YULI WANG

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EDUCATION

University of california, Santa Cruz 2019-now
Master of Science, Electrical and Computer Engineering, GPA: /4.0
Huazhong University of Science and Technology 2014-2018
Bachelor of Engineering, Mechanical Engineering, GPA: 3.75/4.0

EXPERIENCE

University of california, Santa Cruz Sep. 2019 - Present
Research Assistant *Santa Cruz, CA*

Head and Neck Organ-dedicated PET

- Working on designing, building, and evaluation of an semiconductor based head and neck dedicated positron emission tomography system with SLAC National Accelerator Laboratory and radiologists in Carle Foundation Hospital.
- Developing and characterizing a high-resolution and depth-of-interaction capable scintillator based detector for building the PET system.

New Mechanisms of Ionization Radiation Detection for ToF-PET

- Developing a python based simulation trials for study the detection sensitivity of optical properties-based radiation detection for PET
- Using new perovskite semiconductor materials to study the prompt Cherenkov Luminescence for PET collaborated with Stanford MIIL lab.

Stanford University Aug. 2018 - Feb. 2019
Research Assistant *Palo Alto, CA*

- Designed and developed two beam interference setup, Mach-Zehnder interference setup and light transmission setup to study Free Carrier Effects for an optical property modulation-based detector concept for PET.
- Collaborated with Stanford Nano Shared Facilities to investigate the dependence of detection sensitivity on electric field distribution for ultrafast optical modulation.

Huazhong University of Science and Technology Aug. 2018 - Feb. 2019
Research Assistant *Wuhan, China*

- Built a two-crossed-polarizers based experimental platform to investigate the feasibility of optical property modulation-based detection method for PET.
- Evaluated the sensitivity and stability of setup with laser diode and Na-22 as ionizing radiation source respectively, demonstrating this method could be a potential way to dramatically improve PET coincidence time resolution .

Missouri University of Science and Technology July-Sep. 2017
Sales Consultant *Rolla, MO*

- Designed, prototyped and evaluated an energy-harvesting power supplier consisting with a helical turbine and a DC-DC converter based charging circuit.

RESEARCH INTERESTS

- **Bio-imaging and molecular imaging technologies** with particular interest in novel detector development, system simulation, and data acquisition.
- **Computer vision and machine learning** applied for medical imaging processing and medical physics.

SKILLS

- Programming: Proficient in MATLAB, Python (Keras, TensorFlow), FPGA (VHDL), Linux
- EDA/CAD tool: Altium Designer, Solidworks, AutoDesk CAD, Vivado/ISE Design Suite

HONORS, AWARDS AND FELLOWSHIPS

- IEEE Nuclear Science Symposium and Medical Imaging Conference Trainee Grant Scholarship of 2019
- UCSC Graduate Student Travel Award of 2019
- Outstanding Undergraduate Award for Huazhong University of Sci. and Tech. (HUST) of 2018
- First-Class Academic Scholarship for HUST of 2018
- Chinese Scholarship Council (CSC) Undergraduate Scholarship of 2017

PUBLICATIONS

Journal Papers:

- Zhang, H., **Wang, Y.**, Qi, J. and Abbaszadeh, S., 2020. Penalized maximum-likelihood reconstruction for improving limited-angle artifacts in a dedicated head and neck PET system. Physics in Medicine Biology.
- **Wang, Y.**, Li, Y., Yi, F., Li, J., Xie, S., Peng, Q. and Xu, J., 2019. Two-crossed-polarizers based optical property modulation method for ionizing radiation detection for positron emission tomography. *Physics in Medicine Biology, 64(13), p.135017.*
- Jun Li, Dian He, Guozhu Chen, Chen Chen, **Yuli Wang**. Optimization design for cutting parameter of 38CrMoAl valve sleeve. *Construction Machinery* (Chinese Journal).

Conference Paper:

- **Wang, Y.**, Tao, L., Levin, C. S. and Xu, J., Approaches to improving the detection sensitivity of optical modulation based radiation detection method for positron emission tomography. *In 2019 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC)* (pp. 1-3). IEEE.
- **Wang, Y.**, Tao, L., Levin, C. S. and Xu, J., Investigation of optical property modulation based ionizing radiation detection method for PET: two-crossed-polarizers based method. *In 2019 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC)* (pp. 1-3). IEEE.
- **Wang, Y.**, Li, Z. and Xu, J., 2019, March. Investigation of Pockels effect in optical property modulation-based radiation detection method for positron emission tomography. *In Medical Imaging 2019: Biomedical Applications in Molecular, Structural, and Functional Imaging* (Vol. 10953, p. 1095306). International Society for Optics and Photonics..
- **Wang, Y.**, Li, Y., He, L., Shamsi, P. and Zheng, Y.R., 2018, March. An energy-harvesting power supply for underwater bridge scour monitoring sensors. *In Nondestructive Characterization and Monitoring of Advanced Materials, Aerospace, Civil Infrastructure, and Transportation XII* (Vol. 10599, p. 105990H). International Society for Optics and Photonics.

Working Paper:

- **Wang, Y.** and Abbaszadeh, S., Detection sensitivity of optical property-based radiation detection for PET: refraction index modulation. (Submit), *2020 IEEE Nuclear Science Symposium (NSS) and Medical Imaging Conference (MIC)*.
- **Wang, Y.**, Tao, L., Abbaszadeh, S. and Levin C. S., Novel radiation detector concept based on ionization-induced modulation of optical polarization. (Submit), *Physics in Medicine & Biology*, (Jul. 2020).
- Li, M., **Wang, Y.** and Abbaszadeh, S., Development and initial characterization of a high-resolution PET detector module with DOI. (Submit), *Physics in Medicine & Biology*, (Jun. 2020).
- Romanchek, G., Marupudi, H., **Wang, Y.** and Abbaszadeh, S., Performance of optical coupling materials in scintillator detectors post temperature exposure. (Submit), *MDPI Sensors*, (Jul. 2020).

SERVICES

- Reviewer for the IEEE Transactions on Radiation and Plasma Medical Sciences and IEEE SORMA West 2020.
- Member of UCSC IEEE Eta Kappa Nu (HKN).