



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2018 PROJECT SUMMARY**

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<b>Project Title</b> Affordable Quantum Entanglement Detector	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Using gamma rays from Na-22 matter-antimatter annihilation, we can generate entangled gamma rays, we hope to design quantum gate using aluminum.</p> <p><b>Methods/Materials</b> Geiger counter boards, Aluminum, Lead, Na-22, Geiger tubes, Arduino board</p> <p><b>Results</b> Making a low-cost quantum gate. Using lead to block all radiation outside to maximize gamma rays detection result in the polarized states.</p> <p><b>Conclusions/Discussion</b> Although there are more expensive quantum gates, we are able to make a less expensive one with substantial efficiency and precision.</p>	
<b>Summary Statement</b> We are able to build affordable quantum entanglement detector	
<b>Help Received</b> I recognize my science teacher Mr. Brown as our adviser and he helped us for buying materials (radiation source).	