Sagar Dhakal

Contact information
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Education

1. **PhD**: Research in optical sensor/ instrumentation and data analysis
2. **M.Sc**: Research in optical sensor/instrumentation, image processing and data
3. **Chinese Language**, Beijing Language and Cultural University, Beijing, (2009)
4. **Bachelor in Mechanical Engineering**, Kathmandu University, Nepal (2008)

Research Interests

1. Raman spectroscopy and imaging
2. Pattern recognition and machine learning
3. Design and development of optical instrument
4. Non-destructive detection of food quality and safety
5. Rapid detection of food adulterants
6. Data Analysis
7. Computer vision and image processing
8. Control, sensing and automation technology
9. Agricultural Robotics
10. Internet of things (IOT)
11. Scientific manuscript writing, editing and reviewing

List of Publications

Peer- Reviewed English Publications

1. Y. Peng, **S. Dhakal**: Optical Methods and Techniques for Meat Quality Inspection. Invited Review Paper by *Transactions of the ASABE*. (Accepted)
2. **S. Dhakal**, Y. Li, Y. Peng, K. Chao, J. Qin, L. Guo: Prototype Instrument Development for Non-Destructive Detection of Pesticide Residue in Apple Surface Using Raman Technology. *Journal of Food Engineering*, 123: 94-103, 2014.
3. **S. Dhakal**, J. Wu, J. Chen, Y. Peng: Prediction of Egg's Freshness using Backward Propagation Neural Network. *Applied Engineering in Agriculture*, 27(2): 279-285, 2011.
4. **S. Dhakal**, Y. Li, Y. Peng, G. Hui: Raman based optical instrument development for rapid and non-destructive detection of pesticide in apple surface. *International Agriculture Engineering Journal*, 22 (3): 62-69, 2013.
5. Y. Li**, S. Dhakal**, Y. Peng: A machine vision system for identification of micro-crack in egg shell. *Journal of Food Engineering*, 109 (1), 127-137, 2012**.**

6. Y. Zhu, **S. Dhakal**, Y. Peng, W. Caiping: Progress and trend of pork meat detection technology: A review. International Agricultural Engineering Journal, 22(4): 72-80, 2013.
7. J. Wu, Y. Peng, W. Wang, J. Chen, J. Shan, **S. Dhakal**: Prediction of beef quality attributes using VIS/NIR hyperspectral scattering imaging technique. *Journal of Food Engineering*, 109(2), 267-273, 2012.
8. Feifei Tao, Yankun Peng: Wei Wang, Yongyu Li, Kuanglin Chao, **Sagar Dhakal**: Simultaneous determination of tenderness and escherichia coli contamination of pork using hyperspectral scattering technique. *Meat Science*, 90(3), 851-857, 2012.
9. Huang Hui, Peng Yankun, Tang Xiuying, **Dhakal Sagar**, Wang Xiu: Rapid detection of chlorophyll content in corn leaves by using VIS/NIR hyperspectral imaging. *International Agricultural Engineering Journal*, 21(1), 17-25, 2012.

Peer Reviewed Chinese Publications

1. Zhang Haiyun, Peng Yankun, Zao Songwei, **Sagar Dhakal**: Nondestructive Real-time Detection System for Assessing Main Quality Parameters of Fresh Pork Assessing Main Quality Parameters of Fresh Pork. *Transactions of the Chinese Society of Agricultural Machinery*, 4(4):146-151, 2013.
2. Zhao Juan, Peng Yankun, **Sagar Dhakal**, Zhang Leilei: On-line detection of apple surface defect based on images. *Transactions of the Chinese Society of Agricultural Machinery*, 44, 260-263, 2013.
3. Li Yongyu, Peng Yankun, Sun Yunyun, **Dhakal Sagar**, Guo Langhua: Detection of trichlorfon pesticide on apple's surface based on Raman spectroscopy. *Journal of Food Safety and Quality*, 3(6): 672-675, 2012.

Conference and Proceedings

1. **S. Dhakal**, K. Chao, J. Qin, and M.S. Kim. Raman-spectroscopy-based chemical contaminant detection in milk powder. SPIE Annual International Meeting, April 21-24, 2015, Baltimore, Maryland, USA.
2. K. Chao, **S. Dhakal**, J. Qin, M.S. Kim, Y. Peng, and W. F. Schmidt. Depth of penetration of a 785nm wavelength laser in food powders. SPIE Annual International Meeting, April 21-24, 2015, Baltimore, Maryland, USA.
3. **S. Dhakal**, Y. Peng, Y. Li, K. Chao, J. Qin, L. Zhang, and T. Xu. Rapid detection of chlorpyrifos pesticide residue concentration in agro-product using Raman spectroscopy. SPIE Annual International Meeting, May 5-9, 2014, Paper No. 9108-11, Baltimore, Maryland USA.
4. **S. Dhakal**, Y. Li, and Y. Peng: Nondestructive Detection of Pesticide Residue Concentration in Apple by Raman Spectral Technology. ASABE Annual International Meeting, 21-25 July, 2013, Paper No: 1587022, Missouri, Kansas, USA.
5. **S. Dhakal**, Y. Li, Y. Peng, K. Chao, and J. Qin: Optical Instrument Development for Detection of Pesticide Residue in Apple Surface. SPIE Annual International Meeting, April 29-May 3, 2013, Paper No. 8721-22, Baltimore, Maryland USA.
6. **S. Dhakal**, Y. Li, Y. Peng, and Y. Sun: System development for non-destructive detection of pesticide residue in apple. ASABE Annual International Meeting, July 29- August 1, 2012, Paper No: 12-1341178, Dallas, Texas, USA
7. Y. Peng, **S. Dhakal**: Micro Crack Detection in Egg Shell using Machine Vision. ASABE Annual International Meeting, August 7-10, 2011, Paper No. 1110807, Louisville, Kentucky, USA.
8. **S. Dhakal**, Y. Li, Y. Peng: Rapid and nondestructive detection of pesticide residue in apple surface by using Raman technology. CIGR, November 3-7 2013, Guangzhou, China.
9. Y. Li, Y. Sun, Y. Peng**, S. Dhakal**, K. Chao, Q. Liu: Rapid detection of pesticide residue in apple based on Raman spectroscopy. Proc. SPIE 8369, 83690I, 2012, Baltimore, Maryland, USA.
10. L. Zhang, Y. Peng, **S. Dhakal**, Y. Song, J. Zhao, S. Zhao: Rapid non-destructive assessment of pork edible quality using VIS/NIR spectroscopic technique. SPIE Annual International Meeting, April 29-May 3, 2013, Paper No. 8721-06, Baltimore, Maryland USA.

11. J. Zhao, Y. Peng, **S. Dhakal**, L. Zhang, A. Sasao: A noninvasive technique for real-time detection of bruises in apple surface based on machine vision. SPIE Annual International Meeting, April 29-May 3, 2013, Paper No. 872100, Baltimore, Maryland USA.
12. L. Zhang, Y. Peng, **S. Dhakal**, F. Tao, Y. Song, S. Zhao: Spoilage Detection of Chilled Meat during Shelf Life by using Hyperspectral Imaging Technique. ASABE Annual International Meeting, July 21-July 24, 2013, Paper No. 1587037, Kansas City, Missouri, USA.
13. Y. Liu, Y. Peng, **S. Dhakal**, L. Zhang, T. Zhou: Influence of Distance between Optical Fiber Probe and Sample on Pork Quality Detection Results. ASABE Annual International Meeting, July 21-July 24, 2013, Paper No. 1586998, Kansas City, Missouri, USA.
14. Y. Peng, J. Zhao, **S. Dhakal**, T. Zhou: Real Time Detection of Natural Bruises in Apple Surface using Machine Vision. ASABE International Meeting, July 29- August 1, 2012, Paper No: 12-1341180, Dallas, Texas, USA
15. F. Tao, X. Tang, Y. Peng, **S. Dhakal**: Classification of Pork Quality Characteristics by Hyperspectral Scattering Technique. ASABE International Meeting, July 29- August 1, 2012, Paper No: 12-1341184, Dallas, Texas, USA
16. H. Zhang, Y. Peng, W. Wang, S. Zhao, **S. Dhakal**: Non-Destructive Detection of Water Content in Fresh Pork based on Visual/Near-Infrared Spectrum. ASABE International Meeting, July 29-August 1, 2012, Paper No: 12-1341179, Dallas, Texas, USA
17. Y. Li, L. Zhang, Y. Peng, X. Tang, K. Chao, **S. Dhakal**: Hyperspectral imaging technique for determination of pork freshness attributes. SPIE / Defense, Security and Sensing, April 26-27, 2011, Paper No. 8027-16, Sensing for Agriculture and Food Quality and Safety Vol. 8027, pp. 80270H1-H9, Orlando, Florida, USA
18. Y. Peng, F. Tao, Y. Li, W. Wang, J. Chen, J. Wu, **S. Dhakal**: Rapid detection of total viable count of chilled pork using hyperspectral scattering technique. SPIE / Defense, Security and Sensing, April 6-7, 2010, Paper No. 7676-21, Sensing for Agriculture and Food Quality and Safety Vol. 7676, pp. 76760K1-K8, Orlando, Florida, USA
19. Y. Peng, J. Wu, J. Chen, W. Wang, **S. Dhakal**: A hyperspectral imaging system for prediction of beef internal quality. ASABE Annual International Meeting, June 20-June 23, 2010, Paper No. 1009886, Pittsburgh, Pennsylvania, USA
20. **S. Dhakal**, Y. Li, Y. Peng, L. Guo, and J. Zhao: Control System for Real Time Detection of Pesticide Residue in Apple Surface by Optical Technology. CSAM International Annual Meeting 2012, October 26th- October 30th, 2012. Hangzhou, China.
21. L. Zhang, Y. Peng, Y. Liu, **S. Dhakal**, J. Zhao: Nondestructive Evaluation of Chilled Pork TVC by Comparison between Reflectance and Scattering Spectral Profiles from Hyperspectral Images. CIGR, November 3-7 2013, Guangzhou, China.
22. Sun Yunyun, Li Yongyu, Peng Yankun, Sagar Dhakal, Liu Qiaoqiao, Ouyang Wen: Rapid detection of apple pesticide residue based on Raman spectroscopy. Chinese Society of Agriculture Engineering Annual Meeting 2011, September 25-27 2011, Chongqing, China.

Patents and Software Copyright (Submitted in China)

1. Peng Yankun, **Sagar Dhakal**, Li Yongyu, Zhao Juan, Lin Wan. Software for real time detection and analysis of pesticide residue in fruit surface. Software Acceptance No: 2013SRBJ0800 (Accepted)
2. Peng Yankun, **Sagar Dhakal**, Li Yongyu, Guo Hui, Akira Sasao. Non-destructive system for rapid detection of pesticide residues in samples.

   Utility Patent No: ZL 2013 2 0423170.1 (Accepted)
3. Li Yongyu, Peng Yankun, **Sagar Dhakal**, Sun Yunyun, Chen Jingjing. A device to position and rotate fruit for its quality detection.
   Application Date: 2013-07-16, Application No: 201210089044.7. Invention Patent.
4. Peng Yankun, Sun Yunyun, Li Yongyu, **Sagar Dhakal**, Chen Jingjing. Device to position and rotate fruit samples for detection of pesticide residue in fruits surface. Invention Patent

Application Date: 2012-03-29, Application No: CN102645405A.

5. Peng Yankun, **Sagar Dhakal**, Li Yongyu, Zhang Leilei, Akira Sasao. Application of Raman spectroscopy based optical instrument for pesticide residue detection in round fruits. Invention patent. Application Date: 2013-11-19, Application No: 201310576201.1