Personal Introduction

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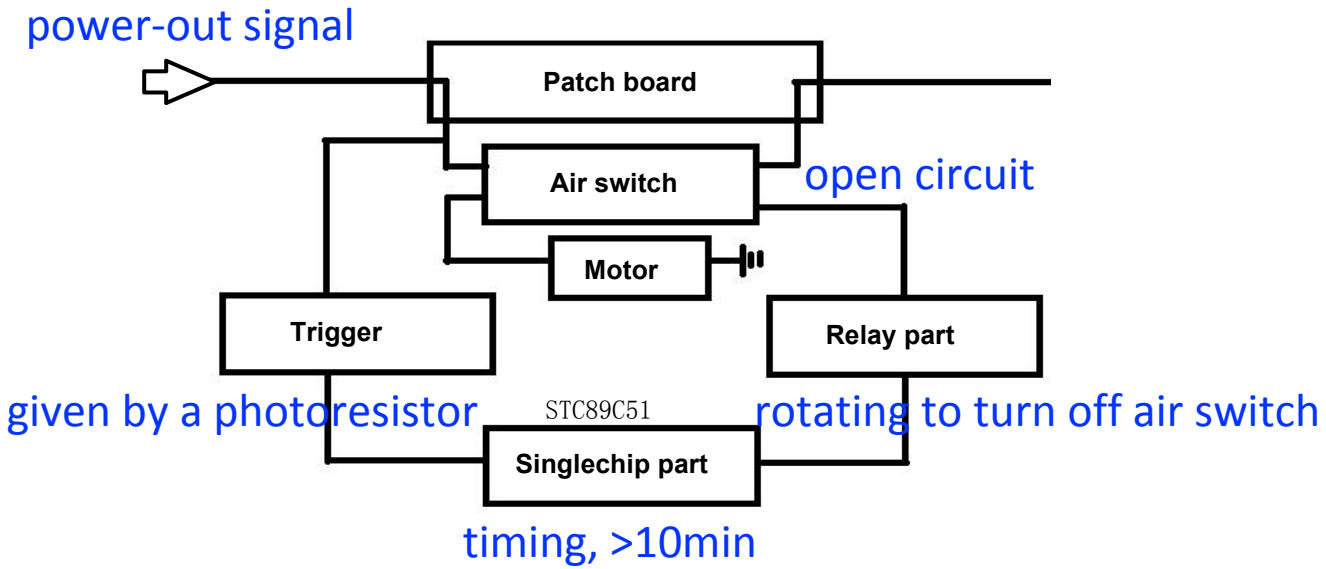
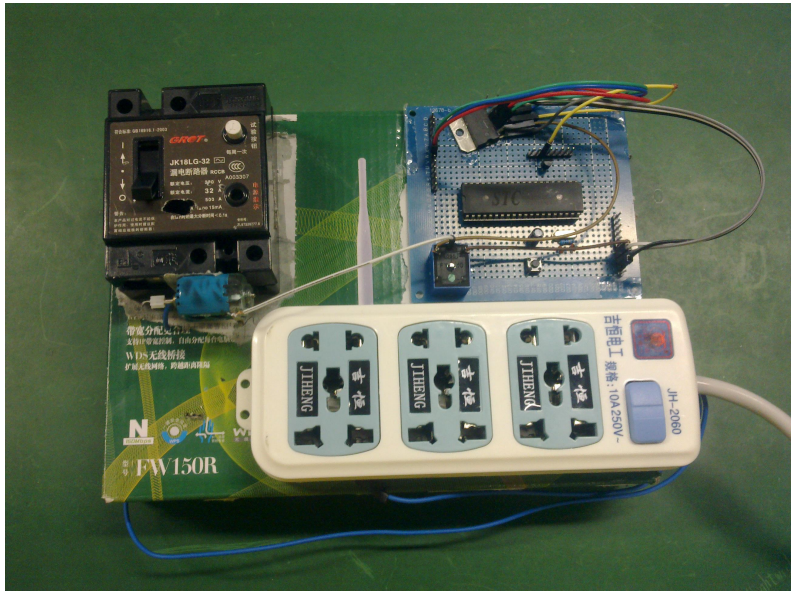
Undergraduate years ---- Scientific research project

Automatic power-off protector: taking place of normal patch board, in case of power recovering in wrong time
Background: High Purity Germanium Spectrometer is not allowed to re-power in (10min, 18h) after outage, because it needs time for detector system back to room temperature.

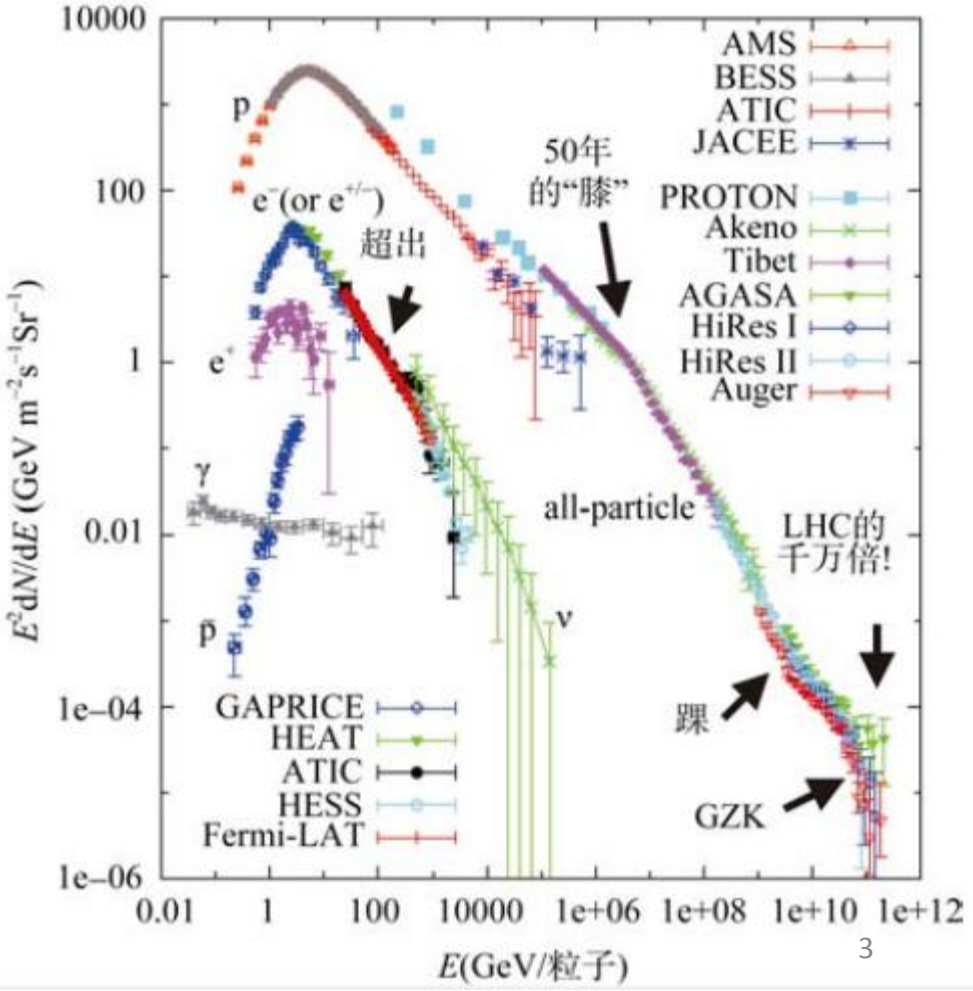




Undergraduate years ---- Bachelor thesis

Study on the hardening of cosmic rays spectrum from cosmic rays interaction

Data of PAMELA, ATIC-2 and CREAM indicate an obvious hardening in the energy spectra of the major species including proton, helium, carbon, oxygen, neon, magnesium, silicon and iron with energies at about 200GeV per nucleon. We propose that the hardening can originate from the interactions of cosmic rays with the ambient X−ray radiation field of supernova remnants, and the difference between the spectra of proton and helium nuclei may also be described via the difference of the interactions which they participate in while the fact that all the nuclei participate in the similar interactions may be the reason that they have the similar hardening.



Undergraduate years ---- Bachelor thesis

Pair production: $A + \gamma \rightarrow A + e^{+} + e^{-}$

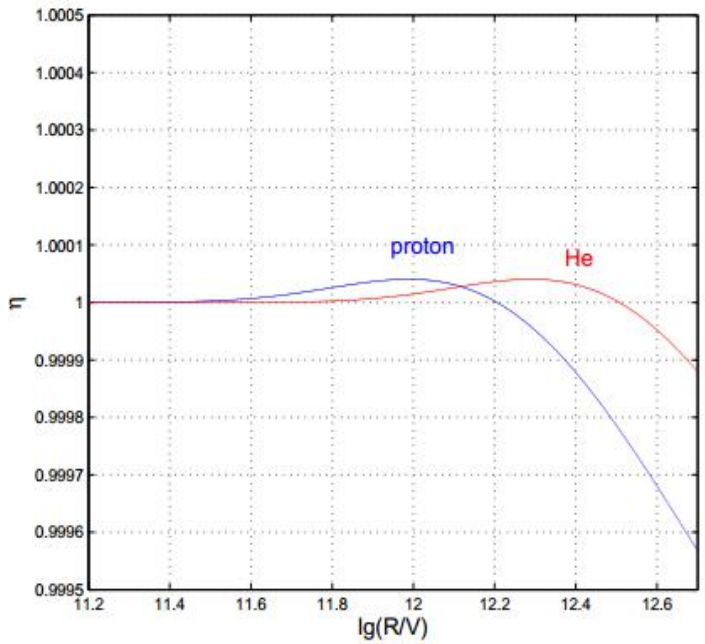
π production: $p + \gamma \rightarrow \pi + N$

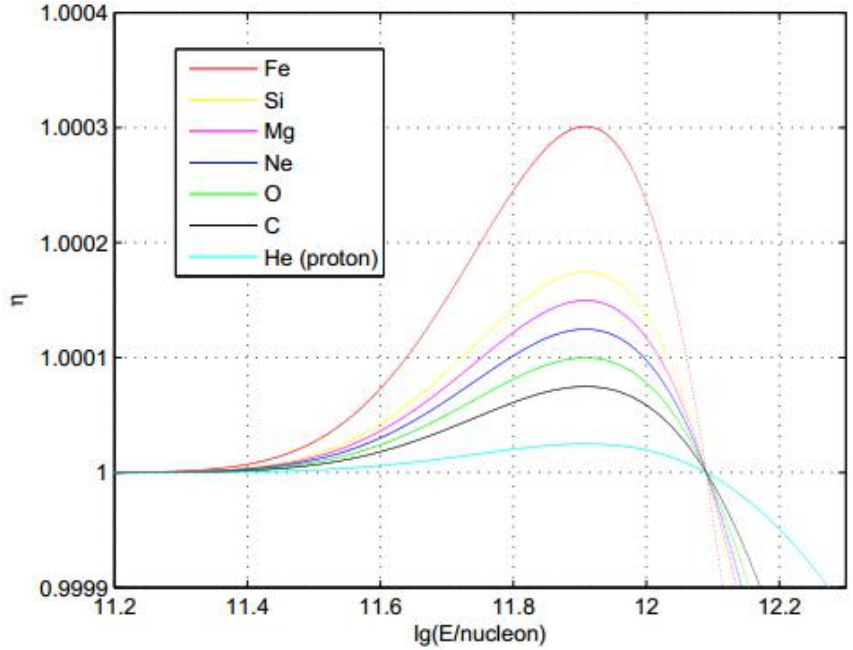
Photodisintegration: $A + \gamma \rightarrow (A - n) + nN$

Undergraduate years ---- Bachelor thesis

Correction factor: $$\eta(E) = 1 + \beta\tau\left(\frac{d\ln\beta}{d\ln E} - \alpha\right)$$

where $$\beta = \frac{\alpha r_e^{\,2} Z^2 m_e^{\,2} T^2}{\pi^2 E} f(\nu)$$ and $$f(\nu) = \nu^2 \int_2^{\infty} \frac{\phi(\varepsilon)}{e^{\nu\xi}} d\xi$$

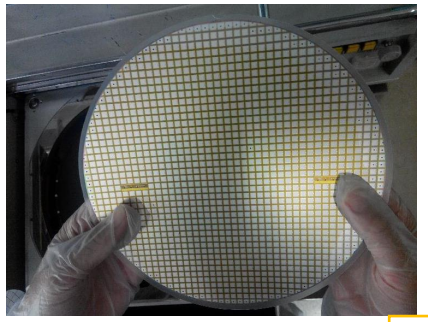




我们初步研究了宇宙线粒子与超新星遗迹周围辐射场发生的相互作用作为能量几百GeV/核子处能谱硬化的可能性。

Experience in working

Input → Packaging → Test → Output



- Front-end
  - Wafer Saw
    - Wafer Tape
    - Back-grind
    - Wafer De-tape
    - Wafer Mount
    - Wafer Saw
  - Die Bond
  - Wire Bond
- Back-end

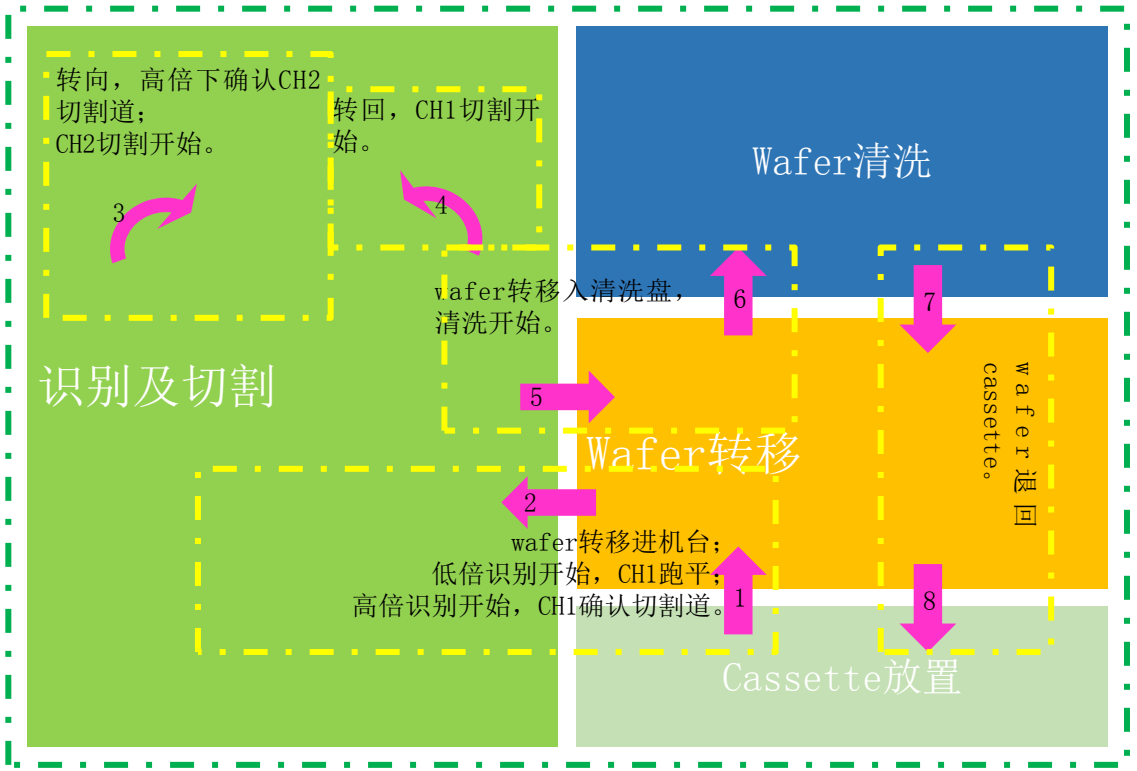
DFD6360A

TO247

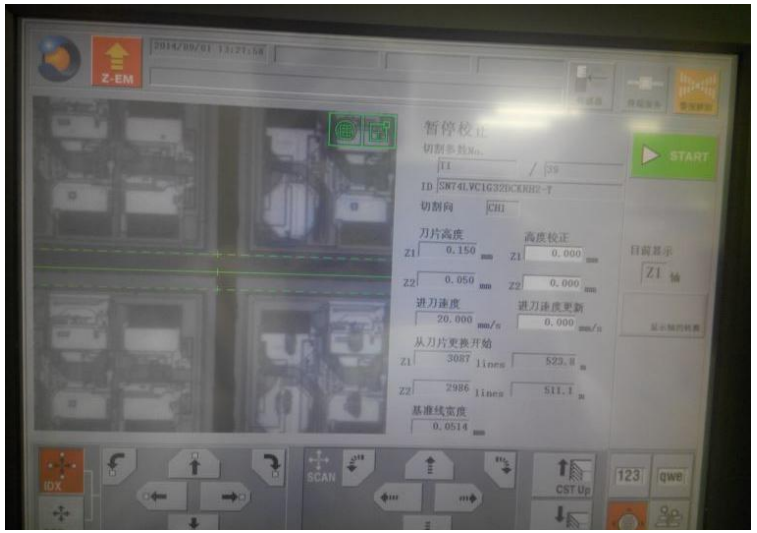
TO-92

⋮

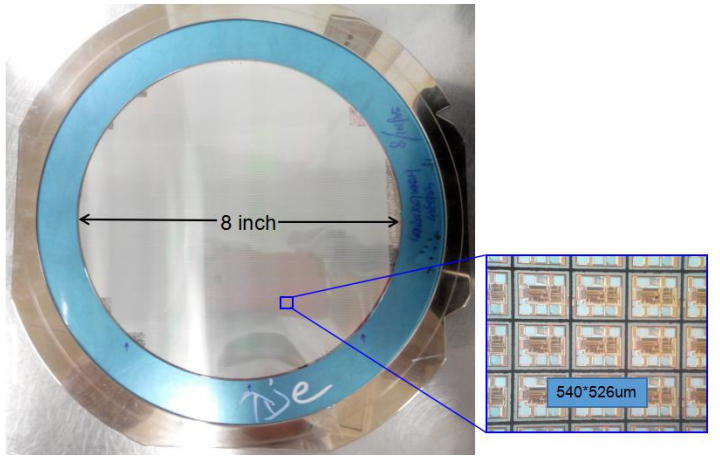
Experience in working



Process of DFD6360A



Interface for calibration



Wafer after sawing

Postgraduate years

1. \jpsi to invisible
   calculate confidence limit
   modify memo
2. χ_{CJ} to invisible
   to do

Thanks!

Back-up

PAMELA 是一个在地球轨道卫星上架设的宇宙射线探测器模组。此探测器于2006年6月15日发射，是第一个运用卫星作载体的观测宇宙射线的实验。该实验主要观察的对象为宇宙射线中的反物质成分，比如正电子和反质子。其它任务包括长期监控太阳的对宇宙射线的调制作用，测量地球磁层中存在的的高能量粒子，以及气体巨行星放出的电子。 此计划也期望能够观测到暗物质在宇宙中湮灭的实质证据。

CREAM实验是用一系列的超长时间气球飞行来测量宇宙线元素光谱的，目标是增加对宇宙线组分以及产生巨大空气簇射的直接测量（这些目前主要是在地面测量的），从而提供间接测量的校准。