg, P. Smith and
S.D. Tyerman (The Australian Wine Research Institute, Australia)
- 15.20-15.45 **Coffee Break, Exhibition**

SESSION 6: Biology and Environment (continue)

Chair: James Reeves, III (USDA-Beltsville, USA)

- 15.45-16.00 **052-O** Feasibility of Predicting Several Forms of Phosphorus and Phosphorus 58
Retention Capacity in Canadian Prairie Soils by NIRS
D. Malley,* O.O. Akinremi and D. Ige (PDK Projects, Canada)
- 16.00-16.15 **053-O** Prediction of Biochemical Methane Potential of Municipal Solid Wastes and 59
Understanding of Their Biodegradability by NIRS
M. Lesteur,* J.M. Roger, E. Latrille, G. Junqua, J.P. Steyer, C. Gonzalez
and V. Bellon-Maurel (INRA, France)
- 16.15-16.30 **054-O** Rapid Determination of Methoxyl Groups in Plant Fibrous Material by NIRS 60
Y.M. Xie* and X.S. Wu
(Hubei University of Technology, China)
-

Tuesday 10 November (cont)

SESSION 6: Biology and Environment (*continue*)

Chair: Anupun Terdwongworakul (Kasetsart University, Thailand)

- 16.30-16.45 **055-O** Discrimination of Wood Origin with NIRS 61
A. Sandak,* J. Sandak and M. Negri
(Trees and Timber Institute Ivalsa/CNR, Italy)
- 16.45-17.00 **056-O** NIRS for Mechanical Stress Grading of Sawing Lumber 62
T. Fujimoto,* Y. Kurata, Q. Long, K. Matsumoto and S. Tsuchikawa
(Hokkaido Forest Products Research Institute, Japan)
- 17.00-17.15 **057-O** Determination of Moisture Content and Specific Gravity of *Pinus taeda* 63
Discs using NIR Hyperspectral Imaging System
L.R. Schimleck,* C.R. Mora, S.C. Yoon and C.N. Thai
(The University of Georgia, USA)
- 17.15-17.30 **058-O** Prediction of Kraft Pulp Yield in Eucalyptus: An Inter-lab Study 64
R. Meder,* G. Downes, N. Ebdon, T. Rodemann, T. Stanger and P. Ramadevi
(CSIRO Plant Industry, Australia)
- 17.30-18.15 **Poster C** (Room 7@B, 7@C) (Even numbers, Flash, P-002 ~ P-090)
- 18.15-19.00 **Poster D** (Room 7@B, 7@C) (Even numbers, P-092 ~ P-180)
- 19.00-22.00 **Buchi Evening** (*Garden Terrace, 8F*)
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Wednesday 11 November

- 08.30-08.40 **Award Ceremony: Tomas Hirschfeld Award (THA) and Buchi Award**
Chairs: Peter Flinn (Chairman, ICNIRS) and Jochen Khecht (Büchi Representative)
- 08.40-09.00 **059-A** How to Get Beautiful NIR Spectra? 65
S. Kawano (National Food Research Institute, Japan)
- 09.00-09.20 **060-A** Alternative Common Basis for Wavelet Compression of NIR Spectra and 67
Their Application to Food Samples
M. Casale* (and P. Oliveri, N. Sinelli, M. Forina)
(University of Genova, Italy)
- 09.20-09.45 **Coffee Break, Exhibitions**
- 09.45-12.15 **ICNIRS General Meeting**
(All participants are invited to attend)
Agenda
1. Chairman's Welcome and Report
 2. Proposed Amendments to ICNIRS Regulations
 3. Minutes of General Meeting held at the NIR-2007
 4. Treasurer's Report
 5. Chairman's Advisory Committee Report
 6. NIR Education Sub-Committee Report
 7. Publications Report
 8. Election of Council Management Committee
 9. Election of Chairman's Advisory Committee members
 10. Retiring Chairman steps down and is succeeded by New Chairman
 11. Host country for NIR-2013
 12. Brief update on NIR-2011
 13. Guidelines for future Conferences: Formation of sub-committee
 14. Review of ICNIRS Awards: Formation of sub-committee
 15. Any other business
- 12.15-12.20 **Group photo taking**
- 12.20-13.00 **Lunch (4F)**
- 13.00-17.30 **Mid-Conference tours**
Tour A: Temple of Emerald Buddha and Grand Palace
Gather at Hotel Lower Lobby at 13.00 sharp
- Tour B: Day-Cruising and Temple of the Dawn
Gather at Hotel Lower Lobby at 13.30 sharp
- 19.00-22.00 **Bruker Evening (Pool side, 8F)**
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Thursday 12 November

08.30-08.50	061-K NIR History: Progress in Processing and Evaluation of Spectral Data	69
	K. Kaffka (Corvinus University of Budapest, Hungary)	
	SESSION 7: Chemometrics	
	<i>Chair: David Hopkins (NIR Consultant, USA)</i>	
08.50-09.15	062-I A Bayesian Framework for NIR Calibration	71
	T. Fearn,* D. Pérez-Marín, A. Garrido-Varo and J. Guerrero-Ginel (University College London, UK)	
09.15-09.30	063-O Two-Dimension Correlation Analysis of NIR Fractional Derivative Spectra: Correlation with Constituent Concentrations	72
	J. Uozumi* and Y. Kawakami (Hokkai-Gakuen University, Japan)	
09.30-09.45	064-O CovSel: Variable Selection for Highly Multivariate and Multi-Response Calibration	73
	J.M. Roger,* B. Palagos and D. Bertrand (Cemagref-ITAP, France)	
09.45-10.00	065-O Equivalent Separated Combination Moving Window MLR for Wavenumbers Selection of NIRS Analysis	74
	T. Pan,* J. Xie, H. Chen, H. Yin and X. Chen (Jinan University, China)	
10.00-10.30	Coffee Break, Exhibition	
	SESSION 7: Chemometrics (continue)	
	<i>Chair: Yukihiro Ozaki (Kwansei-Gakuin University, Japan)</i>	
10.30-10.45	066-O The PLS Database Optimization Concept	75
	J.S. Shenk,* P. Berzaghi and J.W. Shenk (Shenk Analytical International, USA)	
10.45-11.00	067-O Methods based on Statistics for Quantitative Modeling of NIR Spectra	76
	X. Shao,* H. Xu, Z. Liu, W. Cai (Nankai University, China)	
11.00-11.15	068-O Minimisation of Instrumental Noise in the Acquisition of FT-NIR Spectra by Means of Doehlert Design and Signal Processing Technique	77
	G. Foca,* C. Ferrari, N. Sinelli, M. Mariotti and A. Ulrici (University of Modena and Reggio Emilia, Italy)	
	SESSION 7: Chemometrics (continue)	
	<i>Chair: Thongchai Suwansichon (Kasetsart University, Thailand)</i>	
11.15-11.30	069-O Random Model Trees: A Competitive Off-the-shelf Technology for NIRS	78
	B. Pfahringer, D. Fletcher, R. Bouckaert* and G. Holmes (University of Waikato, New Zealand)	
11.30-11.45	070-O Preventing Over-fitting in Hyperspectral Image Regression	79
	A. Gowen,* J. Burger, C. Esquerre, G. Downey and C. O'Donnell (University College Dublin, Ireland)	
11.45-11.50	071-F A Comparison Study of Scattering Correction Methods (P)	80
	S. Ottestad* and J.P. Wold (Norwegian University of Life Science, Norway)	
11.50-11.55	072-F Classification of Spectra through Data Compression and Spectral Mapping for Selected Consumer Plastics for On-line Sorting Process (P)	81
	V. Venkataraman,* K. Subrahmanyam, R. Govindaraj, M. Igbal and T. Chinnu (CEERI, India)	
11.55-13.00	Lunch (4F)	

Thursday 12 November (cont)

SESSION 8: Chemometrics for Networking

Chair: Phil Williams (PDK Projects, Canada)

- 13.00-13.15 **073-O** Use of the CONDENSE Algorithm to Optimize Calibration Databases 83
P. Berzaghi,* J.S. Shenk and J.W. Shenk (University of Padua, Italy)
- 13.15-13.30 **074-O** NIR 3rd Party Instrument Networking 84
J.W. Shenk,* P. Berzaghi and J.S. Shenk (Unity Scientific, USA)

SESSION 9: Spectroscopy and Theory

Chair: Hoeil Chung (Hanyang University, Korea)

- 13.30-13.55 **075-I** A Major Issue in NIRS: How Does Water Interact with Organic Matter? 85
A. Ikehata,* K. Nakamura, Y. Ozaki and S. Kawano
(National Food Research Institute, Japan)
- 13.55-14.10 **076-O** Improvement of the Measurement Methodologies and Optical Property 86
Calculation for Double-Integrating-Spheres System
H. Zhao,* C. Li, Q. Wang and K. Xu (Tianjin University, China)
- 14.10-14.25 **077-O** Optical Characterization of Apple Tissue: A Multi-scale Approach 87
W. Saeys,* S.N. Thennadil, H. Ramon and B. Nicolai
(Katholieke Universiteit Leuven, Belgium)
- 14.25-14.40 **078-O** Determination of Trace Lead in Water by On-line Enrichment NIR Spectra 88
Y. Du,* G. Chen and W. Tao
(East China University of Science and Technology, China)

14.40-15.10 **Coffee Break, Exhibition**

SESSION 10: Chemistry and Polymer

Chair: Jochen Knecht (Buchi Labortechnik AG, Switzerland)

- 15.10-15.35 **079-I** Mid-IR versus NIR Spectroscopy: A Case Study of 89
the Quality Control of Bitumen
H.W. Siesler,* L. Thimm, T. Kratzke and L. Herberholz
(University of Duisburg-Essen, Germany)
- 15.35-15.50 **080-O** Nondestructive and Rapid Identification of Fabric Fibers using NIRS 90
H. Yuan,* R. Chang, L. Tian and X. Li
(Beijing University of Chemical Technology, China)
- 15.50-16.05 **081-O** Novel NIR Reflection Spectroscopic Methods for the Simultaneous 91
Determination of Nanomaterial's Properties
C.W. Huck (Leopold-Franzens University, Austria)
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