

**KEY:**  Undergraduate Students  Graduate Students  ECE/CASP Post-Doctorates

## Student Books

**B. Liu** and Y. Chen, "Auditing for Data Integrity and Reliability in Cloud Storage," *Handbook on Data Centers*, edited by S. U. Khan and A. Zomaya, published by Springer, ISBN 978-1-4939-2091-4, March 2015. [Book Chapter]

## Student Conference Publications

**E. Ashendorf** and S. A. Craver, "Design of a Steganographic Virtual Operating System," *Proc. SPIE 9409, Media Watermarking, Security, and Forensics 2015*, doi 10.1117/12..2079875, March 4, 2015.

**A. F. Baroughi** and S. A. Craver, "The Non-trusty Clown Attack on Model-based Speaker Recognition Systems," *Proc. SPIE 9409, Media Watermarking, Security, and Forensics 2015*, doi 10.1117/12.2083412, March 4, 2015.

V. Nikulin, R. Khandekar, and **V. Bedi**, "Application of Holographic Interferometry to In-plane and Out-of-plane Misalignment and Deformation Measurements in Packaging Applications," *Proc. SPIE Dimensional Optical Metrology and Inspection for Practical Applications IV*, Vol. 9489, 94890J, May 2015.

**G. Choi, A. Fraiwan**, D. J. Hassett, and S. Choi, "A Paper-based 48-well Microbial Fuel Cell Array for Rapid and High-throughput Screening of Electrochemically Active Bacteria," *IEEE MEMS 2015*, pp. 577-580, Estoril, Portugal, January 18-22, 2015.

**R. Cogranne, T. Denemark**, and J. Fridrich, "Optimal Detection of Steganography Using a Statistical Model of FLD Ensemble Classifiers," *IEEE WIFS*, December 3-5, 2014.

**T. Denemark, V. Sedighi**, V. Holub, **R. Cogranne**, and J. Fridrich, "Selection-Channel-Aware Rich Model for Steganalysis of Digital Images," *IEEE WIFS*, December 3-5, 2014.

V. Skormin, **A. Dolgikh**, and **Z. Birnbaum**, "The Behavioral Approach to Diagnostics of Cyber-Physical Systems," *IEEE Autotest*, St. Louis, Missouri, USA, 2014.

**Q. Dong**, Y. Chen, and S. Towfighian, "MEGA: an Energy Aware Algorithm for Self-Powered Wireless Sensor Networks in Sustainable Smart Infrastructure," *2nd Workshop on Green Broadband Access: Energy Efficient Wireless and Wired Network Solutions - IEEE GlobeCom 2014*, Austin, Texas, USA, December 12, 2014.

**A. Fraiwan, C. Dai**, D. J. Hassett, and S. Choi, "A Paper-based Microbial Sensor Array for Rapid Screening of Electricity-producing Bacteria," *Hilton Head Workshop 2014: A Solid-state Sensors, Actuators, and Microsystems Workshop*, pp. 115-118, Hilton Head Island, South Carolina, USA, June 8-12, 2014.

**A. Fraiwan, S. P. Adusumilli**, D. Han, A. J. Steckl, D. F. Call, C. R. Westgate, and S. Choi, "Micro-/Nano-Structured Anodes for Enhanced Performance of Micro-sized Microbial Fuel Cell," *Hilton Head Workshop 2014: A Solid-state Sensors, Actuators, and Microsystems Workshop*, pp. 203-206, Hilton Head Island, South Carolina, USA, June 8-12, 2014.

**M. Goljan, R. Cogranne**, and J. Fridrich, "Rich Model for Steganalysis of Color Images," *IEEE WIFS*, December 3-5, 2014.

**M. Goljan** and J. Fridrich, "CFA-Aware Features for Steganalysis of Color Images," *Proc. SPIE, Electronic Imaging, Media Watermarking, Security, and Forensics 2015*, Vol. 9409, San Francisco, California, USA, February 8-12, 2015.

**Q. Gui**, Z. Jin, and W. Xu, "Exploring EEG-based Biometrics for User Identification and Authentication," *Proc. IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, pp. 1-6, December 2014.

**Q. Gui**, Z. Jin, and W. Xu, "Exploring Missing Data Prediction in Medical Monitoring: A Performance Analysis Approach," *Proc. IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, pp. 1-6, December 2014.

**Q. Gui**, Z. Jin, **M. V. Ruiz-Blondet**, S. Laszlo, and W. Xu, "Towards EEG Biometrics: Similarity-Based Approaches for User Authentication," *IEEE International Conference on Identity, Security and Behaviour Analysis (ISBA)*, March 2015.

H. Hu, S. A. Zahorian, **P. Guzewich**, and **J. Wu**, "Acoustic Features for Robust Classification of Mandarin Tones," *Interspeech 2014*, September 2014.

N. E. Wu and **J. Huang**, "On-line Impulse Response Extraction of a Power Transfer Path using Pulse Compression Probing," *American Control Conference (ACC)*, June 2014.

**H. Lee** and S. Choi, "A Microfabricated Bio-Solar Cell for Self-Sustainable Field Applications," *Hilton Head Workshop 2014: A Solid-state Sensors, Actuators, and Microsystems Workshop*, pp. 258-261, Hilton Head Island, South Carolina, USA, June 8-12, 2014.

**H. Lee**, **W. Yang**, **X. Wei**, **A. Fraiwan** and S. Choi, "A Microsized Microbial Fuel Cell based Biosensor for Fast and Sensitive Detection of Toxic Substances in Water," *IEEE MEMS 2015*, pp. 573-576, Estoril, Portugal, January 18-22, 2015.

X. Li and **J. Lee**, "Multi-hop Relaying with Optimal Decode-and-forward Transmission Rate and Self-immunity to Mutual Interference among Wireless Nodes," *49<sup>th</sup> Annual Conference on Information Sciences and Systems (CISS'2015)*, Johns Hopkins University, Baltimore, Maryland, March 18-20, 2015.

**X. Liu** and S. A. Zahorian, "Combined PNCC Feature Extractor for Robust Speech Recognition," *CHINASIP 2014*, August 2014.

**X. Liu** and S. A. Zahorian, "A Unified Framework for Filterbank and Time-frequency Basis Vectors in ASR Frontends," *ICASSP 2015*, April 2015.

V. Nikulin, D. Hughes, **J. Malowicki**, and **V. Bedi**, "Analysis of the Secrecy of the Running Key in Quantum Encryption Channels using Coherent States of Light," *Proc. SPIE Quantum Information and Computation XIII*, Vol. 9500, 950009, May 2015.

**C.-Y. Peng**, T. P. Dhakal, **A. Emrani**, S. Lu, and C. R. Westgate, "Stability of CZTS Thin Film Solar Cells under Accelerated Thermal Cycling and Damp Heat Exposure," *40<sup>th</sup> IEEE PVSC Conference*, Denver, Colorado, USA, June 8-13, 2014.

**B. Poland**, Y. Chen, M. Muccio, and D. Hague, "Context Aware TCP for Intelligence, Surveillance and Reconnaissance Mission on Autonomous Platforms," *Military Communications Conference (MILCOM)*, Baltimore, Maryland, USA, October 6-8, 2014.

**Q. Qin** and N. E. Wu, "Recloser and Sectionalizer Placement for Reliability Improvement using Discrete Event Simulation," *IEEE PES Generation Meeting Conference & Exposition*, July 27, 2014.

**P. P. Rajbhandari**, T. P. Dhakal, and C. R. Westgate, "Thin Film Iron Pyrite Synthesized by Sulfurization of Iron Oxide for Application in Photovoltaics," *40<sup>th</sup> IEEE PVSC Conference*, Denver, Colorado, USA, June 8-13, 2014.

**M. V. Ruiz-Blondet**, N. Khalian, B. C. Armstrong, Z. Jin, K. J. Kurtz, and S. Laszlo, "Brainprint: Identifying Unique Features of Neural Activity with Machine Learning," *Proc. 36<sup>th</sup> Annual Meeting of the Cognitive Science Society (CogSci)*, July 2014.

**M. V. Ruiz-Blondet**, S. Laszlo, and Z. Jin, "Assessment of Permanence of Non-Volitional EEG Brainwaves as a Biometric," *IEEE International Conference on Identity, Security and Behaviour Analysis (ISBA)*, March 2015.

**V. Sedighi**, **R. Cogranné**, and J. Fridrich, "Content-Adaptive Pentary Steganography Using the Multivariate Generalized Gaussian Cover Model," *Proc. SPIE, Electronic Imaging, Media Watermarking, Security, and Forensics 2015*, Vol. 9409, San Francisco, California, USA, February 8-12, 2015.

**R. Wu**, Y. Chen, E. Blasch, **B. Liu**, and G. Chen, "A Container-Based Elastic Information Fusion Cloud Architecture for Real-Time Full-Motion Video (FMV) Target Tracking," *2014 IEEE Applied Imagery Pattern Recognition (AIPR) Workshop*, Washington D.C., USA, October 14-16, 2014.

**C. Xiong** and X. Li, "Competitive Performance of Multiple Spectrum Access Strategies Coexisting in Heterogeneous Cognitive Radio Networks," *2<sup>nd</sup> IEEE China Summit & International Conference on Signal and Information Processing (IEEE ChinaSIP 2014)*, Xi'an, China, July 9-13, 2014.

X. Li and **Z. Zhang**, "Exploiting the Scale of Big Data for Data Privacy: An Efficient Scheme based on Distance-preserving Artificial Noise and Secret Matrix Transform," *2<sup>nd</sup> IEEE China Summit & International Conference on Signal and Information Processing (IEEE ChinaSIP 2014)*, Xi'an, China, July 9-13, 2014.

# Student Journal Articles

**A. Dolgikh, Z. Birnbaum, B. Liu**, Y. Chen, and V. Skormin, "Cloud Security Auditing based on Behavioral Modeling," *International Journal of Business Process Integration and Management*, Vol. 7, No. 2, 2014.

**A. Emrani, P. P Rajbhandari**, T. P. Dhakal, and C. R. Westgate, "CZTS Solar Cells Fabricated by Short-term Sulfurization of Sputtered Sn/Zn/Cu Precursors Under an H<sub>2</sub>S Atmosphere," *Thin Solid Films*, Vol. 577, pp. 62-66, 2015.

**A. Fraiwan, H. Lee**, and S. Choi, "A Multi-Anode Paper-based Microbial Fuel Cell: A Potential Power Source for Disposable Biosensors," *IEEE Sensors Journal*, Vol. 14, pp. 3385-3390, 2014.

**A. Fraiwan** and S. Choi, "Bacteria-Powered Battery on Paper," *Physical Chemistry Chemical Physics*, Vol. 16, pp. 26288-26293, 2014.

**A. Fraiwan**, D. J. Hassett, and S. Choi, "Effects of Light on the Performance of Electricity-producing Bacteria in a Miniaturized Microbial Fuel Cell Array," *Journal of Renewable and Sustainable Energy*, Vol. 6, pp. 063110, 2014.

**A. Fraiwan, S. P. Adusumilli**, D. Han, A. J. Steckl, D. F. Call, C. R. Westgate, and S. Choi, "Microbial Power-generation Capabilities on Micro-/Nano-structured Anodes in Micro-sized Microbial Fuel Cells," *Fuel Cells*, Vol. 14, pp. 801-809, 2014.

**J. Huang**, N. E. Wu, and **M. C. Ruschmann**, "Data-availability-constrained Placement of PMUs and Communication Links in a Power System," *IEEE Systems Journal*, 2014.

**H. Lee**, and S. Choi, "A Micro-sized Biosolar Cell for Self-sustaining Power Generation," *Lab Chip*, Vol. 15, pp. 391-398, 2015.

**B. Liu**, E. Blasch, Y. Chen, A. J. Aved, **A. Hadiks**, D. Shen, and G. Chen, "Information Fusion in Cloud Computing Era: A Systems-Level Perspective," *IEEE Aerospace and Electronic Systems (AES) Magazine*, Vol. 29, No. 10, pp.16-24, October 2014.

**C.-Y. Peng**, T. P. Dhakal, S. Garner, P. Cimo, S. Lu, and C. R. Westgate, "Fabrication of Cu<sub>2</sub>ZnSnS<sub>4</sub> Solar Cell on a Flexible Glass Substrate," *Thin Solid Films* Vol. 562, pp. 574-577, 2014.

**M. Pourhomayoun**, Z. Jin, and M. L. Fowler, "Accurate Tumor Localization and Tracking in Radiation Therapy Using Wireless Body Sensor Networks," *Computers in Biology and Medicine (ELSEVIER)*, Vol. 50, pp. 41-48, July 1, 2014.

**M. Pourhomayoun** and M. L. Fowler, "Distributed Computation for Direct Position Determination," *IEEE Transactions on Aerospace and Electronic Systems*, October 2014.

**P. P. Rajbhandari, A. Emrani**, T. P. Dhakal, C. R. Westgate, and D. Klotzkin, "Antireflection Coatings Designed by the Average Uniform Algorithm for Thin Film Solar Cells," *Applied Optics*, Vol. 53, No. 34, pp. 8006-8011, December 2014.

**N. K. Sidhu** and A. C. Rastogi, "Vertically Aligned ZnO Nanorod-polypyrrole Sheath and Nanotube Arrays for Electrochemical Energy Storage," *Nanoscale Research Letters*, Vol. 9, pp. 453-469, 2014.

S. Laszlo, **M. V. Ruiz-Blondet**, N. Khalian, F. Chu, and Z. Jin, "A Direct Comparison of Active and Passive Amplification Electrodes in the Same Amplifier System," *Journal of Neuroscience Methods*, Vol. 235, pp. 298-307, September 2014.

## **Student Presentations**

**S. P. Adusumilli**, J. M. Dederick, T. P. Dhakal, I. T. Bae, S. M. Garner, P. Cimo, A. C. Rastogi, A. Sharma, and C. R. Westgate, "Iron Pyrite Thin Films Grown through a One-step Sulfur Annealing of Iron Oxide using TBDS and H<sub>2</sub>S on Rigid and Flexible Glass Substrates," *Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**A. Emrani**, T. P. Dhakal, and C. R. Westgate, "CZTS Solar Cells Fabricated by Fast Sulfurization of Sputtered Sn/Zn/Cu Precursors Under H<sub>2</sub>S Atmosphere," *40<sup>th</sup> IEEE PVSC Conference*, Denver, Colorado, USA, June 8-13, 2014.

**C.-Y. Peng**, T. P. Dhakal, **P. P. Rajbhandari**, S. Garner, P. Cimo, S. Lu, and C. R. Westgate, "Flexible CZTS Solar Cells on Flexible Corning Willow Glass Substrates," *40<sup>th</sup> IEEE PVSC Conference*, Denver, Colorado, USA, June 8-13, 2014.

R. R. Tobias, T. P. Dhakal, **P. P. Rajbhandari**, C. R. Westgate, and P. Borgesen, "Electronic Loss Mechanisms of Cu<sub>2</sub>ZnSnS<sub>4</sub> (CZTS) Thin-Film Solar Cells: Perspectives from I-V and QE Measurements Coupled with 1-Dimensional Heterostructure Simulations," *Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**R. Sadeghian**, M. Ratnagari, S. A. Zahorian, and H. T. Bunnell, "Using Automatic Speech Recognition for Diagnosis of Children's Speech Delay," *169<sup>th</sup> Meeting of the Acoustical Society of America*, Pittsburgh, Pennsylvania, USA, April 2015.

**N. K. Sidhu** and A. C. Rastogi, "A Hierarchical Nanostructure Electrode with 3-Dimensional ZnO Nanorod and Pedot Nanotube and Nanofibre Network Assembly for Supercapacitor Energy Storage," *Symposium Z: Materials Challenges for Energy Storage across Multiple Scales, Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**N. K. Sidhu** and A. C. Rastogi, "Facile Synthesis and Characterization of 3-Dimensional Nanocomposite Architecture of Zinc Oxide and Poly(3,4-ethylenedioxythiophene) for Supercapacitor Energy Storage," *Symposium JJ: 3D Mesoscale Architectures – Synthesis, Assembly, Properties and Applications, Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

N. R. Janardhana, **N. K. Sidhu**, R. R. Thankalekshmi, and A. C. Rastogi, "Ionic Liquid Electrochemical Synthesis of Earth Abundant Monophase Chalcostibite p-CuSbS<sub>2</sub> Photo-absorber Thin Films for Heterojunction Solar Cells With n-ZnO," *Symposium V: Sustainable Solar-Energy Conversion Using Earth-Abundant Materials, Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**N. K. Sidhu** and A. C. Rastogi, "Synthesis and Electrochemical Properties of Polypyrrole Conducting Polymer in Sheath like Nanotube Arrays Structured over TiO<sub>2</sub> for Supercapacitor Energy Storage Devices," *Symposium JJ: 3D Mesoscale Architectures – Synthesis, Assembly, Properties and Applications, Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**N. K. Sidhu** and A. C. Rastogi "Vertically Aligned Polypyrrole Nanostructures using TiO<sub>2</sub> Nanotube Template for Supercapacitor Electrodes by Pulsed Electropolymerization Synthesis for Energy Storage," *Symposium Z: Materials Challenges for Energy Storage across Multiple Scales, Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**S. Singh**, A. C. Rastogi, F. Omenya, M. S. Whittingham, A. Lal, S. Upreti, "Electrochemical Performance of Lithium-Ion Hybrid Supercapacitors based on Activated Carbon and Nanoplatelet Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub> Insertion Electrode Synthesized by Nanoscission Technique," *Symposium Z: Materials Challenges for Energy Storage across Multiple Scales, Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**A. Verma, S. Singh**, and A. C. Rastogi “Optoelectronic Properties of Semiconducting Zinc Oxysulfide  $ZnO_{1-x}S_x$  Thin Films Synthesized by diffusion Limited Sulfurization of Zinc Oxide in di-tert-butyl disulfide Vapor Flux,” *Symposium O: Oxide Semiconductors, Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**A. Verma** and A. C. Rastogi “Sulfur Alloyed n- $ZnO_{1-x}S_x$ /n-ZnO Bilayer Thin Films for Application as Cd-Free Buffer Layer in Heterojunction Solar Cell Devices,” *Symposium V: Sustainable Solar-Energy Conversion Using Earth-Abundant Materials, Materials Research Society (MRS) Conference*, Boston, Massachusetts, USA, November 30-December 5, 2014.

**R. Wu, B. Liu**, Y. Chen, E. Blasch, H. Ling, and G. Chen, “Pseudo-Real-Time Wide Area Motion Imagery (WAMI) Processing for Dynamic Feature Detection,” *8th IEEE Symposium on Computational Intelligence for Security and Defense Applications (IEEE CISDA)*, Verona, New York, USA, May 26-28, 2015.

**H. Zhang, X. Chen**, and S. A. Zahorian, “On the Use of Respiratory Masks for Speech Measurements,” *169<sup>th</sup> Meeting of the Acoustical Society of America*, Pittsburgh, Pennsylvania, USA, April 2015.