

Tuesday November 29

11:15 ~ 11:30

Opening Remarks

Prof. Hoecil Chung

11:30 ~ 12:00

Spectral imaging technologies for agricultural applications

Plenary Presentation (Dr. Moon S. Kim)

Session1(Agricultural food material)

Session chair: Prof. Geonwoo Kim

12:00 ~ 12:20

Estimation of total alkaloids in Cinchona bark using a developed portable NIR

Dilip Sing, Subhadip Banerjee, Ranajoy Mallik, Kalyan Majumdar, Uden Angmu Yonzone, Samuel Rai, Amitabha Bandyopadhyaya, and Rajib Bandyopadhyay (Keynote speaker)

12:20 ~ 12:35

The Near Infrared Spectroscopy Model Lowest Limit of Detection and Quantification for Nutrient in Durian (CV Monthong) Leaf Evaluation

Thitima Phanomsophon, Natthapon Jaisue, Akarawhat Worphet, Nukoon Tawinteung, Lampan Khurnpoon and Panmanas Sirisomboon

12:35 ~ 12:50

An experimental study of light scattering changes in kiwifruit during storage using time-resolved transmittance spectroscopy

Te Ma, Tetsuya Inagaki, Peixin Xiao, and Satoru Tsuchikawa

12:50 ~ 13:05

FT-NIR, Digital NIR spectroscopic and chemometric models for moisture and protein content determining of cassava flour

Panuwat Supprung, Dachawat Munklang, Prasit Sopa

13:05 ~ 13:20

Exploratory of precision in spectral acquisition and reference methodology of NIR spectroscopy in evaluation of crosslink density of natural rubber medical glove

Suppakit Howvimanporn, Jiraporn Sripinyowanich Jongyingcharoen, Thanaphol Salabsee, Adisak Kongwaree, Chin Hock Lim, Suntaree Dachapan, Kittisak Phetpan, Jetsada Posom, Panmanas Sirisomboon

13:20 ~ 13:35

Discrimination of olive oils by geographical origin using a regularized logistic regression model

Soh Chin Gi, Zhu Ying

13:35 ~ 13:50

Nondestructive measurement of inside quality of eggs using Vis/NIR spectrometer

Semyalo Dennis , Juntae Kim , Collins Wakholi , Byoung-Kwan Cho

13:50 ~ 14:05

Preliminary of using Portable Micro NIR Spectrometer for Measuring of Microbial load in Chicken Meat

Milka Nakarmi, Anjana Singh, Dev Raj Joshi, Reshma Tuladhar, Bhupendra Lama, Bijendra Shrestha, Jetsada Posom, Panmanas Sirisomboon, Bim Prasad Shrestha

14:05 ~ 14:20 **Strategies for the content determination of capsaicin and identification of the adulterated pepper powder using a hand-held near-infrared spectrometer**

Sijun Wu, Wenlong Li

14:20 ~ 14:35 **Convolutional Neural Network Prediction of the Anthocyanin Content in Purple Maize Using NIR Hyperspectral Imaging**

Nam-Wook Kim, Ju-Kyong Lee, and Changyeun Mo

14:35 ~ 14:50 Break

14:50 ~ 15:15 Company presentation

Session 2(Hyperspectral imaging)

Session chair: Prof. Hoonsoo Lee

15:15 ~ 16:00 **ANS2022 General meeting**

16:00 ~ 16:20 **Application of hyperspectral imaging for quality measurement of agricultural materials**

Byoung-Kwan Cho (Keynote speaker)

16:20 ~ 16:35 **Sugar content imaging of strawberries using a near-infrared hyperspectral camera and laser displacement meter**

Hayato Seki, Haruko Murakami, Te Ma, Li Bin, Satoru Tsuchikawa, Tetsuya Inagaki

16:35 ~ 16:50 **Nondestructive detection of dehusked young coconut meat thickness using push-broom near-infrared hyperspectral imaging system**

Dharell B. Siano, Anupun Terdwongworakul

16:50 ~ 17:05 **Hyperspectral Infrared Imaging for Non-destructive measurement of Chemical Composition for Soybean Seed**

Rizkiana Aulia, Wang-Hee Lee, Kyung-Hwan Kim, Jeong-Ho Baek, Byoung-Kwan Cho

17:05 ~ 17:20 **Geometrical influence correction of apple's near infrared hyperspectral images for early bruise detection**

Bin Li, Leshang Bai, Te Ma, Tetsuya Inagaki, Satoru Tsuchikawa

17:20 ~ 17:35 **Hyperspectral short wave near infrared (SWIR) imaging for nondestructive measurement of chemical composition of beef**

Juntae Kim, Yun-kil Kwon, Byoung-Kwan Cho

17:35 ~ 17:50 **Discrimination of weedy rice using near infrared, spectroscopy (NIR) and hyperspectral NIR image combined with modified self-organizing maps (SOMs)**

Sureerat Makmuang, Sanong Ekgasit, Kanet Wongravee

17:50 ~ 18:05 **Learning hyperspectral image combined 3D-CNN and data augmentation for bee mite classification**

Hong-Gu Lee, Min-Jee Kim, Su-bae Kim, Changyeun Mo

Wednesday November 30

- 11:30 ~ 12:00 **Aspects to increase the robustness of NIRs prediction models**
Plenary speaker(Prof. Dra. Lola Pérez-Marín)
- Session 3(Basic science and chemometrics)**
Session chair: Prof. Hoeil Chung
- 12:00 ~ 12:20 **Extended molar absorption coefficients of confined water in reverse micelles**
Akifumi Ikehata (Keynote speaker), Ken Nakamura, and Yukihiro Ozaki
- 12:20 ~ 12:40 Chemometric studies for analyzing temperature-dependent near-infrared spectra
Xueguang Shao (Keynote speaker), Chaoshu Duan, Wensheng Cai
- 12:40 ~ 12:55 **Upgrading the model performance for rapid prediction of the ash content of biomass using NIR spectroscopy**
Bijendra Shrestha, Jetsada Posom, Bim Prasad Shrestha, Panmanas Sirisomboon
- 12:55 ~ 13:10 **Application of a portable Near Infrared spectrometer for estimation of theaflavin in black tea**
Dilip Sing, Santanu Sabhapondit, Rajib Bandyopadhyay and Ajanto Kumar Hazarika
- 13:10 ~ 13:25 **Application of Surface-Enhanced Raman Scattering (SERS) Au Nano gap 2 substrates for Carbaryl pesticide assessment in food matrices in conjunction with Chemometrics**
Rahul Joshi, Byoung-Kwan Cho
- 13:25 ~ 13:40 **Numerical analysis of near-infrared light scattering characteristics by molecular dynamics and electromagnetic wave theory**
Hyeonwoo Na, Hiroyuki Fujii, Kazumichi Kobayashi, Masao Watanabe
- 13:40 ~ 13:55 **Spectral acquisition precision and standard error of laboratory of VIS and NIR spectroscopy in evaluation of crosslink density of natural rubber prevulcanized latex**
Suntaree Dachapan, Chin Hock Lim, Suppakit Howvimanporn, Kittisak Phetpan, Jiraporn Sripinyowanich Jongyingcharoen, Thanaphol Salabsee, Adisak Kongwaree, Panmanas Sirisomboon, Jetsada Posom
- 13:55 ~ 14:10 **Firefly algorithm combined with extreme learning machine for spectral quantitative analysis of complex samples**
Prisca Mpango, Hao Sun, Shuyu Wang, Xihui Bian
- 14:10 ~ 14:20 Break
- 14:20 ~ 14:45 Company presentation

Session 4(Advanced technology and pharmaceutical application)

Session chair: Prof. Changyeun Mo

- 14:45 ~ 15:05 **Chemometrics and deep learning models for classification of spectroscopic data with application to detection of colon polyps**
Ying Zhu (Keynote speaker)
- 15:05 ~ 15:25 **A portable moisture content meter using near infrared spectroscopy with real-time data report on a smartphone**
Sirinad Noypitak(Keynote speaker), Sutida Ruangkhasap, Anupun Terdwongworakul, Naridol Paunrat, Amornrit Puttipipatkajorn, Amorndej Puttipipatkajorn
- 15:25 ~ 15:40 **Investigation on influence of tissue oxygen saturation Sto_2 using near infrared spectroscopy for prognosis of dengue hemorrhagic fever in Indian children**
Neelamegam D and P. Bhuvaneswari
- 15:40 ~ 15:55 **Study on the dissolution profiles prediction of sinomenine hydrochloride sustained-release tablets using near-infrared spectroscopy**
Long Wang, Wenlong Li
- 15:55 ~ 16:10 **1D-CNN model development for soluble solids content evaluation of apple using Vis/NIR spectroscopy**
Doo-Jin Song, Seung-Woo Chun, Soo-Hwan Park, Min-Jee Kim, and Changyeun Mo
- 16:10 ~ 16:25 **A strategy for herbal medicine quality evaluation based on end-to-end signal multivariate transformation: from NIR spectroscopy to chromatography**
Tongcan Cui, Wenlong Li
- 16:25 ~ 16:40 **Exploring for NIR quantification of captured polyethylene particles in perfluorohexane**
Yunjung Kim, Hoeil Chung
- 16:40 ~ 16:55 **Wavelength-dependent interference effects on the light scattering in fat emulsions using time-dependent diffuse reflectance measurements**
Yuki Inoue, Hiroyuki Fujii, Goro Nishimura, Kazumichi Kobayashi, Masao Watanabe
- 16:55 ~ 17:10 **NIR spectroscopic identification of gallbladder cancer through analysis of human bile**
Eunjin Jang, Woosuk Sohng, Young Mee Jung and Hoeil Chung
- 17:10 ~ 17:25 **Deep learning algorithm development for early detection of *botrytis cinerea* infected strawberry fruit using fluorescence hyperspectral imaging**
Seung-Woo Chun, Doo-Jin Soing, Kwang-Ho Lee, Min-Jee Kim, Kyoung-Su Kim, Changyeun Mo