Contents

I-01 **Near-infrared/infrared spectroscopy and density-functional-theory calculation study on frequencies and absorption intensities of fundamentals and overtones of NH stretching vibrations of pyrrole and pyrrole-pyridine complex**
Yukihiro Ozaki, page 1

I-02 **A New Strategy for Variable Selection and Robust Modeling in Near Infrared Spectroscopic Analysis**
Y.Z. Liang, H.D. Li, D.S. Cao and Q.S. Xu, pages 2

I-03 **NIR hyperspectral imaging: making the invisible visible**
M. Manley, pages 3

O-001 **Orthogonal Signal Correction of Near-Infrared Spectra**
H.F. Yuan, J.X. Ding, X. Zhang, Z. Guo, C.F. Song, X.Y. LI, pages 5

O-002 **Use of Near Infrared Spectroscopy in Combination with Chemometrics for Quantitative and Discriminant Analyses of Turmerics**
S. Kasemsumran, V. Keeratinijakal, W. Thanapase and Y. Ozaki, pages 7

O-003 **Chemometric Studies for the Multivariate Calibration of Near-infrared Spectroscopic Analysis**
X.G. Shao, W.S. Cai, X.H. Bian, pages 9

O-004 **Deriving leaf chlorophyll content from hyperspectral reflectance using a genetic algorithm organization index**
Zou Xiaobo, Shi Jiyong, Zhao Jiewen, Mao Hanpin, Yin Xiaopin, Li Yanxiao, Mel Holmes, pages 10

O-005 **Detecting Fusarium Damage in CWRS Wheat with Spectral Imaging: A comparison of partial least squares and principal component analyses based kernel segregation**
M. A. Shahin and S.J. Symons, pages 11

O-006 **ECMWMLR Method and the Stability for Wavelength Selection in NIR Spectroscopy Analysis**
Tao Pan, Jun Xie, Huazhou Chen, Hao Yin, Xingdan Chen, pages 13

O-007 **More Attention on Spectral Information in Calibration Sample Selection**
Y. Ootake, pages 15

O-008 **Polynomial Fitting Approach to Fractional Derivatives of NIR Spectra**
J. Uozumi, pages 17

O-009 **A Bootstrap-Based Outlier Detection Method**
Feng Gan, pages 19

O-010 **Chemometric software development with some new ideas from chemometrics and computer science**
Z. Zhang, Y. Liang and S. Chen, pages 21

O-011 **Model validation in near infrared analysis**
W. Fan, H. D. Li and Y. Z. Liang, pages 22

O-012 **An automated compact NIR instrument for meat quality and authentication**
S. Saranwong, K. Sashida, S. Park, G. Noguchi, A. Ikehata and S. Kawano, pages 24

O-013 **Application of small volume powder holder to quantitative analysis of tobacco**

samples with near-infrared spectroscopy
Y. Wu, L. Zhang, W. Zhang, Y. Du, pages 26

O-014 Novel Near-Infrared Dyes Based On "P" Chemistry
C. Jiao, J. Wu, pages 28

O-015 Development of mobile fake gasoline analyzer in car by NIR spectroscopy
S.H.Lee, W. B Cho, HJ.Kim, pages 30

O-016 Building computer free sorting devices based on reflection of visible and NIR wavelengths
R. Haff and T. Pearson, pages 32

O-017 Performance of a Portable NIR Instrument "NIR-Gun" for Determining Raw Milk Compositions Using Transmittance
O. Poungchompu, S. Saranwong and S. Kawano, pages 34

O-018 Performance of Fourier Transform NIR Spectrophotometer for Determining Variety Contamination of Thai "KDML105" Rough Rice
P. Supprung, S. Ratree, and S. Saranwong, pages 36

O-019 The Influence of instrumentation on NIR spectral waveforms
T.Okura, K. Sashida, S. Park, S. Saranwong and S. Kawano, pages 37

O-020 AOTF based spectrometer for industrial measurement application
R.Govindaraj, T.Chinnu and V.Venkataraman, pages 40

O-021 Transmission NIR measurement for determination of density of polyethylene pellets
Hoeil Chung, Jaejin Kim, Jihye Yoon and Sora Lim, pages 42

O-022 Monitoring of alcoholic fermentation process by using near-infrared and infrared spectroscopy
T. Genkawa, M. Watari, M. Satou, M. Konta and Y. Ozaki, pages 43

O-023 Determination of Rice Leaf Nitrogen Using Near Infrared Spectroscopy and Partial Least Squares Regression
Guang-Cai ZHANG,, Ping ZHOU, Xiang-Mei YAN, Guo-Lin LIN, Chong-Jun ZHOU, Ning LIU, Xiao-Ri Han, Li-Li ZHAO and Xue-Qiu ZHOU, pages 44

O-024 Detection of Banana Quality by Near Infrared Spectroscopy
Y. Hu, C. Liu, L. Xiong, G. Jiang, K. Guo, pages 46

O-025 The feasibility study of discriminating adulteration milk by the near infrared technology
L.J. Ni, Z.Z.Zhong, C.Zhang, L.G.Zhang, X.Zhang,W.G. Zhang,F.Yan, pages 48

O-026 Compositional Analysis of Pig Manure in sample bag by NIRS
Z. Yang, L. Han, G. Huang, pages 50

O-027 Applying near infrared spectroscopy and electronic nose for prediction of Thai coconut milk
S. Wattanapahu, T. Suwonsichon, S. Kasemsumran, pages 52

O-028 Extractable Protein in Concentrated Latex by Calcium Compounds from Eggshells
Nuchnapa Tangboriboon, Prapaphan Phudkrajang, pages 53

O-029 Influence of human pulse to skin near-infrared spectra
H. Yang, Q. Lu, pages 55

O-030 Moisture Content Determination of Thai Traditional Medicine "Chuntaleela" Powder Using Fourier Transform NIR Reflectance Spectroscopy and a Fibre-optic Probe

S. Ratree, P. Supprung, J.Phunesawas, W. Srivicha, C. Phromkhote, and B. Jannhok, pages 56

O-031 A study on moisture content of Thai Traditional Medicine "Thaat-Bunjob" by using Near Infrared Reflectance Spectroscopy
N.Armussa, O.Poungchompu, B.Suthapinthu, S.Rayan, K.Sintala and K.Worawute, pages 57

O-032 Identify the sham wild ginseng using near-infrared spectroscopy
H.Z. Gao, Z.Q. Peng, H.M. Yang, Y.C. Fan and Q.P. Lu, pages 59

O-033 On-line Kappa Number Determination with Near-infrared Spectroscopy during Kraft Pulping
Y. M. Xie, X. S. Wu, pages 61

O-034 Gas & Liquid Phase Rapid Analysis by NIR Analyzer – Application for Petrochemical Process
H. Tanaka, T. Ohara, D. Ryu, C. Hopkins, pages 63

O-035 A self organizing mapping technique to ensure signature of gasoline supplied at filling stations through NIRS
S.Neeraj, P.Pravin Selvan, K.Shravankumar, V.Venkataraman, pages 64

O-036 NIR Liquid Scanner for detection of explosives in bottles
H. Itozaki, D. Shirotani, K. Matsushita, H. Sato-Akaba and S. Morimoto, pages 66

P-001 Chemometric modeling markup language for near infrared spectroscopy chemometric models
S. Chen, Z. Zhang and Y. Liang, pages 67

P-002 Model Population Analysis for Model Assessment
H-D Li, Q-S Xu and Y-Z Liang, pages 68

P-003 Evaluation of MLR model for the determination of SSC in Whangkeumbae pears by using protable near-infrared spectrometer
Zhuo. Chen, HongWei. Zhao,YingRui. Chen, ZhenRu. Li, and DongHai. Han, pages 69

P-004 Feasibility of Random Forest for robust calibration in near-infrared (NIR) spectroscopy
SangUk Lee, Hoeil Chung, Hangseok Choi and Kyoungjoon Cha, pages 71

P-005 Net Analyte Signal-based Non-destructive Measurement of Firmness in Strawberry Using NIR Spectroscopy
J. Shi, X. Zou, J. Zhao, P. Yin, K. Wang, Z. Chen, pages 72

P-006 Construction of universal quantitative model for determination of decladinosylazithromcyin in azithromcyin injection from different formulations and manufacturers using near infrared spectroscopy
Ji-Xiong Dong, Chang-Qin Hu, pages 74

P-007 Investigation on the rules of spectral range selection in NIR universal quantitative models for cephalosporins for injection
Y. Feng, Z. Ni, C. Hu, pages 76

P-008 Development of a Non-Invasive Blood Glucose Sensor using Near Infrared Spectroscopy

Y. Uwadaira, N. Adachi, A. Ikehata and S. Kawano, pages 78

P-009 **Development of Narrow Band On-Line NIR Analyzer for Detection of Raw Milk Composition**
Y. Tsuda, K. Ikuta, B.M Jinendra, A.A. Gowen and R. Tsenkova, pages 79

P-010 **Feasibility of visible and SW-NIR spectroscopy to detect gamboge disorder in mangosteen fruits**
Sontisuk Teerachaichayut, Anupun Terdwongworakul, Warunee Thanapase, Khanittha Saengkaew and Rachit Suwapanich, pages 81

P-011 **Application of Near Infrared Reflectance Spectroscopy to Feed Analysis in Forage Rice Grain**
M. Amari, O. Enishi and K. Nonaka, pages 83

P-012 **Non-destructive Determination of Palm Oil Content in Palm Fruit by Comparison of Short and Long Wavelength Near Infrared Regions**
S. Kasemsumran, A. Junhiran, W. Thanapase and V. Punsuvon, pages 84

P-013 **Non-destructive Measurement of SSC and Firmness of Pear (Pyrus Communis L.) by Portable Vis/NIR Spectrometer**
Jiahua Wang, Donghai Han, Baoan Liang, pages 86

P-014 **Noninvasive Near-infrared biochemical analysis using the adaptive filtering**
C. Chen, Z.Q.Peng and Q.P.Lu, pages 88

P-015 **Research on Best Testing Site and Effective Optical Path Length of Near Infrared Blood Volume Spectra in Noninvasive Glucose Sensing**
H.Q. Ding, Q.P. Lu, pages 90

P-016 **Optical Characteristics of Wood Investigated by Time-Of-Flight Near Infrared Spectroscopy**
Yohei Kurata, Takaaki Fujimoto and Satoru Tsuchikawa, pages 91

P-017 **Applicability of NIR spectroscopy for drying of garlic**
Eun-Young Kim, Ju-Mi Kim, Sang-Wook Park, Rae-Kwang Cho, pages 93

P-018 **Determination of Nitrogen in Maize Plant Using Near Infrared Spectroscopy and Partial Least Squares Regression**
Guang-Cai ZHANG, Xiang-Mei YAN, Ping ZHOU, Guo-Lin LIN, Chong-Jun ZHOU, Ning LIU, Xiao-Ri Han, Li-Li ZHAO, and Xue-Qiu ZHOU, pages 94

P-019 **Evaluation of fat content and discoloration of tuna flesh by visible/near-infrared spectroscopy**
T. Kimiya, S. Imamura, M. Suzuki, H. Mou, M. Kimura, H. Iga, T. Uehara, K. Yokota, T. Oshima, I. Fusejima, S. Hirokawa, E. Okazaki and Y. Hiraoka, pages 96

P-020 **Evaluation of Organic Matter Content in Organic Fertilizer by NIRS**
C. Yathaputanon, J. Prasatsrisupab, pages 98

P-021 **Evaluation of Protein Content in Milled Rice by NIRS**
O. Jittham, C. Bangwaek, pages 99

P-022 **Examination of Silk Degradation with Near Infrared Spectrum**
Wenting Ma, Xiyun Luo, Jingqing Wu, Kaiyi Zheng, Yiping Du, pages 100

P-023 **Factors Considered in NIRDRS for Evaluating Crop Seed**
F. Zheng, K. HUAN, R. Wang, H. Zhang, and X. Shi, pages 102

P-024 **Identify the growing ages of wild ginseng using near-infrared spectroscopy**

Q.P. Lu and H.Z. Gao, pages 104

P-025 **Near Infrared Spectroscopy for Rapid Detection of Cold Tolerance in Soybean**
B.M Jinendra and R.Tsenkova, pages 105

P-026 **Nondestructive Estimation of Plantation Wood by Near Infrared Spectroscopy**
C. Liu, T. Inagaki, H. Kobori, M. Kojima, H. Yamamoto, F. M. Yamaji, S. Tsuchikawa, pages 107

P-027 **Nondestructive Measurement of Dry Matter and Total Soluble Solids in Papaya by Transmittance Mode NIR Instrument**
W. Thanapase, A. Janhiran, S. Kasemsumran and J. Anusornwongchai, pages 108

P-028 **Potential Application of Near Infrared Spectroscopy on Nondestructive Determination of Reducing Sugar Content and Amino-Acid Components in Potato Tubers**
H. Zhang, Y. Miao, H. Inoue, R. Oikawa, J. Y. Chen, pages 109

P-029 **Quantification of Ginsenosides Content in American Ginseng (*Panax guinquefolium L.*) Using FT-NIR Spectroscopy**
Y. Huang, J. J. Shan, L. Ling, D. Han, pages 111

P-030 **Rapid Analysis of Nitrogen in Apple Leaf Using Near Infrared Spectroscopy from Fresh Leaf Blade Tissue**
G.C. Zhang, Z. Li, X.M. Yan, P. Zhou, G.L. Lin, C.J. Zhou, N. Liu, X.R. Han, C.G. Cheng, L.L. Zhao, X.Q. Zhou, pages 112

P-031 **Similarity Analysis of Agricultural Products' Varieties using Near Infrared Spectroscopy**
C.X. Yu, Y.P. Wu, J.H. Li, X. Ma, J.H. Deng, Y.H. Zhang, L.L. Zhao, Y.J. Zhang, J.R. Mi, L.D. Zhang, pages 114

P-032 **Study on Nondestructive Determination of Amino Acid in Poultry Meat by Near Infrared Spectroscopy**
J. Li，L. Xue，M.H. Liu, pages 116

P-033 **Use of Fourier Transform Near Infrared Reflectance Spectroscopy for Estimating the Levels of Anthocyanin and DPPH Radical Scavenging Activity in Corn-2**
T. Sato1, T. Hatano and A. Sawai, pages 117

P-034 **Nondestructive Estimation of Contents of Functional Constituents in Soybean Seeds by Fourier Transform Near Infrared Reflectance Spectroscopy**
T. Sato, T. Hatano, and Y. Nishiba, pages 119

P-035 **Transmission NIR spectroscopy for discrimination of geographical origins of rice**
Jaejin Kim, Jihye Yoon, Si Jun Park and Hoeil Chung, pages 121

P-036 **Trial Production of Sesame Oil Using Geographycal Origin Certification System of Sesame Seeds by Near Infrared Spectroscopy**
Eun-Young Kim, Miryeong Sohn, Rae-Kwang Cho, pages 122

P-037 **Using Near Infrared (NIR) Spectroscopy to Discrimination of the Co-products from Bio-Ethanol Processing in Western Canada**
D. Damiran and P. Yu, pages 123

P-038 **Using Near Infrared Spectroscopy to Predict Nutritional Parameters of Soybean Meals**
David Z. Zhu, Cécile Gady and Kevin Y. Liu, pages 125

P-039 **Using NIR Spectroscopy to Examine E. coli in Washed Vegetable Water**
Charuwan Bangwaek and J. Phumprasert, pages 126

P-040 **Quantitative Determination of Chemical Constituents in Sugarcane Bagasse by using Near Infrared Spectroscopy**
J. Prasatsrisupub, S. Kasemsumran, N. Suttiwijitpukdee, W. Thanapase, S. Miyata and K. Iiyama, pages 127

P-041 **Nondestructive prediction of wood stress condition in axial compressive loading by near infrared spectroscopy**
T. Fujimoto, K. Matsumoto and S. Tsuchikawa, pages 129

P-042 **Prediction of Total Solids, Total Soluble Solids and Protein Content of Oyster Sauces by Near Infrared Spectroscopy with moving window partial least square regression**
N. Baitrakool, T. Suwonsichon, S. Kasemsumran and W. Thanapase, pages 131

P-043 **Differential approach to O-H band of phosphoric acid and phosphate aqueous solutions**
A. Ikehata and S. Kawano, pages 132

P-044 **NIR for monitoring mango quality ripened by calcium carbide**
P. Rungpichayapichet, R. Suwapanich, B. Innawong, P. Khuwijtjaru and B. Mahayothee, pages 133

P-045 **The Study of Non-Destructive Evaluation Method of Paper Records Materials by NIR Spectroscopy**
YH. Han, SU.Yi, HJ.Kim, pages 135

P-046 **Authenticity Identification of the Melamine Tableware Using Near Infrared Spectroscopy**
Xian Zhang, Hongfu Yuan, Zheng Guo, Chunfeng Song, Xiaoyu Li, Jinchun Xie, pages 137

P-047 **Feasibility Study of Detection of Alkyl Surfactants Content in Detergent Using Near Infrared Spectroscopy**
Chun Feng Song, Hong Fu Yuan, Jin Chun Xie, Xian Zhang, Zheng Guo, Xiao Yu Li, pages 139