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Publications

Selected Journal Papers

1. Pham, Quoc Thien Lu, Shang-En Liou, Nai-Shang (2025, Apr). Development of sorting and grading methodology of jujubes using hyperspectral image data. *Postharvest Biology and Technology*, 222, 113406. (SCI, 1/129, AGRONOMY). https://doi.org/10.1016/j.postharvbio.2025.113406.
2. Pham, Q. T.., Nguyen, L. T. T.., Nguyen, Q. V.., Barlin, B., Lu, S.-E.., & Liou, N.-S. (2024, Oct). Using a Yolov8-Based Object Detection Model for an Automatic Garbage Sorting System. *Journal of Advanced Research in Applied Mechanics*, 126(1), 24–32. (Scopus). https://doi.org/10.37934/aram.126.1.2432.
3. N. M. T. Nguyen and N.-S. Liou (2023, Jul). Detecting Surface Defects of Achacha Fruit (Garcinia humilis) with Hyperspectral Images. *Horticulturae*, 9(8), 869. (SCI, 7/45, HORTICULTURE).
4. Quoc Thien Pham, Hoang Huy Nguyen, Nai-Shang Liou (2023, Jul). The Development of a Machine Vision System for Postharvest Processing of Achacha Fruits. *AIP Conference Proceedings*, 2689(1).
5. N. M. Nguyen and N.-S. Liou (2022, Dec). Ripeness Evaluation of Achacha Fruit Using Hyperspectral Image Data. *Agriculture*, 12(12). (SCI, 19/129, AGRONOMY).
6. J. A. G. Clet, N.-S. Liou, C.-H. Weng and Y.-S. Lin (2022, Mar). A Parametric Study for Tensile Properties of Silicone Rubber Specimen Using the Bowden-Type Silicone Printer. *Materials*, 15, 1792.
7. Q. T. Pham and N. S. Liou (2022, Mar). The development of on-line surface defect detection system for jujubes based on hyperspectral images. *Computers and Electronics in Agriculture*, 194, 106734. (SCI, 2/94, AGRICULTURE, MULTIDISCIPLINARY).

8. J. L. Yang, Y. C. Ching, C. H. Chuah, D. H. Nguyen and N. S. Liou (2021, Oct). Synthesis and characterization of starch/fiber-based bioplastic composites modified by citric acid-epoxidized palm oil oligomer with reactive blending. *Industrial Crops and Products*, 170, 113797.
9. J. L. Yang, Y. C. Ching, C. H. Chuah and N. S. Liou (2021, Jan). Preparation and
10. Characterization of Starch/Empty Fruit Bunch-Based Bioplastic Composites Reinforced with Epoxidized Oils. *Polymers*, 13(1), 94.
11. Gunathilake, Tmsu Ching, Y. C. Chuah, C. H. Abd Rahman, N. Liou, N. S. (2020, Sep). Recent advances in celluloses and their hybrids for stimuli-responsive drug delivery. *INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES*, Volume 158, 607-688. (SCI).
12. Pham, Q. T. Liou, N. S. (2020, Feb). Hyperspectral Imaging System with Rotation Platform for Investigation of Jujube Skin Defects. *Applied Sciences*, 10(8), 2851. (SCI, 66/175, ENGINEERING, MULTIDISCIPLINARY).
13. Ching, Y. C. Gunathilake, Tmsu Chuah, C. H. Ching, K. Y. Singh, R. Liou, N. S. (2019, Jul). Curcumin/Tween 20-incorporated cellulose nanoparticles with enhanced curcumin solubility for nano-drug delivery: characterization and in vitro evaluation. *CELLULOSE*, 26(9), 5467-5481. (SCI).
14. Haniffa, M. A. M. Ching, Y. C. Chuah, C. H. Ching, K. Y. Liou, N. S. (2019, Jan). Synergistic effect of (3-Aminopropyl) Trimethoxysilane treated ZnO and corundum nanoparticles under UV-irradiation on UV-cutoff and IR-absorption spectra of acrylic polyurethane based nanocomposite coating. *POLYMER DEGRADATION AND STABILITY*, Volume 159, 205-216. (SCI).
15. Pham, Quoc Thien Liou, Nai-Shang (2019). Detecting skin defects of star apple by using hyperspectral images. *Journal of Physics: Conference Series*, Volume 1198, 042019 . (SCI).
16. 阮吳明智, 劉乃上, 范國天, 周浩平（2023 年 12 月）。應用高光譜影像於星蘋果表面缺陷偵測與分析。農業工程學報，69(4), 62-73。

Selected Conference Papers

1. Quoc Thien Pham, Shang-En Lu, Yi-Wen Chiu, Nai-Shang Liou (2025, Jan). The Development of A Cobot Driving Hyperspectral Imaging System for Clinical Diagnosis. 2025 9th International Conference on Biomedical Engineering and Applications (ICBEA 2025), Seoul, South Korea. NSTC 113-2221-E-218-007.
2. Quoc Thien Pham, Shang-En Lu and Nai-Shang Liou (2024, Nov). Sorting and Grading of Cherry Tomatoes Using Spectral Images. 23rd International Symposium on Advanced Technology (ISAT-23), Los Banos, Philippines.
3. Huy Hoang Nguyen1, Quoc Thien Pham and Nai-Shang Liou (2022, Oct). DEVELOPMENT OF SMALL FRUIT SORTING SYSTEM. 2022 International Symposium on Novel and Sustainable Technology, Tainan, Taiwan.
4. Ngo Minh Tri Nguyen, Quoc Thien Pham and Nai-Shang Liou (2022, Oct). Sorting jujube fruits based on defects using hyperspectral imaging data. 2022 International Symposium on Novel and Sustainable Technology, Tainan, Taiwan.
5. Ngo Minh Tri Nguyen, Quoc Thien Pham, Hoang Huy Nguyen1 and Nai-Shang Liou (2021, Nov). The Use of Machine Vision for Postharvest Processing of Achacha Fruits. The Use of Machine Vision for Postharvest Processing of Achacha Fruits.
6. Ngo Minh Tri Nguyen, Nai-Shang Liou (2020, Nov). Artificial Neural Network Models of Hyperspectral Data for Skin Defect Detection of Jujubes. 2020 International Symposium on Novel and Sustainable Technology, Tainan, Taiwan.
7. Tzu-Hsiang Chen, Xin-Yi Lai, Chia-Wei Wu, Cheng-His Li and Nai-Shang Liou (2020, Nov). The Design of Rotation Platform for Investigating Globe-like Objects by using Machine Vision. The Design of Rotation Platform for Investigating Globe-like Objects by using Machine Vision, Tainan, Taiwan.

8. Dian Meliana, Hadi Sutanto, Chung-Heng Chen and Nai-Shang Liou (2019, Dec). The Design and Analysis of the Structural of a Texture Profile Analyzer. 2019 International Symposium on Novel and Sustainable Technology, Tainan, Taiwan.
9. Elian Kurnia, Hadi Sutanto, Chung-Hao Tsai, Chien-Hung Chiu and Nai-Shang Liou (2019, Nov). The Design and Analysis of the Structural of a XY Scanning Platform. 2019 International Symposium on Novel and Sustainable Technology, Tainan, Taiwan.
10. Pham, Q. T. Liou, N. S. (2019, Jun). The Development of Time Dependent Constitutive Laws of Jujube Flesh. Challenges in Mechanics of Time-Dependent Materials, Volume 2, Cham.