PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 11754

, "Front Matter: Volume 11754," Proc. SPIE 11754, Sensing for Agriculture and Food Quality and Safety XIII, 1175401 (30 April 2021); doi: 10.1117/12.2598641

Event: SPIE Defense + Commercial Sensing, 2021, Online Only

PROCEEDINGS OF SPIE

Sensing for Agriculture and Food Quality and Safety XIII

Moon S. Kim
Byoung-Kwan Cho
Editors

12–16 April 2021
Online Only, United States

Sponsored and Published by
SPIE

Volume 11754

Proceedings of SPIE 0277-786X, V. 11754

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Sensing for Agriculture and Food Quality and Safety XIII, edited by Moon S. Kim,
Byoung-Kwan Cho, Proc. of SPIE Vol. 11754, 1175401 · © 2021 SPIE
CCC code: 0277-786X/21/\$21 · doi: 10.1117/12.2598641

Proc. of SPIE Vol. 11754 1175401-1

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIDigitalLibrary.org.

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:

Author(s), "Title of Paper," in *Sensing for Agriculture and Food Quality and Safety XIII*, edited by Moon S. Kim, Byoung-Kwan Cho, Proc. of SPIE 11754, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X
ISSN: 1996-756X (electronic)

ISBN: 9781510643451
ISBN: 9781510643468 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)
SPIE.org
Copyright © 2021 Society of Photo-Optical Instrumentation Engineers (SPIE).

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIE. DIGITAL LIBRARY
SPIDigitalLibrary.org

Paper Numbering: A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

Contents

NIR SPECTROSCOPY

- 11754 02 **Near infrared methodology for growth monitoring of spinach plants in the field** [11754-1]
- 11754 03 **Classification by bitterness of intact almonds analysed in bulk using NIR spectroscopy** [11754-2]
- 11754 05 **Evaluation of olive oil quality using a miniature spectrometer: a machine learning approach**
[11754-4]

RAMAN SPECTROSCOPY AND IMAGING

- 11754 08 **Near-infrared hyperspectral imaging for identification of aflatoxin contamination on corn kernels** [11754-7]

HYPERSENSPECTRAL IMAGING

- 11754 0B **Hyperspectral imaging for the determination of the main unsaturated fatty acid distribution in shelled almonds analysed in bulk** [11754-10]

UAV-BASED IMAGING

- 11754 0F **Accuracy and reliability of predictions of *E. coli* concentrations in water of irrigation ponds from drone-based imagery as affected by parameters of the random forest algorithm** [11754-14]
- 11754 0G **UAV-based agricultural monitoring and data acquisition system for precision farming**
[11754-15]

BIOSENSING

- 11754 0K **Towards a field deployable pathogen detection system by quartz-crystal microbalance**
[11754-18]

POSTER SESSION

- 11754 0O **Spatial scattering Raman spectral characteristics of clenbuterol [11754-22]**
- 11754 0Q **Hazelnuts classification by hyperspectral imaging coupled with variable selection methods [11754-24]**