

# Session Poster 1 (8/7 Wed. 13:30 – 15:00)

Room: 7F 交誼廳

1. (S0017) An FPGA-based System Architecture Design for Agriculture Robotics

Chun-Hsian Huang, Zong-Wei Li, Hsin-Ting Tseng, and Po-Jung Chen

National Taitung University

2. (S0034) A Low-Complexity Joint Color Demosaicking and Zooming Image Processor Design

Wan-Ting Kao, Shih-Lun Chen, and Patricia Angela R. Abu

Chung Yuan Christian University

3. (S0035) Automatic Compositional Formal Verification for RISC-V ISA

Cheng-Ting Kao, Yi-Chun Kao, Tien-Yin Cheng, Chun-Sheng Ke, Chia-Hao Hsu, and Yean-Ru Chen

National Cheng Kung University

4. (S0036) Quadruple-Voltage Power-Performance Optimized H.264 Video Encoder Chip Design and

## Validation

Ching-Hwa Cheng (1), An-Tia Xiao (2), and Jiun-In Guo (2)

(1) Feng Chia University and (2) National Chiao Tung University

### 5. (S0037) PWM Dimming and FPGA control Design for Module LED Display

Shih-Chang Hsia, Wei-Chun Hung, and Ren-Chien Hsu

National Yunlin University of Science and Technology

### 6. (S0048) A Virtualization-Assisted Full-System Simulation Approach for the Verification of System

Inter-Component Interactions

Hsin-I Wu, Da-Yi Guo, Ren-Song Tsay, and Guan-Shiue Li

National Tsing Hua University

### 7. (S0073) On Reducing Delay Overhead of Implication-Based Concurrent Error Detection

Tong-Yu Hsieh, Kuang-Chun Lin, and Hsin-Hsien Lin

National Sun Yat-sen University

8. (S0082) A Current-Based Partition Approach for Multiple Sub-Circuit Identification in Mixed-Signal

Circuits

Ling-Yen Song (1), Yu-Kai Chang (2), Han-Chung Chang (1), Chien-Nan Liu (1), Jing-Yang Jou (2), Yun-Jing

Lin (3), Meng-Jung Lee (3)

(1) National Chiao Tung University, (2) National Central University, and (3) Realtek Semiconductor

Corporation

9. (S0088) Hadoop Cluster with FPGA-based Hardware Accelerators for K-means Clustering Algorithm

Ching-Che Chung, Yu-Hsin Wang, and Huai-Xiang Zhang

National Chung Cheng University

10. (S0089) An FPGA-based Transceiver for Human Body Channel Communication using Walsh Codes

Ching-Che Chung, Ru-Hua Chang, Ming-Hsuan Li, and Yi-Ting Tsai

National Chung Cheng University

11. (S0096) Improved second minimum value for Probabilistic Min-Sum Algorithm in LDPC decoding

Chen-Xuan Wang and Cheng-Hung Lin

Yuan Ze University

12. (S0099) Early Termination Scheme for Polar Belief Propagation Decoding

Min-Jung Sung and Cheng-Hung Lin

Yuan Ze University

13. (S0101) Novel Hybrid BP-SCSCL Decoding for Polar Code

Chun-Wei Huang and Cheng-Hung Lin

Yuan Ze University

14. (S0112) Implementation of Auto-calibrating Time-to-Digital integrating an Embedded Processor System  
on Low-Cost FPGA

Wei-Da Chen, Hui-Yu Liang, You-Chen Zhang and Zhi-Xin Lin

Oriental institute of technology

15. (S0113) A low voltage and low power true-signal-phase flip-flop design by using reduce the number of

clocked transistors

Jin-Fa Lin, Shao-Wei Yu, Chang-Ming Tsai, and Zheng-Jie Hong

Chaoyang University of Technology

16. (S0114) A Reconstruction Image System for Tumor Detection Using Breast Phantoms

Jia-Jiun Guo, Wen-Jun Wu, and Wai-Chi Fang

National Chiao Tung University

17. (S0123) Circuit Implementation for 8x8 DCT Transform and Quantization Operations of HEVCMPEG-2

Video Codec

En-Pei Wu and Pei-Jun Lee

National Chi Nan University

18. (S0129) Hybrid SRAM/STT-MRAM Energy and Performance Improvement via Novel Memory-to-LLC

Placement Policy

Chien-Lun Lo (1), Ing-Chao Lin (2), Hsiang-Yun Cheng (3), Da-Wei Chang (2), and Yun-Yang Shih (2)

(1) Global Unichip Corp., (2) National Cheng Kung University, and (3) Academia Sinica

19. (S0133) High Precision PLL Delay Matrix with Overclocking and Double Data Rate For Accurate Time-to-Digital Conversion

Poki Chen, Ruei-Ting Wang, and Nguyen My Qui

National Taiwan University of Science and Technology

20. (S0137) Temperature Prediction Method for Thermal-aware NoC System by Using On-the-Fly Machine Learning Process

Kun-Chih (Jimmy) Chen and Yuan-Hou (Jack) Liao

National Sun Yat-sen University

21. (S0141) A CNN Chip Implementation for Real-Time EEG-based Emotion Recognition

Yu-De Huang, Kai-Yen Wang, Yun-Lung Ho, and Wai-Chi Fang

National Chiao Tung University

22. (S0147) An Integrated PPG and ECG Signal Processing Design of EEMD Processor

I-Wei Chen, Wen-Jun Wu, and Wai-Chi Fang

National Chiao Tung University

23. (S0154) On Accurate No-Reference Error-Tolerability Testing of Videos

Tong-Yu Hsieh, Pao-Chien Li, Shang-En Chan, and Chao-Ru Chen

National Sun Yat-sen University

24. (S0173) Effective FPGA Resource Utilization for QDI Implementation of Asynchronous Circuits

Yi-Fan Evan Chang, Ruei-Yang Huang, and Jie-Hong Roland Jiang

National Taiwan University

25. (S0181) Threshold Function Identification

Chin-Heng Liu (1), Chia-Chun Lin (1), Yung-Chih Chen (2), Chia-Cheng Wu (1), Chun-Yao Wang (1)

(1) National Tsing Hua University and (2) Yuan Ze University

26. (S0192) Image Enhancement for Robust Face Recognition Based on Convolutional Neural Networks

Meng-Hua Li, Shiann-Rong Kuang, Chun-Feng Huang, and Chen-Ting Huang

National Sun Yat-sen University

27. (S0193) Region Estimation Hardware Acceleration Based on Binarized Neural Network using PYNQ FPGA platform

Pin-He Liu (1), Jhi-Jyun Fu (1), Afaroj Ahamad (2), and Chi-Chia Sun (1)

(1) National Formosa University and (2) Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, India

28. (S0201) A Partition-Based Cell Generation for HighPerformance and Printability in Advanced Node

Yao-Lin Chang, Po-Cheng Pan, Chien-Hung Lin, and Hung-Ming Chen

National Chiao Tung University

29. (S0210) Row-based Direct-Mapping Estimators in Fixed-width Modified Booth Multipliers

Chung-Yi Li, Yuan-Ho Chen, Lu-An Lai, Wen-Chi Yeh, and Jun Yang

Chang Gung University and Chang Gung Memorial Hospital

30. (S0211) A Unified and Flexible Eigen-Solver for Rank-Deficient Matrix in MIMO Precoding/Beamforming



Applications

Su-An Chou and Pei-Yun Tsai

National Central University