Yu Kai

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🏛 USTC (MS in Astronomy)

Projects

Research on readout electronics methods for CsI crystal arrays based on SiPM arrays.(2024-4 to Present)   *See more* ↗

- Designed frontend circuits including operational amplifiers, ADC sampling, and et al. (to amplify weak analog signals and convert them to digital signals.)
- Developed a multiplexed resistor-encoded network circuit.(to encode signals using analog circuitry, reducing the number of readout channels.)
- Designed PC software in LabWindows/CVI to provide an interactive data processing interface (C programming).(for interactive data processing and display).

Developed a testing system for the LNGS.(2023-6 to 2024-4)   *See more* ↗

- Designed FPGA PCB backplane, differential signal conversion circuits, serial and USB transmission circuits (hardware design).
- Developed internal FPGA logic to implement functions like timing control, error checking, and data transmission (FPGA programming).
- Designed PC software in LabWindows/CVI to provide an interactive control interface (C programming).

Skills

Proficient in digital and analog circuit design.

Program languages:

Hardware languages CHISEL, Verilog

Software languages C, Scala

English Proficency: TOFEL (87/120) ,CET6

PCB design software: Altium Design, JLC EDA, LTSPICE

Publications

[Design and Realization of the Test System for Chang'e-7 Lunar Neutron Gamma Spectrometer ↗](#)	Reviewing
Yu Kai, Zunlei XU ,Yongqiang ZHANG,et al	
[Performance Comparison of SiPM Arrays Using DPC and SCD Methods at the Same Channel Reduction Rate ↗](#)	In Prep
Yu Kai, Zunlei XU ,Yongqiang ZHANG,et al	