

2006 TAIWAN INTERNATIONAL SCIENCE FAIR

CATEGORY : Physics

PROJECT : Free-dimensionalism

SCHOOL : St.Paul's College

FINALISTS : Sham Juan Kevan & Lam Wai Kei

COUNTRY : Hong Kong

APPENDIX 2

ABSTRACT OF EXHIBIT TAIWAN INTERNATIONAL SCIENCE FAIR

CATEGORY : Physics

TITLE : Free - dimensionalism

NAME : Shum Juan Kevan, Lam Wai Kei

COUNTRY : Hong Kong, China

Contents of Abstract: (maximum 500 words) include

- a. Purpose of the Research
- b. Procedures
- c. Data
- d. Conclusions

One afternoon, a photography enthusiast, Mr. Cheung was holding some photos, completely absorbed in the fond (but ancient) memories of his honeymoon in Cairo. The badly-yellowed photo prints reminded him of every sweet and romantic moment of the “good old days”. He was soon rudely awakened when Mrs. Cheung shouted, “Honey dear! I was told that high-tech is ‘in’, and the single-lens reflex camera is totally out! So stop hugging the old out-dated pictures.” Mr. Cheung fired back, “Oh, you know nothing. This is something you cannot replace at all, and my camera is a classic.” Smiling at him, Mrs. Cheung took out a new gadget, “Right, right, now calm down. It never hurts to have both worlds. Look what I’ve got you. This is called ‘**Stereoscopic Camera Lens**’. Its little coloured spectacles can capture everything, say, the sensational Great Pyramid, in three dimensions!”

As we are asking for and relying more on technological advances, the **Stereoscopic Camera lens** and the **Stereoscopic Magic Box** are surely innovations that promise to add a *new dimension* to our lives. Surprisingly, the working of these two gadgets involve only some simple scientific theories such as polarization, doping and anaglyph; and employs the special property of Liquid Crystal Layer (LCD) under electric current. Stereoscopic photos can now be easily available to us.

Both of our designs, the **Stereoscopic Camera Lens** and the **Stereoscopic Magic Box**, can turn something ordinary into extraordinary by making plain, 2-dimensional things ‘stand out’ before your eyes. The **Lens** itself is crafted with such precision that it can capture any image both faithfully and flawlessly. The **Magic Box** uses electric current to catalyze and enhance the 3-dimensional transformation. So each picture is vibrant and true-to-life. The **Lens** and the **Magic Box** will certainly revolutionize our *vision* of things around us.

To enable you to have a good understanding of the theories behind the making of the **Stereoscopic Camera Lens** and the **Stereoscopic Magic Box**, we have made simple models of them with prisms, and they are in display at our booth. Anyone who is interested in these fancy gadgets should definitely come to our booth to experience a new *view* of the world!

評語

This project designed several setups for three-dimensional pattern recording and viewing. The color separation setup was presented. For the polarization setup using liquid crystal, only a simulated model was presented.