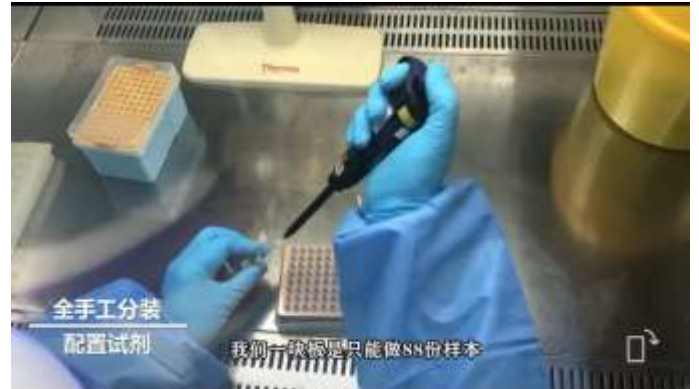
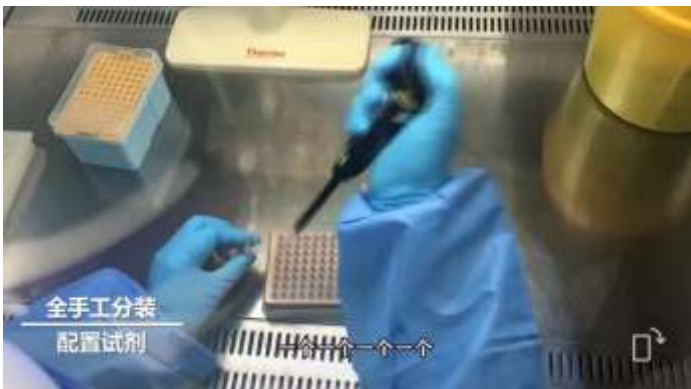


A new rapid pharmaceutical detector based on AI vision (Solution for Drug Detection of Porous Drug Box/Microporous Test Plate)

ZHUHAI NO.2 HIGH SCHOOL Siyin song, Xiaowei Guo Lanxi Wu

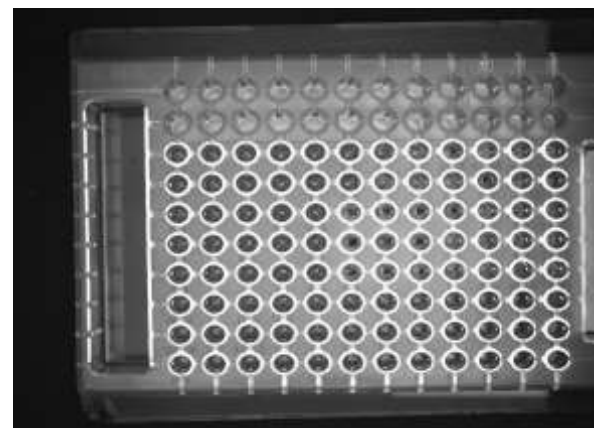
一、Research background:

Nowadays, the pipetting process of the agent and the presence or absence of the agent in the test box are performed manually, There are many problems such as inefficient and missed detection.



Manual pipetting procedure (Micropore reagent test box -96 holes)

二、Research object: How to intelligently and quickly judge the presence or absence of reagents in the Microporous agent test box?



Porous test plate

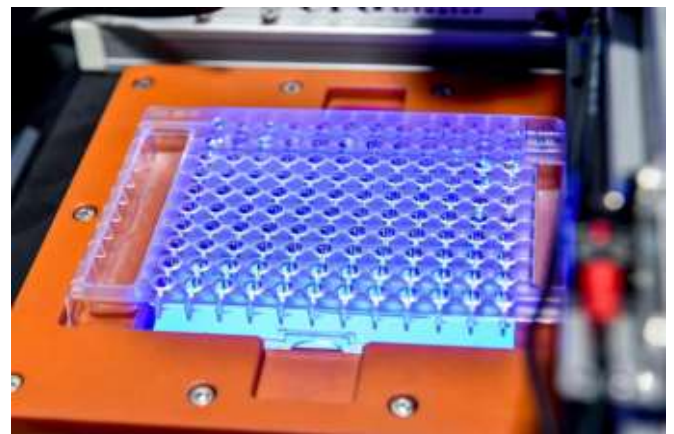
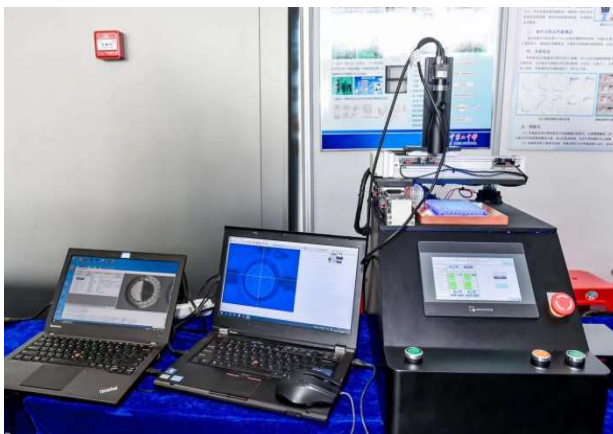
Micropore reagent test box -96 holes

三、 **Solution: A new rapid pharmaceutical detector**

The invention we bring is: A new rapid pharmaceutical detector based on AI vision. The main function of the instrument is to use AI vision technology to intelligently and quickly judge the presence or absence of reagents in the Microporous agent test box

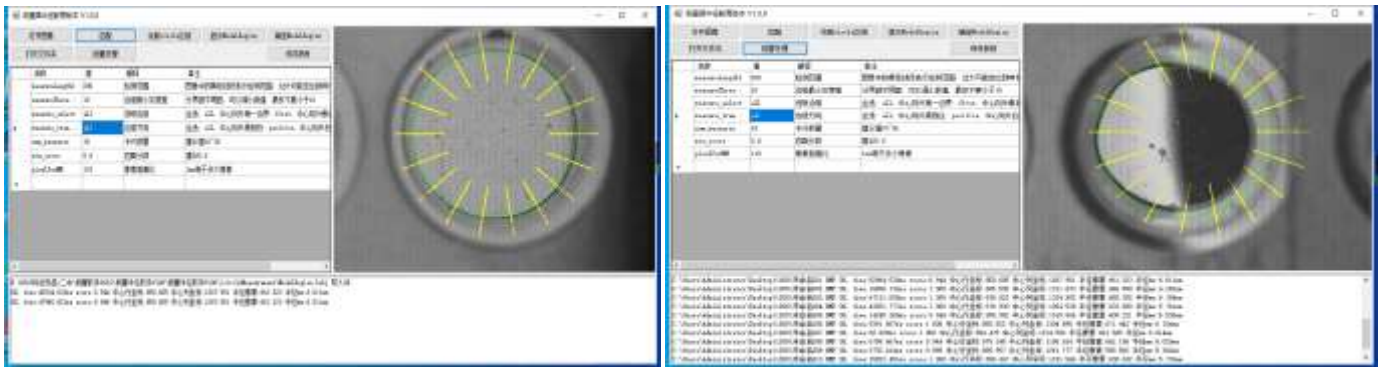
四、 Product Introduction:

1、 Using AI vision technology, clear and standard pharmaceutical liquid level images of microporous pharmaceutical boxes are captured through telecentric lenses and industrial cameras. A multi perspective and multi-dimensional standard image database is established, and a visual judgment benchmark for pharmaceutical liquid level is formed through the training and learning system of visual software. When testing, simply place the microporous reagent box containing the reagent into a fixed fixture, press the start button of the instrument, and the XY platform will drive the AI visual system to take photos and compare images. If there is a lack of reagent in a certain hole in the reagent box, the system will automatically issue a prompt to select and judge the unqualified reagent box.

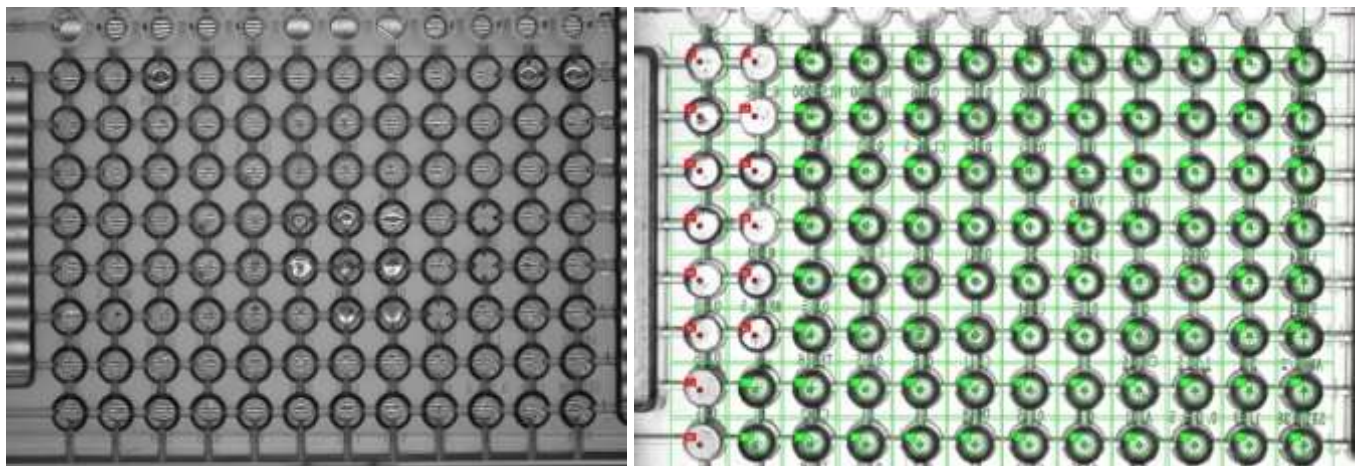


2、 **Basic detection process:** Take photos of the reagent liquid level in

each hole of the reagent test box under a special light source, automatically extract and analyze image features, and quickly provide judgment results.



3、 Standard detection process: Using a larger field of view telecentric lens and a ten million pixel CMOS camera, the entire 96 hole test board can be photographed, and the entire board is automatically labeled (red indicates no medication in the hole, green indicates medication).



4、 Comparison between new rapid pharmaceutical detector and

traditional detection methods

projects	traditional detection methods	Basic detection process	Standard detection process
test method	Human eyes	AI vision system (single hole detection one by one)	AI Vision System (Full Box Automatic Marking)
detection time	About 70 seconds	50 seconds	15 seconds
locate mode	manual operation	XY axles platform, metallurgical tools	Fixed bracket
Auxiliary light source	Natural Light	Blue LED parallel light source	Special LED parallel light source
accuracy	85%	95%	98%
operator	Long training and operation required	30 minute training	30 minute training
work time	8-10 hours	24 hours	24 hours

5、Product Display

总体效果视图

