

**10:30-12:00 Zoom room 1: Technical session A**

**Session chair: Yoshifumi Nishio**

- 1 Takumi Nara (Tokushima University)  
Clustering Phenomena in Network of Coupled Chaotic Circuits Located in 4-Dimensional Space  
Takumi Nara, Yoko Uwate and Yoshifumi Nishio
  
- 2 Naoto Yonemoto (Tokushima University)  
Synchronization Phenomena in Chaotic Circuits with Two degrees of freedom Coupled by a Resistor  
Naoto Yonemoto, Yoko Uwate, Yoshifumi Nishio
  
- 3 Chia-Ming Chang (National Chung Hsing University)  
A Low Power Constant On-time DC-DC Buck Converter  
Chia-Ming Chang and Robert Chen-Hao Chang
  
- 4 Ching-Hwa Cheng (Feng Chia University)  
Design and Implementation of a Pre-Surgical Investigation System by VR+AR+MR Techniques  
Ching-Hwa Cheng
  
- 5 Akinori Nakayama (Okayama University of Science)  
A Study on Rotary LED Transmitter for Visible Light Communication: Part I  
Akinori Nakayama, Zhengqiang Tang, Shintaro Arai
  
- 6 Zhengqiang Tang (Okayama University of Science)  
A Study on Rotary LED Transmitter for Visible Light Communication: Part II  
Zhengqiang Tang, Akinori Nakayama, Shintaro Arai
  
- 7 Tsuyoshi Isozaki (Tokushima University)  
Comparison of Synchronization Phenomena in Three Complex Networks Consisting of van der Pol Oscillators  
Tsuyoshi Isozaki, Takumi Nara, Yoko Uwate and Yoshifumi Nishio

**10:30-12:00 Zoom room 2: Technical session B**

**Session chair: Robert Chen-Hao Chang**

- 1 Shu Sumimoto (Tokushima University)  
Image Classification using Spherical Convolutional Neural Network  
Shu Sumimoto, Yoko Uwate, Yoshifumi Nishio
  
- 2 Yuji Yamauchi (Tokushima University)  
Consistency Loss for Semi-Supervised Object Detection  
Yuji Yamauchi, Shu Sumimoto, Yoko Uwate and Yoshifumi Nishio
  
- 3 Kazuki Satokawa (Tokushima University)  
Investigation of Capsule Networks for Color Images  
Kazuki Satokawa, Shu Sumimoto, Yoko Uwate, Yoshifumi Nishio

4 MinhTri Tran (Gunma University)

Stability Test for High-order Ladder Low-Pass Filters

MinhTri Tran, Anna Kuwana, Haruo Kobayashi

5 Xueyan Bai (Gunma University)

A Proposal of Digital-to-Analog Converter Architectures Based on Polygonal and Prime Numbers

Xueyan Bai, Yuanyang Du, Anna Kuwana, Haruo Kobayashi, Kazuyoshi Kubo

6 Souma Yamamoto (Gunma University)

Feedback Operation Analysis of Temperature-Insensitive MOS Reference Current Source with Self-Bias Circuit

Souma Yamamoto, Kuswan Isam Ebisawa, Yudai Abe, Takashi Ida, Yukiko Shibasaki, Nobukazu Tsukiji,

Anna Kuwana, Haruo Kobayashi, Akira Suzuki, Yukichi Todoroki, Toshihiko Kakinoki, Nobuto Ono, Kazuhiro Miura

7 Chih-Peng Fan (National Chung Hsing University)

Deep Learning Based Classifier for Biometric Authentication with Eye Images

Chia-Wei Chuang, Yu-Hsiang Chen, Chih-Peng Fan, and Robert Chen-Hao Chang

8 Wei-Xiang Chou (National Chiao Tung University)

Achieving Analog Layout Integrity through Migration

Wei-Xiang Chou, Hao-Yu Chi, Chien-Nan Jimmy Liu

### 13:00-14:30 Zoom room 1: Technical session C

#### Session chair: Atsushi Takahashi

1 Hidehiro Sugioka (Tokushima University)

Whale Optimization Algorithm Which Orca Chases Whales

Hidehiro Sugioka, Yoko Uwate, Yoshifumi Nishio

2 Wenqi Zhu (Chiba University)

A Novel GPU-Based Design Method for Class-E Wireless Power Transfer System

Wenqi Zhu, Hiroo Sekiya

3 Asyia Asiya (Chiba University)

Design Pure-Resistive E/F<sub>n</sub> Rectifiers with Highest Power Output Capability

Asiya, Kien Nguyen, and Hiroo Sekiya

4 Yuma Murakawa (Kyoto University)

Theoretical Study of Output Series-Paralleled DC-DC Converters Regulated by Passivity-Based Control

Yuma Murakawa and Takashi Hikihara

5 Po-Chuang Huang (National Central University in Taiwan)

Playing CartPole-v0 with Reinforcement Learning

Po-Chuang Huang

6 Jia-Zhao Lin (National Central University in Taiwan)

Algorithm of Synthetic Aperture Radar

Jia-Zhao Lin

7 Naohide Hashimoto (Tokushima University)

Examination of The Appropriate Time of Mobility Restriction of People in COVID-19  
Naohide Hashimoto, Yoko Uwate and Yoshifumi Nishio

8 Aika Ohno (Tokushima University)

Prediction of infectious number of COVID-19 by using SIR model with Echo State Networks  
Aika Ohno, Yoko Uwate and Yoshifumi Nishio

### **13:00-14:30 Zoom room 2: Technical session D**

#### **Session chair: Yoko Uwate**

1 Kodai Kitamura (Tokushima University)

Maintaining Grayscale Images by Cellular Neural Networks with Switching Two Templates  
Kodai Kitamura, Yoko Uwate and Yoshifumi Nishio

2 Sosuke Nakano (Tokushima University)

Measuring the Number of Objects in an Image with Cellular Neural Networks  
Sosuke Nakano, Kodai Kitamura, Yoko Uwate and Yoshifumi Nishio

3 Afaroj Ahmad (National Formosa University Taiwan)

BNN Fully Semantic Segmentation for Regional Segmentation using Taguchi Method on FPGA  
Afaroj Ahmad and Chi-Chia Sun

4 Yu-Hsiang Wang (National Cheng Kung University)

Porting OpenCL to CASLab GPU on FPGA  
Yu-Hsiang Wang

5 Tri Tran (Gunma University)

Derivation of Image Rejection Ratio for High-Order Complex Filters  
MinhTri Tran, Akemi Hatta, Anna Kuwana, and Haruo Kobayashi

6 Takashi Hosono (Gunma University)

Simple Reference Current Source Insensitive to Power Supply Voltage and Temperature  
Takashi Hosono, Lei Sha, Souma Yamamoto, Mayu Hirano, Takashi Ida, Anna Kuwana, Haruo Kobayashi,  
Yoichi Moroshima, Hiromichi Harakawa, Takeshi Oikawa

7 Tomiyuki Furugaki (Tokushima University)

Classification Accuracy of Time Series Data in Neural Networks Using Surrogate Data  
Tomiyuki Furugaki, Tomoya Takata, Yoko Uwate, Yoshifumi Nishio and Hidekuni Takao

8 Tomoya Takata (Tokushima University)

Time Series Classification by Neural Network Using Features of Manifolds  
Tomoya Takata, Yoko Uwate and Yoshifumi Nishio