

# Yu Kai

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## Education

**GuangDong University of Petrochemical Technology**  
*BS in Safty Engineering*

*Sept 2018 – June 2022*

**University of Science and Technology of China**  
*MS in Astronomy*

*Sept 2022 – Present*

## 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 Proficiency:** TOFEL (105/120) ,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](#) 

in Prep

**Yu Kai**, Zunlei XU ,Yongqiang ZHANG,et al