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LABORATORY REPORT
STAGE REPORT FOR
INTEGRATED 3D INKJET PRINTER TECHNIQUES

INTRODUCTORY SUMMARY

Last month, our project just pass the establishment examination. In this month, fortunately, we have obtained a further progress.

Since the idea of creating a product called "integrated 3D painting machine" has been set up, which will color an ideal pattern to a cubic object based on its feature. However, the specific structure of the product is not determined then. We divide our project into 4 processes this time.

LAB MATERIALS

Mechanical Arm and Scanner
Software and programing needed.

OPERATING PROCESS:

Step 1:

Building a virtual 3D model

To process 3D reconstruction, the first step required is to obtain a certain number and quality of 2D photos, so as the shooting range, intensity, angle and number of photos.

When shooting, the shape, color and light and other uncertainties will increase the difficulty of obtaining the main part of the object, and it is also difficult to ensure the integrity of the theme of the image. When generating 3D map, the resulting image is mostly black and white. But for better rendering of the original physical 3D models, you need to get the colors and

the light from a 2D picture.

Non-contact scanning has some drawbacks while contact scanning can help.

Step 2:

Transforming 2-D graphic design into 3D renderings

To match the problem exists between the two-dimensional plane of the existing design and spatial entities, strict acquisition for data is needed to process 3D models and the designed pattern will be converted into a two-dimensional graphic design to match the 3D renderings.

Step 3:

Generating the print path

In the matter of controlling the output, we need to analyze the path after the dot generated, and then set the best path. Take the efficiency of nozzles usage into account.

Step 4:

Printing 3D color image

How many degrees of freedom can maintain both accuracy and efficiency; how to improve the hardware design for freedom; How to change in color.

CONCLUSION

We separated our project into 4 parts so that we can have a detailed division of labor.

We wonder whether it is scientific to analyze our project like this. Hoping for your instruction.

Sincerely,
Yang, Jingkang.