Presentation

15 May 2018

Development of online whole-surface apple inspection system using line-scan hyperspectral imaging technology (Conference Presentation)

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Proceedings Volume 10665, Sensing for Agriculture and Food Quality and Safety X; (/conference-proceedings-of-spie/10665.toc) 1066503 (2018) https://doi-org.libaccess.lib.mcmaster.ca/10.1117/12.2307235 (https://doi-org.libaccess.lib.mcmaster.ca/10.1117/12.2307235)

Event: SPIE Commercial + Scientific Sensing and Imaging (/conference-proceedings-of-spie/browse/SPIE-Defense-Commercial-Sensing/SPIE-Commerical-Sensing-and-Imaging/2018), 2018, Orlando, FL, United States

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Abstract

Applications of machine vision techniques are prevalent for quality inspection of foods. For safety inspection of fruits such as apples to detect biological contaminants, a method to capture and reconstruct a whole-surface of apple is needed. In this paper, we present a reconstruction method for whole-surface imaging of apples with the use of a line-scan hyperspectral imaging technique. In addition, the development of online whole-surface inspection technology for round-fruits is presented.

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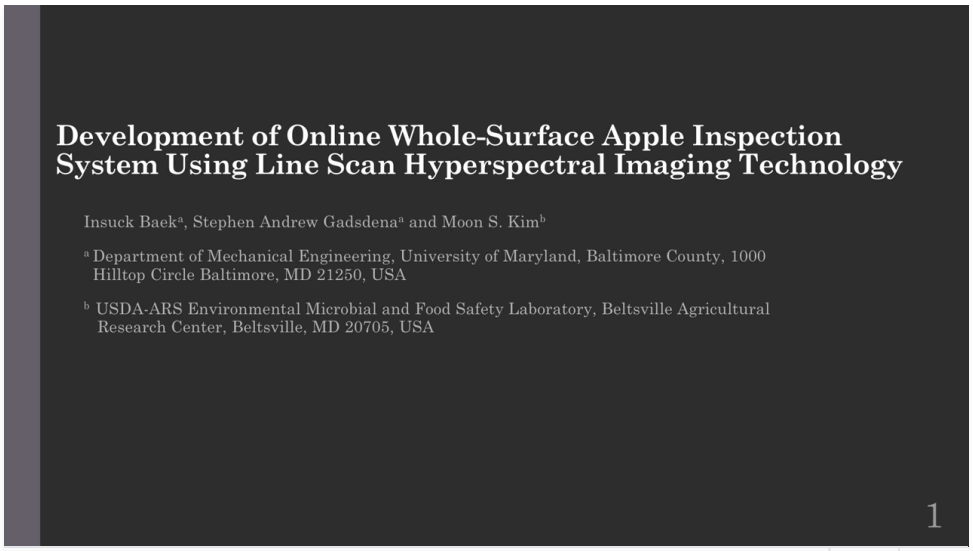
KEYWORDS

Inspection

Hyperspectral imaging

Line scan image sensors



Transcript

00:00
Good morning, everyone. My name is Insuck Baek. I'm [INAUDIBLE] at the University of Maryland of Baltimore County. The proposal of my presentation today is development of online whole-surface for inspection system using line scan hyperspectral imaging technology.

00:24
The apple can be consumed by variable forms. And the consumer demands the high-quality apple. Moreover, high-quality apple is important for farmer, since it's directed connected to their pricing schemes. However, myriads of hyper-imaging studies have paid attention to finding optimal spectral bands and imaging processing approaches.

00:59
Most of the currently used automated grading systems for apples are based on the color or size sorting. This video is showing a client's sorting system for finding defects on the planned object. The defect on the land object is inspected by manual sorting. It is very laborious and uneconomical-- inefficient.

01:34
For inspecting, inspect the defect on the land object, the system should be able to present whole surface images. But a single camera cannot be [INAUDIBLE] area because camera is perpendicular to the target, so they have not covered a rotating area.

02:08
If we use the [INAUDIBLE] camera, we can cover the whole surface imaging. But this system would be

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In-Suck Baek (/profile/Insuck.Baek-4149), Stephen Andrew Gadsden (/profile/Stephen.Gadsden-105099), and Moon S. Kim (/profile/Moon.Kim-29716) "Development of online whole-surface apple inspection system using line-scan hyperspectral imaging technology (Conference Presentation)", Proc. SPIE 10665, Sensing for Agriculture and Food Quality and Safety X, 1066503 (15 May 2018); https://doi-org.libaccess.lib.mcmaster.ca/10.1117/12.2307235 (https://doi-org.libaccess.lib.mcmaster.ca/10.1117/12.2307235)

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