

# Renfu Lu

## List of Publications by Year in descending order

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140  
papers

6,448  
citations

57758

44  
h-index

71685

76  
g-index

142  
all docs

142  
docs citations

142  
times ranked

3164  
citing authors

#	ARTICLE	IF	CITATIONS
1	Automated Infield Sorting and Handling of Apples. Agriculture Automation and Control, 2021, , 267-295.	0.6	1
2	Detection of Chilling Injury in Pickling Cucumbers Using Dual-Band Chlorophyll Fluorescence Imaging. Foods, 2021, 10, 1094.	4.3	7
3	Deep learning-based apple detection using a suppression mask R-CNN. Pattern Recognition Letters, 2021, 147, 206-211.	4.2	68
4	Detection of subsurface bruising in fresh pickling cucumbers using structured-illumination reflectance imaging. Postharvest Biology and Technology, 2021, 180, 111624.	6.0	20
5	Development and evaluation of an apple infield grading and sorting system. Postharvest Biology and Technology, 2021, 180, 111588.	6.0	33
6	System design and control of an apple harvesting robot. Mechatronics, 2021, 79, 102644.	3.3	40
7	Measurement of optical properties of fruits and vegetables: A review. Postharvest Biology and Technology, 2020, 159, 111003.	6.0	130
8	Spatial-frequency domain imaging coupled with frequency optimization for estimating optical properties of two-layered food and agricultural products. Journal of Food Engineering, 2020, 277, 109909.	5.2	23
9	Enhancing chlorophyll fluorescence imaging under structured illumination with automatic vignetting correction for detection of chilling injury in cucumbers. Computers and Electronics in Agriculture, 2020, 168, 105145.	7.7	20
10	Detection of internal defect of apples by a multichannel Vis/NIR spectroscopic system. Postharvest Biology and Technology, 2020, 161, 111065.	6.0	60
11	Hyperspectral imaging technology for quality and safety evaluation of horticultural products: A review and celebration of the past 20-year progress. Postharvest Biology and Technology, 2020, 170, 111318.	6.0	123
12	siriTool: A Matlab Graphical User Interface for Image Analysis in Structured-Illumination Reflectance Imaging for Fruit Defect Detection. Transactions of the ASABE, 2020, 63, 1037-1047.	1.1	6
13	Effects of optical variables in a single integrating sphere system on estimation of scattering properties of turbid media. Biosystems Engineering, 2020, 194, 82-98.	4.3	17
14	Evaluation of fungal infection in peaches based on optical and microstructural properties. Postharvest Biology and Technology, 2020, 165, 111181.	6.0	14
15	Assessment of the optical properties of peaches with fungal infection using spatially-resolved diffuse reflectance technique and their relationships with tissue structural and biochemical properties. Food Chemistry, 2020, 321, 126704.	8.2	23
16	&lt;i&gt;siriTool: a Matlab Graphical User Interface for Image Analysis in Structured-illumination Reflectance imaging for Fruit Defect Detection&lt;i&gt;. , 2019, , .		0
17	Structured-illumination reflectance imaging for the detection of defects in fruit: Analysis of resolution, contrast and depth-resolving features. Biosystems Engineering, 2019, 180, 1-15.	4.3	28
18	Detection of early decay in peaches by structured-illumination reflectance imaging. Postharvest Biology and Technology, 2019, 151, 68-78.	6.0	57

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19	A stepwise method for estimating optical properties of two-layer turbid media from spatial-frequency domain reflectance. <i>Optics Express</i> , 2019, 27, 1124.	3.4	10
20	Prediction of tomato firmness using spatially-resolved spectroscopy. <i>Postharvest Biology and Technology</i> , 2018, 140, 18-26.	6.0	20
21	Structured-illumination reflectance imaging coupled with phase analysis techniques for surface profiling of apples. <i>Journal of Food Engineering</i> , 2018, 232, 11-20.	5.2	26
22	A two-step parameter optimization algorithm for improving estimation of optical properties using spatial frequency domain imaging. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2018, 207, 32-40.	2.3	19
23	Prediction of canned black bean texture ( <i>Phaseolus vulgaris</i> L.) from intact dry seeds using visible/near infrared spectroscopy and hyperspectral imaging data. <i>Journal of the Science of Food and Agriculture</i> , 2018, 98, 283-290.	3.5	29
24	Prediction of Cooking Time for Soaked and Unsoaked Dry Beans ( <i>Phaseolus vulgaris</i> L.) Using Hyperspectral Imaging Technology. <i>The Plant Phenome Journal</i> , 2018, 1, 1-9.	2.0	9
25	Design Features and Bruise Evaluation of an Apple Harvest and In-Field Presorting Machine. <i>Transactions of the ASABE</i> , 2018, 61, 1135-1144.	1.1	17
26	Measuring the optical properties of two-layer agricultural tissue with a sequential method from spatially-resolved diffuse reflectance, Part I: Analysis and simplification. , 2018, , .		0
27	&lt;i>DETECTION OF SURFACE AND SUBSURFACE DEFECTS OF APPLES USING STRUCTURED-ILLUMINATION REFLECTANCE IMAGING WITH MACHINE LEARNING ALGORITHMS&lt;/i>, , 2018, , .		1
28	Assessment of tomato soluble solids content and pH by spatially-resolved and conventional Vis/NIR spectroscopy. <i>Journal of Food Engineering</i> , 2018, 236, 19-28.	5.2	67
29	Deep Feature Representation with Stacked Sparse Auto-Encoder and Convolutional Neural Network for Hyperspectral Imaging-Based Detection of Cucumber Defects. <i>Transactions of the ASABE</i> , 2018, 61, 425-436.	1.1	33
30	Fast Bi-dimensional empirical mode decomposition as an image enhancement technique for fruit defect detection. <i>Computers and Electronics in Agriculture</i> , 2018, 152, 314-323.	7.7	27
31	Quality assessment of tomato fruit by optical absorption and scattering properties. <i>Postharvest Biology and Technology</i> , 2018, 143, 78-85.	6.0	48
32	A Review of Bin Filling Technologies for Apple Harvest and Postharvest Handling. <i>Applied Engineering in Agriculture</i> , 2018, 34, 687-703.	0.7	18
33	Structured Illumination Reflectance Imaging for Enhanced Detection of Subsurface Tissue Bruising in Apples. <i>Transactions of the ASABE</i> , 2018, 61, 809-819.	1.1	21
34	Improved algorithm for estimating the optical properties of food products using spatially-resolved diffuse reflectance. <i>Journal of Food Engineering</i> , 2017, 212, 1-11.	5.2	17
35	Phase analysis for three-dimensional surface reconstruction of apples using structured-illumination reflectance imaging. , 2017, , .		1
36	Development of a multichannel hyperspectral imaging probe for food property and quality assessment. <i>Proceedings of SPIE</i> , 2017, , .	0.8	0

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37	Finite element simulation of light transfer in turbid media under structured illumination. , 2017, , .		0
38	Histogram-based automatic thresholding for bruise detection of apples by structured-illumination reflectance imaging. Biosystems Engineering, 2017, 160, 30-41.	4.3	49
39	Using composite sinusoidal patterns in structured-illumination reflectance imaging (SIRI) for enhanced detection of apple bruise. Journal of Food Engineering, 2017, 199, 54-64.	5.2	21
40	Visible/shortwave near infrared spectroscopy and hyperspectral scattering for determining bulk density and particle size of wheat flour. Journal of Near Infrared Spectroscopy, 2017, 25, 116-126.	1.5	14
41	Development of a multichannel hyperspectral imaging probe for property and quality assessment of horticultural products. Postharvest Biology and Technology, 2017, 133, 88-97.	6.0	26
42	Non-Destructive Defect Detection of Apples by Spectroscopic and Imaging Technologies: A Review. Transactions of the ASABE, 2017, 60, 1765-1790.	1.1	60
43	&lt;i&gt;Optimization of Spatial Frequency Domain Imaging Technique for Estimating Optical Properties of Food and &lt;/i&gt;&lt;i&gt;Biological Materials&lt;/i&gt;. , 2017, , .		1
44	Finite element simulation of light transfer in turbid media under structured illumination. Applied Optics, 2017, 56, 6035.	1.8	10
45	Innovative Hyperspectral Imaging-Based Techniques for Quality Evaluation of Fruits and Vegetables: A Review. Applied Sciences (Switzerland), 2017, 7, 189.	2.5	73
46	Development of a Multispectral Structured Illumination Reflectance Imaging (SIRI) System and Its Application to Bruise Detection of Apples. Transactions of the ASABE, 2017, 60, 1379-1389.	1.1	37
47	&lt;i&gt;Structured-Illumination Reflectance Imaging Coupled with Spiral Phase Transform for Bruise Detection and Three-Dimensional Geometry Reconstruction of Apples&lt;/i&gt;. , 2017, , .		0
48	Detection of fresh bruises in apples by structured-illumination reflectance imaging. Proceedings of SPIE, 2016, , .	0.8	2
49	Fast demodulation of pattern images by spiral phase transform in structured-illumination reflectance imaging for detection of bruises in apples. Computers and Electronics in Agriculture, 2016, 127, 652-658.	7.7	38
50	Gram-Schmidt orthonormalization for retrieval of amplitude images under sinusoidal patterns of illumination. Applied Optics, 2016, 55, 6866.	2.1	20
51	Overview of Light Interaction with Food and Biological Materials. Contemporary Food Engineering, 2016, , 19-41.	0.2	2
52	Theory of Light Transfer in Food and Biological Materials. Contemporary Food Engineering, 2016, , 43-77.	0.2	1
53	Spatially Resolved Spectroscopic Technique for Measuring Optical Properties of Food. Contemporary Food Engineering, 2016, , 159-185.	0.2	1
54	A sequential method for measuring the optical properties of two-layer media with spatially-resolved diffuse reflectance: simulation study. Proceedings of SPIE, 2016, , .	0.8	0

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55	Predict Compositions and Mechanical Properties of Sugar Beet Using Hyperspectral Scattering. Food and Bioprocess Technology, 2016, 9, 1177-1186.	4.7	22
56	Finite element modeling of light propagation in turbid media under illumination of a continuous-wave beam. Applied Optics, 2016, 55, 95.	2.1	16
57	Structured-illumination reflectance imaging (SIRI) for enhanced detection of fresh bruises in apples. Postharvest Biology and Technology, 2016, 117, 89-93.	6.0	65
58	Predicting bruise susceptibility of "Golden Delicious"™ apples using hyperspectral scattering technique. Postharvest Biology and Technology, 2016, 114, 86-94.	6.0	55
59	Nondestructive detection of chilling injury in cucumber fruit using hyperspectral imaging with feature selection and supervised classification. Postharvest Biology and Technology, 2016, 111, 352-361.	6.0	138
60	Ripeness evaluation of "Sun Bright"™ tomato using optical absorption and scattering properties. Postharvest Biology and Technology, 2015, 103, 27-34.	6.0	76
61	Measurement of moisture, soluble solids, sucrose content and mechanical properties in sugar beet using portable visible and near-infrared spectroscopy. Postharvest Biology and Technology, 2015, 102, 42-50.	6.0	68
62	Evaluation of Sugar Content of Potatoes using Hyperspectral Imaging. Food and Bioprocess Technology, 2015, 8, 995-1010.	4.7	73
63	Measurement of Food Optical Properties. Food Engineering Series, 2015, , 203-226.	0.7	1
64	Basics of Image Analysis. Food Engineering Series, 2015, , 9-56.	0.7	14
65	Determination of sucrose content in sugar beet by portable visible and near-infrared spectroscopy. Food Chemistry, 2015, 167, 264-271.	8.2	56
66	Grading of apples based on firmness and soluble solids content using Vis/SWNIR spectroscopy and spectral scattering techniques. Journal of Food Engineering, 2014, 125, 59-68.	5.2	77
67	Hyperspectral Imaging-Based Classification and Wavebands Selection for Internal Defect Detection of Pickling Cucumbers. Food and Bioprocess Technology, 2014, 7, 1689-1700.	4.7	48
68	Evaluation of Canning Quality Traits in Black Beans (Phaseolus vulgaris L.) by Visible/Near-Infrared Spectroscopy. Food and Bioprocess Technology, 2014, 7, 2666-2678.	4.7	26
69	Assessment of internal quality of blueberries using hyperspectral transmittance and reflectance images with whole spectra or selected wavelengths. Innovative Food Science and Emerging Technologies, 2014, 24, 2-13.	5.6	61
70	An image segmentation method for apple sorting and grading using support vector machine and Otsu's method. Computers and Electronics in Agriculture, 2013, 94, 29-37.	7.7	154
71	Relationship of the optical absorption and scattering properties with mechanical and structural properties of apple tissue. Postharvest Biology and Technology, 2013, 85, 30-38.	6.0	127
72	Hyperspectral and multispectral imaging for evaluating food safety and quality. Journal of Food Engineering, 2013, 118, 157-171.	5.2	287

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73	Detection of fruit fly infestation in pickling cucumbers using a hyperspectral reflectance/transmittance imaging system. <i>Postharvest Biology and Technology</i> , 2013, 81, 44-50.	6.0	50
74	Prediction of firmness and soluble solids content of blueberries using hyperspectral reflectance imaging. <i>Journal of Food Engineering</i> , 2013, 115, 91-98.	5.2	197
75	Hyperspectral Imaging-based Classification and Wavebands Selection for Internal Defect Detection of Pickling Cucumbers. , 2013, , .		0
76	Assessing the sensitivity and robustness of prediction models for apple firmness using spectral scattering technique. , 2013, , .		0
77	ANALYSIS OF ABSORPTION AND SCATTERING SPECTRA FOR ASSESSING THE INTERNAL QUALITY OF APPLE FRUIT. <i>Acta Horticulturae</i> , 2012, , 181-188.	0.2	7
78	Analysis of hyperspectral scattering images using locally linear embedding algorithm for apple mealiness classification. <i>Computers and Electronics in Agriculture</i> , 2012, 89, 175-181.	7.7	41
79	Comparison and fusion of four nondestructive sensors for predicting apple fruit firmness and soluble solids content. <i>Postharvest Biology and Technology</i> , 2012, 73, 89-98.	6.0	99
80	Assessment of Internal Quality of Blueberry Using Hyperspectral Imaging. , 2012, , .		0
81	Data Fusion of Visible/Near-infrared Spectroscopy and Spectral Scattering for Apple Quality Assessment. , 2011, , .		0
82	Multi-sensor data fusion for improved prediction of apple fruit firmness and soluble solids content. <i>Proceedings of SPIE</i> , 2011, , .	0.8	3
83	Peach maturity/quality assessment using hyperspectral imaging-based spatially resolved technique. <i>Proceedings of SPIE</i> , 2011, , .	0.8	9
84	Integrated spectral and image analysis of hyperspectral scattering data for prediction of apple fruit firmness and soluble solids content. <i>Postharvest Biology and Technology</i> , 2011, , .	6.0	37
85	Development of a low-cost attitude sensor for agricultural vehicles. <i>Computers and Electronics in Agriculture</i> , 2011, 76, 198-204.	7.7	8
86	Optical absorption and scattering properties of normal and defective pickling cucumbers for 700-1000nm. <i>Sensing and Instrumentation for Food Quality and Safety</i> , 2011, 5, 51-56.	1.5	20
87	Detection of fruit fly infestation in pickling cucumbers using hyperspectral imaging. , 2011, , .		1
88	Characterization of the optical properties of normal and defective pickling cucumbers and whole pickles. <i>Proceedings of SPIE</i> , 2010, , .	0.8	0
89	Apple mealiness detection using hyperspectral scattering technique. <i>Postharvest Biology and Technology</i> , 2010, 58, 168-175.	6.0	78
90	Sensors for product characterization and quality of specialty crops—A review. <i>Computers and Electronics in Agriculture</i> , 2010, 74, 176-194.	7.7	182

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91	Hyperspectral waveband selection for internal defect detection of pickling cucumbers and whole pickles. Computers and Electronics in Agriculture, 2010, 74, 137-144.	7.7	67
92	Evaluation of internal defect and surface color of whole pickles using hyperspectral imaging. Journal of Food Engineering, 2010, 96, 583-590.	5.2	105
93	Feature Wavelengths Selection Using Successive Projections Algorithm for Prediction of Apple Firmness and Soluble Solids Content. , 2010, , .		0
94	Optimization of the hyperspectral imaging-based spatially-resolved system for measuring the optical properties of biological materials. Optics Express, 2010, 18, 17412.	3.4	75
95	Hyperspectral Imaging for Defect Detection of Pickling Cucumbers. , 2010, , 431-447.		5
96	Optimization of inverse algorithm for estimating the optical properties of biological materials using spatially-resolved diffuse reflectance. Inverse Problems in Science and Engineering, 2010, 18, 853-872.	1.2	31
97	UV/blue Light-induced Fluorescence for Assessing Apple Quality. Journal of Biosystems Engineering, 2010, 35, 124-131.	2.5	2
98	Optical Properties of Bruised Apple Tissue. , 2009, , .		0
99	Wavebands selection for a hyperspectral reflectance and transmittance imaging system for quality evaluation of pickling cucumbers. , 2009, , .		1
100	Monte Carlo simulation for quantification of light transport features in apples. Computers and Electronics in Agriculture, 2009, 68, 44-51.	7.7	80
101	Gloss Evaluation of Curved-surface Fruits and Vegetables. Food and Bioprocess Technology, 2009, 2, 300-307.	4.7	33
102	Prediction of olive quality using FT-NIR spectroscopy in reflectance and transmittance modes. Biosystems Engineering, 2009, 103, 304-312.	4.3	42
103	Quantification of the optical properties of two-layer turbid materials using a hyperspectral imaging-based spatially-resolved technique. Applied Optics, 2009, 48, 5612.	2.1	40
104	Analysis of hyperspectral scattering characteristics for predicting apple fruit firmness and soluble solids content. , 2009, , .		6
105	Optical scattering in beef steak to predict tenderness using hyperspectral imaging in the VIS-NIR region. Sensing and Instrumentation for Food Quality and Safety, 2008, 2, 189-196.	1.5	75
106	Quality evaluation of pickling cucumbers using hyperspectral reflectance and transmittance imaging: Part I. Development of a prototype. Sensing and Instrumentation for Food Quality and Safety, 2008, 2, 144-151.	1.5	44
107	Quality evaluation of pickling cucumbers using hyperspectral reflectance and transmittance imaging"Part II. Performance of a prototype. Sensing and Instrumentation for Food Quality and Safety, 2008, 2, 152-160.	1.5	43
108	Hyperspectral and multispectral imaging for food quality and safety. Sensing and Instrumentation for Food Quality and Safety, 2008, 2, 131-132.	1.5	11

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109	Analysis of spatially resolved hyperspectral scattering images for assessing apple fruit firmness and soluble solids content. <i>Postharvest Biology and Technology</i> , 2008, 48, 52-62.	6.0	220
110	Measurement of the optical properties of fruits and vegetables using spatially resolved hyperspectral diffuse reflectance imaging technique. <i>Postharvest Biology and Technology</i> , 2008, 49, 355-365.	6.0	313
111	Quality evaluation of Fruit by Hyperspectral Imaging. , 2008, , 319-348.		5
112	Internal quality evaluation of apples using spectral absorption and scattering properties. <i>Proceedings of SPIE</i> , 2007, , .	0.8	4
113	A recursive method for updating apple firmness prediction models based on spectral scattering images. <i>Proceedings of SPIE</i> , 2007, , .	0.8	1
114	Measurement of the Absorption and Scattering Properties of Turbid Liquid Foods Using Hyperspectral Imaging. <i>Applied Spectroscopy</i> , 2007, 61, 388-396.	2.2	136
115	Development of a multispectral imaging prototype for real-time detection of apple fruit firmness. <i>Optical Engineering</i> , 2007, 46, 123201.	1.0	33
116	Characterization of Spatially-Resolved Hyperspectral Scattering Images for Assessing Apple Fruit Firmness. , 2007, , .		0
117	On-Line Hyperspectral Transmittance Imaging for Internal Defect Detection of Pickling Cucumbers. , 2007, , .		0
118	Visible and near-infrared spectroscopy for nondestructive quality assessment of pickling cucumbers. <i>Postharvest Biology and Technology</i> , 2007, 44, 165-174.	6.0	49
119	Hyperspectral laser-induced fluorescence imaging for assessing apple fruit quality. <i>Postharvest Biology and Technology</i> , 2007, 43, 193-201.	6.0	124
120	Nondestructive measurement of firmness and soluble solids content for apple fruit using hyperspectral scattering images. <i>Sensing and Instrumentation for Food Quality and Safety</i> , 2007, 1, 19-27.	1.5	69
121	Prediction of apple fruit firmness and soluble solids content using characteristics of multispectral scattering images. <i>Journal of Food Engineering</i> , 2007, 82, 142-152.	5.2	119
122	Hyperspectral diffuse reflectance imaging for rapid, noncontact measurement of the optical properties of turbid materials. <i>Applied Optics</i> , 2006, 45, 8366.	2.1	29
123	Integrating fluorescence and interactance measurements to improve apple maturity assessment. , 2006, , .		3
124	Hyperspectral Scattering for assessing Peach Fruit Firmness. <i>Biosystems Engineering</i> , 2006, 93, 161-171.	4.3	245
125	Near-infrared hyperspectral reflectance imaging for detection of bruises on pickling cucumbers. <i>Computers and Electronics in Agriculture</i> , 2006, 53, 60-70.	7.7	201
126	Improving apple fruit firmness predictions by effective correction of multispectral scattering images. <i>Postharvest Biology and Technology</i> , 2006, 41, 266-274.	6.0	75



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127	A laser-based multispectral imaging system for real-time detection of apple fruit firmness. , 2005, , .		0
128	Hyperspectral diffuse reflectance for determination of the optical properties of milk and fruit and vegetable juices. , 2005, , .		8
129	Near-infrared multispectral scattering for assessing internal quality of apple fruit. , 2004, , .		6
130	Force/deformation techniques for measuring texture. , 2004, , 109-145.		13
131	PREDICTION OF APPLE FRUIT FIRMNESS BY NEAR-INFRARED MULTISPECTRAL SCATTERING. Journal of Texture Studies, 2004, 35, 263-276.	2.5	20
132	Multispectral imaging for predicting firmness and soluble solids content of apple fruit. Postharvest Biology and Technology, 2004, 31, 147-157.	6.0	252
133	Detecting pits in tart cherries by hyperspectral transmission imaging. , 2004, 5587, 153.		0
134	DETERMINATION OF FIRMNESS AND SUGAR CONTENT OF APPLES USING NEAR-INFRARED DIFFUSE REFLECTANCE. Journal of Texture Studies, 2000, 31, 615-630.	2.5	145
135	SHEAR PROPERTIES AND WARNER-BRATZLER TENDERNESS MEASUREMENT OF BEEF. Journal of Texture Studies, 1999, 30, 361-375.	2.5	6
136	<title>Hyperspectral imaging for safety inspection of food and agricultural products</title>. , 1999, 3544, 121.		100
137	Panicle emergence of tiller types and grain yield of tiller order for direct-seeded rice cultivars. Field Crops Research, 1996, 47, 235-242.	5.1	23
138	ABSORPTION of WATER IN LONG-GRAIN RICE ROUGH DURING SOAKING. Journal of Food Process Engineering, 1994, 17, 141-154.	2.9	52
139	Characterization of nonlinear behavior of apple flesh under stress relaxation. Journal of Rheology, 1992, 36, 303-318.	2.6	11
140	Characterization of nonlinear creep behavior of two food products. Journal of Rheology, 1991, 35, 1209-1233.	2.6	18