



# User Manual

Portable color microcirculation detector

XUZHOU JIAHUA ELECTRONIC INSTRUMENT CO.,LTD

Local Distributor:

MEMDA İÇ VE DIŞ TİC. DAN. LTD. ŞTİ.

# Instruction manual

**To ensure normal use, before use of this equipment, please make sure read the instruction manual carefully.**

### **\*Security tips**

- 1 . Do not remove any other components except the detachable part in the instruction.If there is some matters ,please contact with After-Sale Service Dep. of our company
- 2 . The input voltage is AC 100-240V then convert to DC 12V ,and above 2.0A of electric current
- 3 . This instrument can produce the higher source luminance, don't look light directly, to avoid the eyes'hurt.
- 4 . The instruction is appropriate for the JH-1004(JH-C) detection instrument for microcirculation

### **Purpose**

**Note:** USB fuction ,software and computer are optional

Portable color microcirculation microscope is an advanced medical photoelectric apparatus, equipped with a special LED light source, used mainly on human nailfold capillary microcirculation of microscopic examination of dynamic perspective, USB Video Capture cards and notebook computers with the real-time dynamic clear indication of the microcirculation vascular morphology, flow pattern, loop weeks images, which can be right microcirculation image capture, video, surveying microvessel diameter, pipe length, velocity and other indicators and may microcirculation indicators for expert analysis and medical points, beautifully printed copies of the report alone.

The apparatus is widely used for a variety of clinical diseases (such as cardiovascular, hypertension, stroke, diabetes, rheumatoid arthritis, etc.) microcirculation change occurred in the early diagnosis,

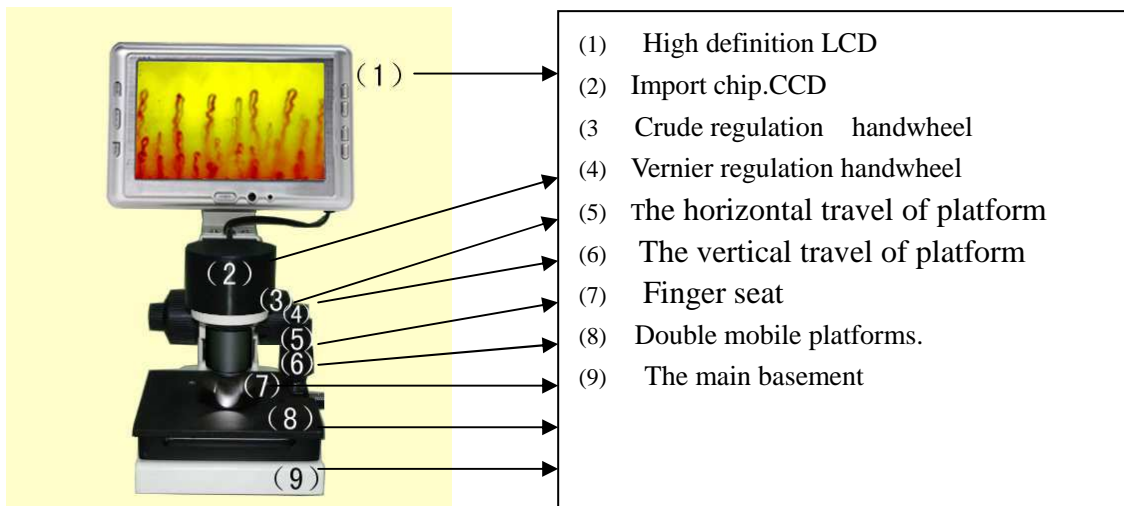
## Instruction manual

prediction, the effect of judgment and prognosis of other aspects. Operation is simple, rapid, and noninvasive, without any side effects.

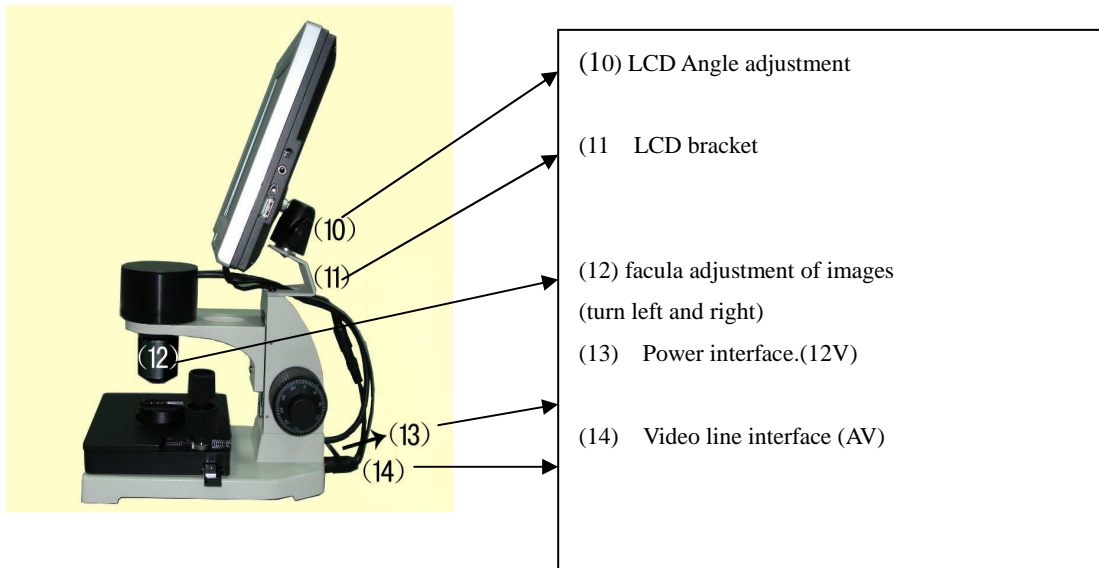
Meanwhile, widely used in medicine and health products, human health, census beauty care and other areas of human fingernails Microcirculation Detection Analysis.



### PartA : Structure



## Instruction manual



### PartB: Diagrammatical method of detection



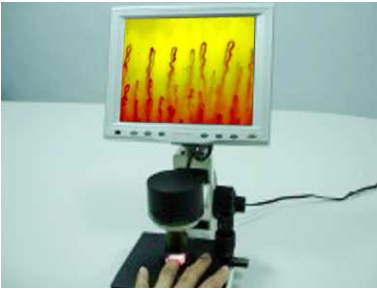
1 , According to the left image,do the developing solutionde spread to the ring fingernail.



2 , Please put the ring fingernail on the finger seat ,put the fingernail under the light exactly . keep relax,and do balance

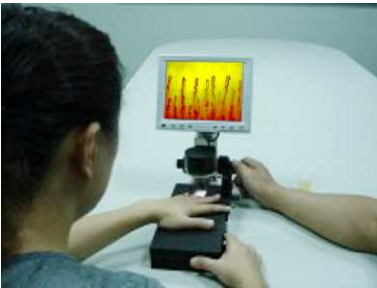
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3 , How to find the blood vessels.

- (1) Adjust the crude regulation handwheel of microscope (ex. image 3&4),to find the clear image
  - (2) Adjust the platform travel of the microscope (ex image 5&6),to find the blood vessel image
  - (3) Do again adjusting the vernier regulation handwheel of the microscope ,( ex. image 4), to find the clear image.
- If the image appear the bright spots, please turn left and right as image. 12.



4, Do adjusting(ex,image 3&4 ) to make the images to achieve the optimal articulation. Do adjusting (ex,image 5&6) to make the images to show different parts of the microscope images

Note: Do adjusting the LCD as follows:

- Make the brightness under 15,
- Make the contrast control from 70 to 85
- Make color contrast to 60
- Make saturation from 70 to 80)

With appropriately feeling for good .

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### Part C: Main Technique parameter

1. total magnifying power : 240 times
2. Achromatic objective lens : 7 times magnification and 25mm effective working distance
3. Coaxial conjugate : range of rough adjustment : 35mm range of fine adjustment : 35mm
4. Coaxial vertical and horizontal movement of the platform : vertical movement area 35mm , horizontal movement area 35mm .
5. electronic light source : rated voltage : 220V 50Hz mercury lamp: 125W, tungsten lamp :250W, fuse tube: 5A ,Power of blower fan:18W

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6. Fiber bundle: diameter : 6mm , length : 1000mm , transmittance $\geq$ 70%.

### Part C : Maintenance

1. The instrument must lay aside cool in, is dry, does not have the dust, and does not have the acid and alkali, the steam place.
2. In the room in the air relative temperature is smaller than 80%.
3. When the instrument moves, if two temperature differences bigger, after should wait the instrument to adapt the room temperature only then to install the use, prevented optics lens haze, is mildewy.
4. The lens already verified, did not have voluntarily to disassemble. In the mirror surface dust may use to catch a chill the ball to blow, either (or scratches mirror paper) with the clean writing brush gently to wipe.
5. In the camera target surface has the dust, may use the absorbent cotton slightly to moisten the anhydrous ether and the dehydrated alcohol mixes the fluid gently to clean, cleans when gently revolves by the target surface center to outside cleans
6. In the use should pay attention avoid the objective lens being hard scratches.
7. Keep the instrument surface is clean.

### Part E: Conditions

- 1 The temperature and humidity level should be stable. keep temperature level from 22°C24 °C, and 70% of humidity level.
- 2 The inspector should be sit down , bring into the same height with heart and hand .
- 3 Spread a little fragrant pitch on the nail fold.( The purpose to reduce scattering ,improve the transmittance of light)
- 4 Check should be generally in the morning or afternoon, it had better do the review checking in the same time .

### Part F: The checking object

- 1 Avoid Heavy activity an hour before the examination.
- 2 Have a rest an hour before the examination
- 3 Prohibit taking drugs which have influence of cardiovascular system before examination.
- 4 Do not smoking,washing hands,eating an hour before examination
- 5 Pay attention to the influence of female menses

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### Part G :Trouble Shooting

Breakdown phenomenon	Reason	Trouble Shooting
LED source light is down	The power line plug has not inserted	Reinserts the plug
	Light bulb aging	Change the Light bulb
The monitoring device does not have the picture	The video frequency line short-circuits	Change the video frequency line
	The 12V voltage-stabilized source short-circuits	Change the 12V voltage-stabilized source
	The monitoring device contrast knob has not opened	Clockwise turns on the monitoring device contrast gradient knob
The picture appears the light spot	Wrong light bulb illumination angle	Rotates the LED photosource box, changes the light bulb illumination angle
In the monitoring device picture has the sunspot	The dust on the camera target surface	Moistens the little dehydrated alcohol and the anhydrous ether intermixture with the absorbent cotton turns on lathe scratches

### Part H:Product Warranties

1. This written guarantee scope: This Company and the business agent sell the product which this company produces.
2. The product maintenance card records each item to fill in and the signature after the customer mails back our company by the customer or the business agent, takes the instrument replacement and the maintenance basis.
3. The free maintenance deadline for from delivers goods the date for 18 months.
4. The following reason surely damage does not belong to the maintenance scope:
  - 1.) Has not installed and operates this instrument according to the instruction for use;
  - 2.) After arbitrarily disassembles, the installment, the reduction expands other to attach the damage which causes.
  - 3.) The instrument outer covering bursts and the damage.
  - 4.) The unusual migration creates damage
  - 5.) Because the flood, the fire, the earthquake and so on the irresistible factor creates damage
  - 6.) In the far way transportation process produces damage

### Part I:The Installation and Manual of the Microcirculation Program (optional)

**Note:**when connect it with PC or laptop,Video line connected to the video output terminal (Video Out).

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the other end plugs into the USB Video Capture card video input terminal,USB Capture Card received a computer's USB port.

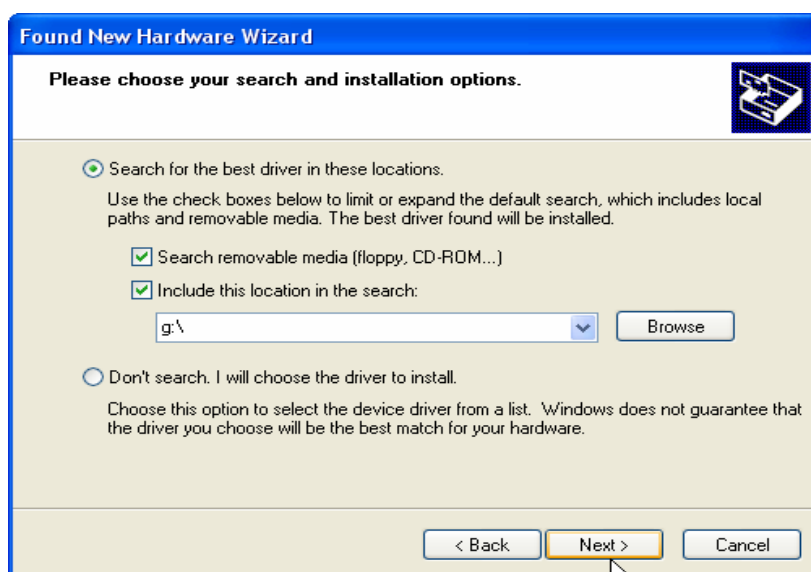
### I.INSTALLATION OF THE USB CARD

- 1.Don't link the USB video card and USB key before computer run.
- 2.Set up the driver of USB video card :

Link the USB Video card with computer, and will get the cue: 'Found New Hardware Wizard',

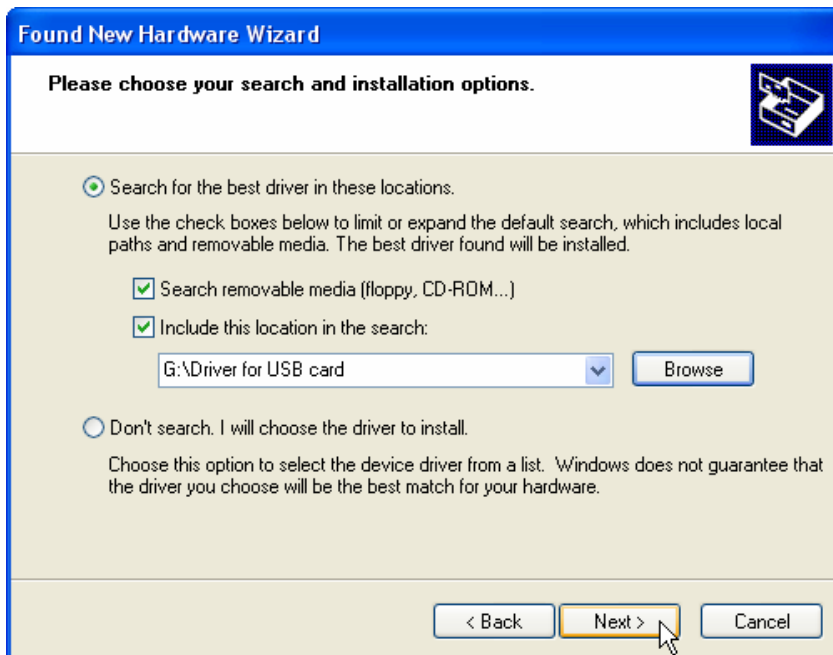


Choose 'Install from a list of specific location' ,then Next :



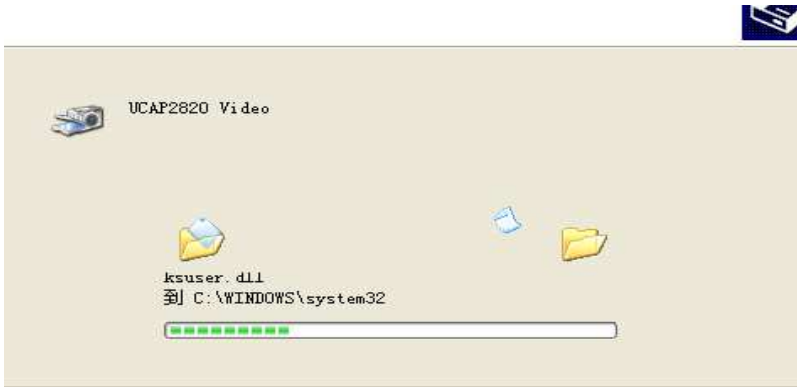
Choose 'Driver for USB card':



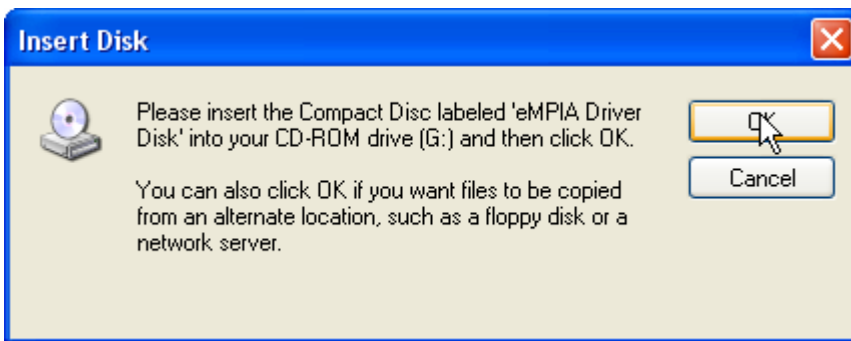


Next:

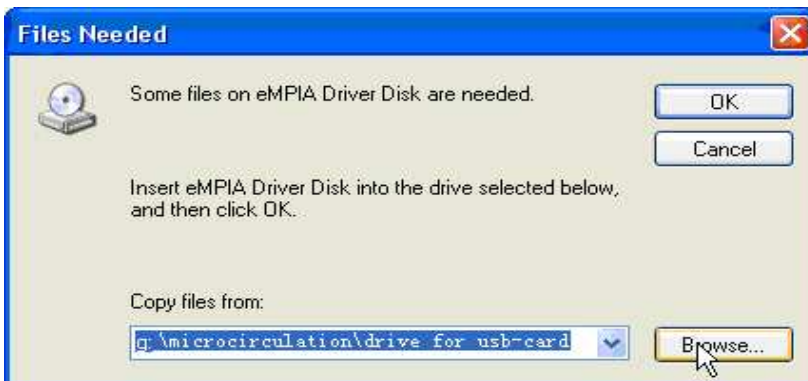
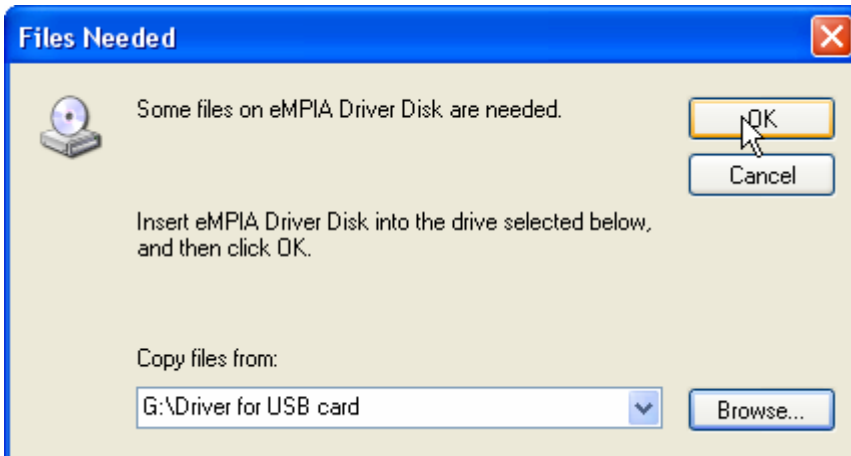
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Then:



OK.



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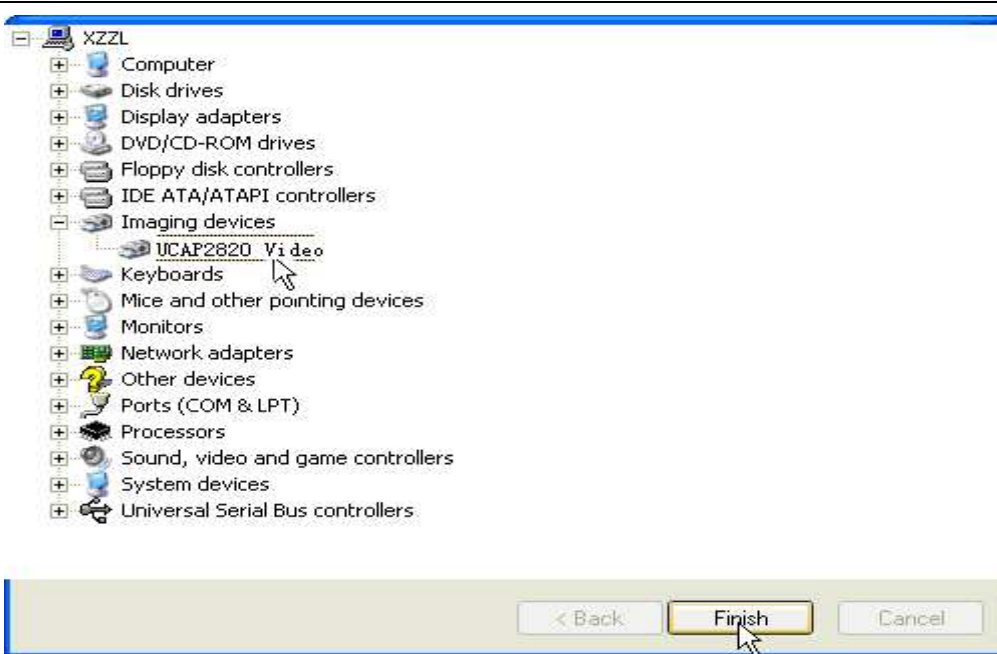
Click 'Browse',



Open this file,



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Finish, then get information 'Your new hardware is installed and ready to use', then It's OK.

And you can check it in the 'Properties', if you get the sign 'USB 2820 video', it's correct.

**II.** Install database from disk:\interbase\IB6\setup.exe. (The key is in the key.txt)

**III.** Install DivX5 from disk:\mpeg4\divx5-setup.exe.

**IV.** Install the directx9.0 from

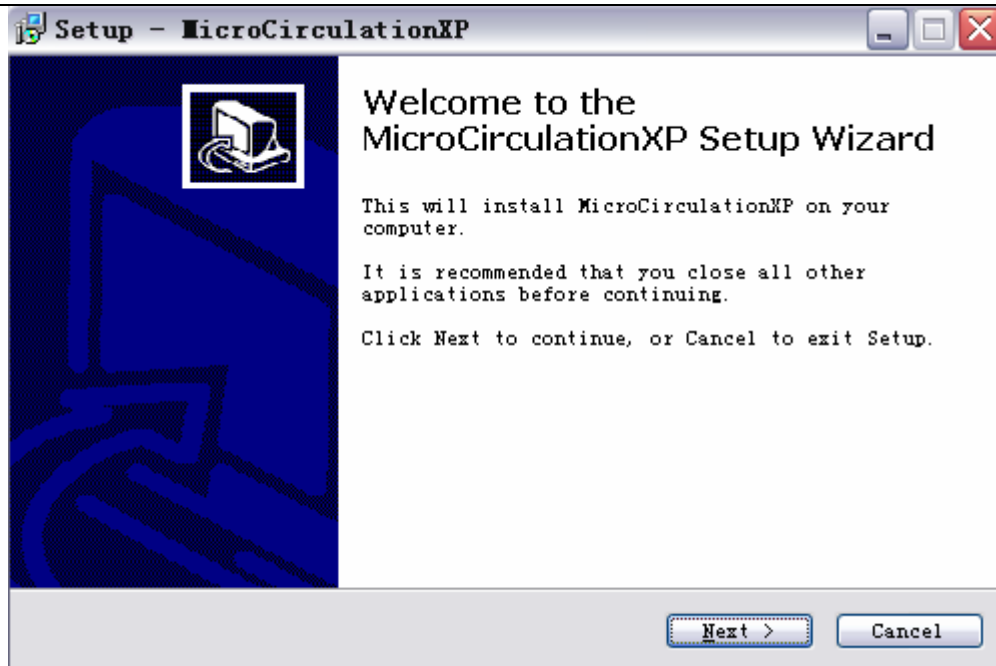
Disk:\diretx9.0\dxsetup.exe.

## **V. INSTALLATION OF THE SOFTWARE**

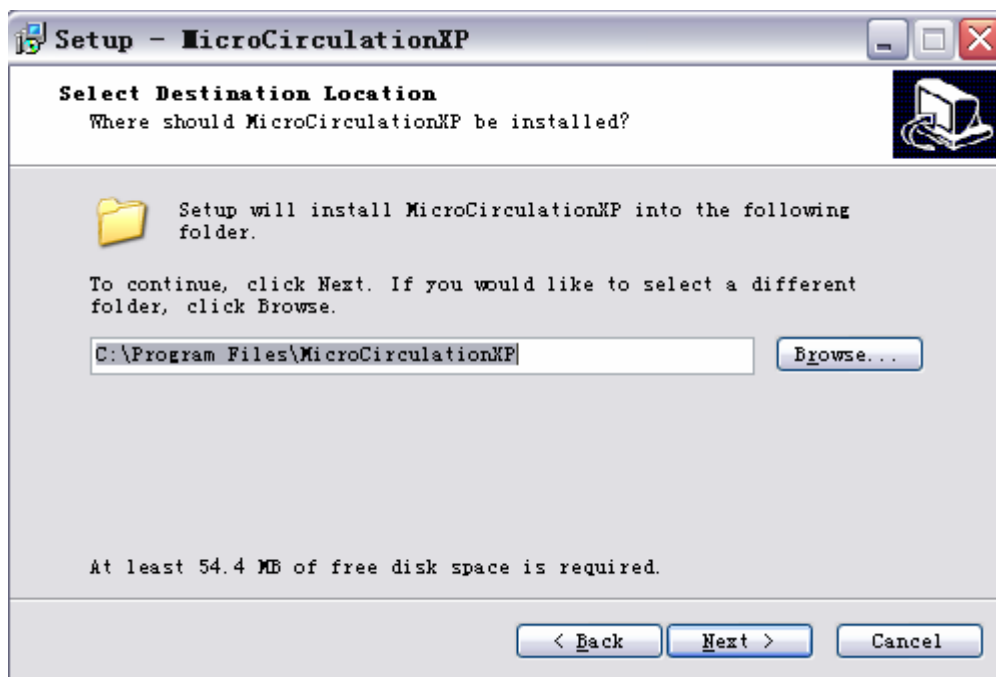
1 . Open the disc of the Microcirculation program, then setup the

icon'  'MicroCirculation  
MicroCirculation...  
XY',

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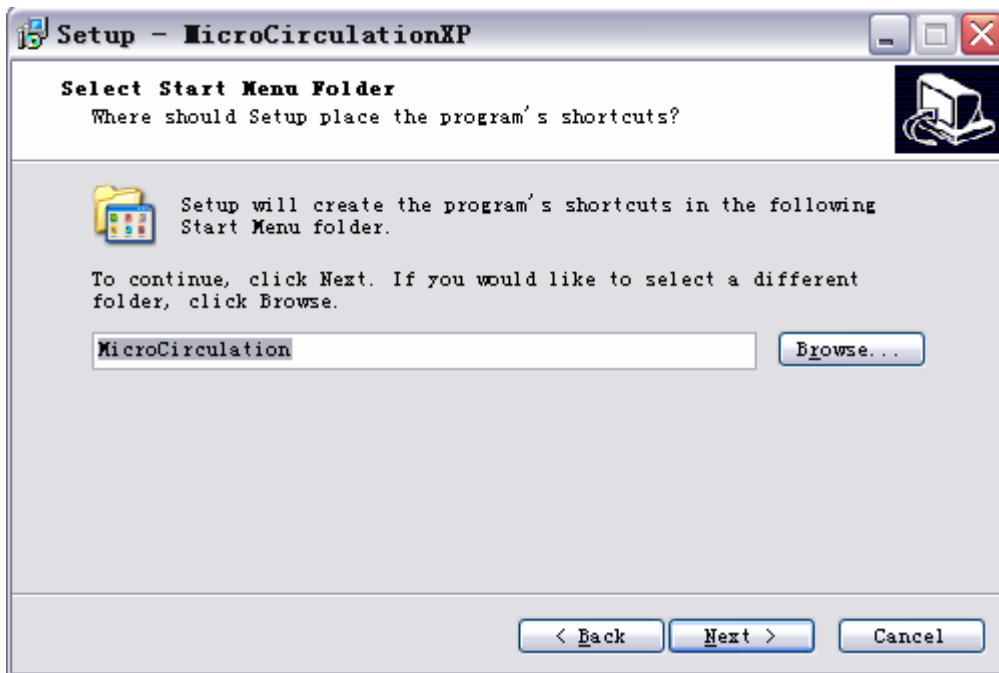


2. Click 'Next >',

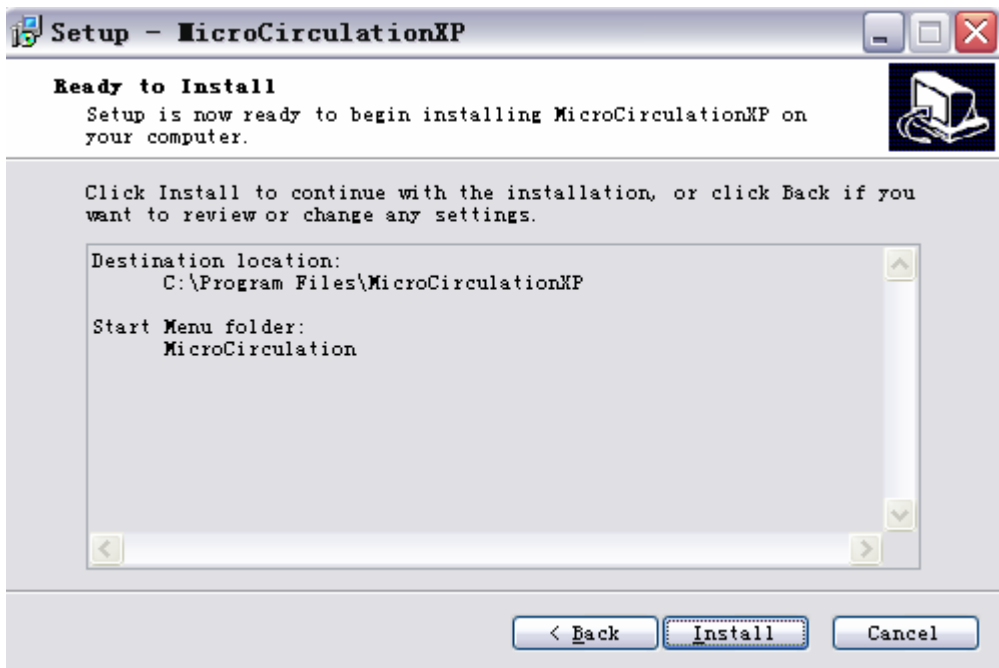


3. Please do not change the folder, Click 'Next >' straightly.

## Instruction manual

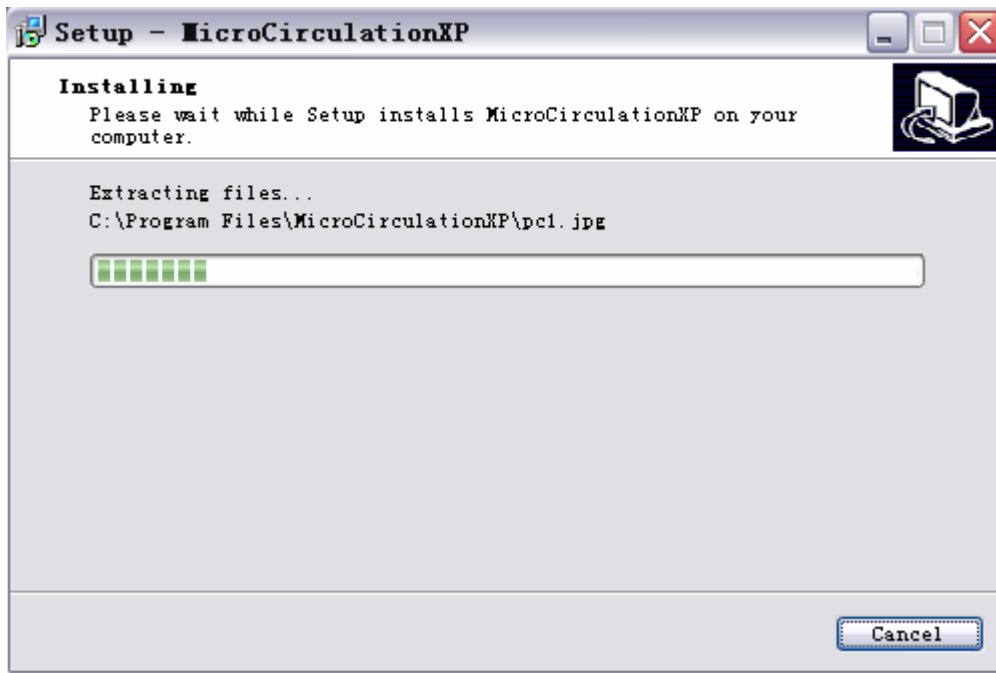


4. Do not change the name, click 'Next >',



5. Click 'Install',

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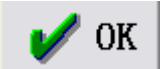


6. Click 'Finish' to restart the computer.



**VI.** When the computer restart, setup 'MicroCirculationXP' on the desktop, then it will give a device Code like this



. You must have a License Code, now, please send your Device Code to us ( [www.jiahuaele.com/jhdz@jiahuaele.com](mailto:www.jiahuaele.com/jhdz@jiahuaele.com) ) , and we will give you the License Code. When you get the License Code, fill it, then click  to login the program.

## VII. SETUP

When you login to the program like this,



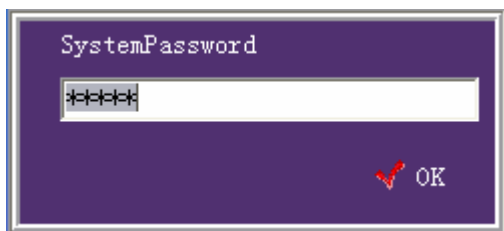


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. Click this picture,

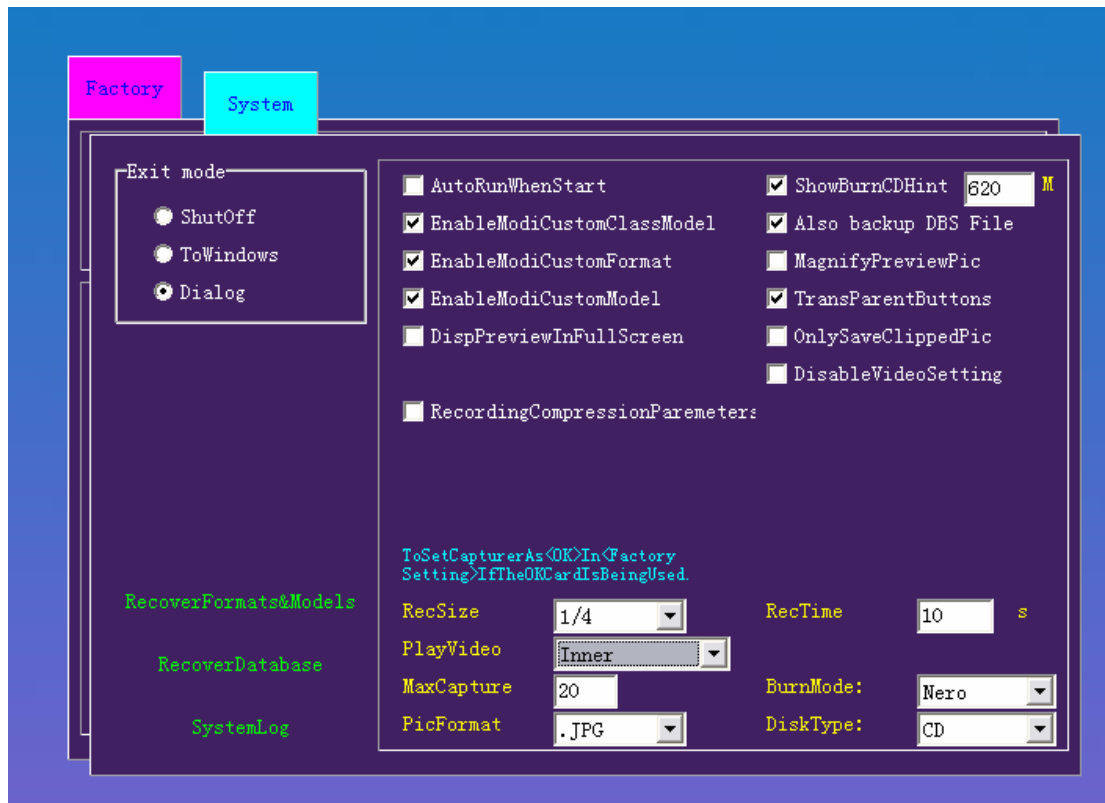


. The first time, set the program first, click ‘ Set ’,



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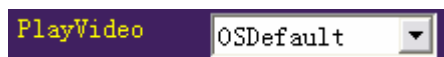
Input the password '0', then click 'OK',



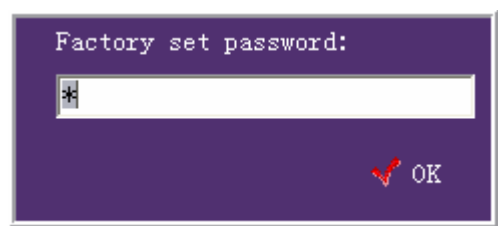
You can reset the RecTime, if you want to record for longer time.



And set the PlayVideo to 'OSDefault' if there is not player in the computer.

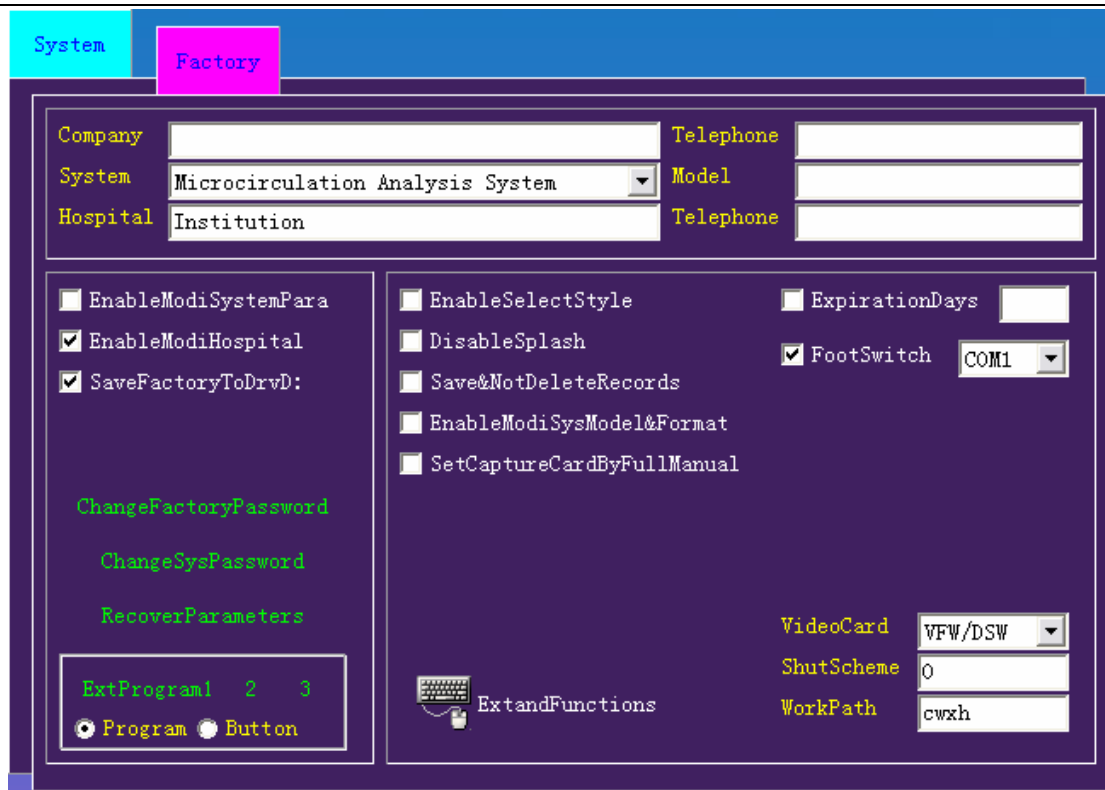


. Click 'Factory',



. Input the password '136', then click 'OK',

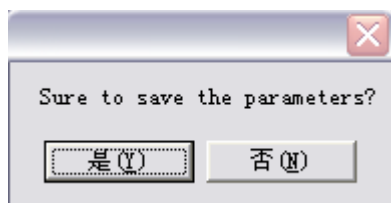
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. If there is not the 'com' port on the computer, please click



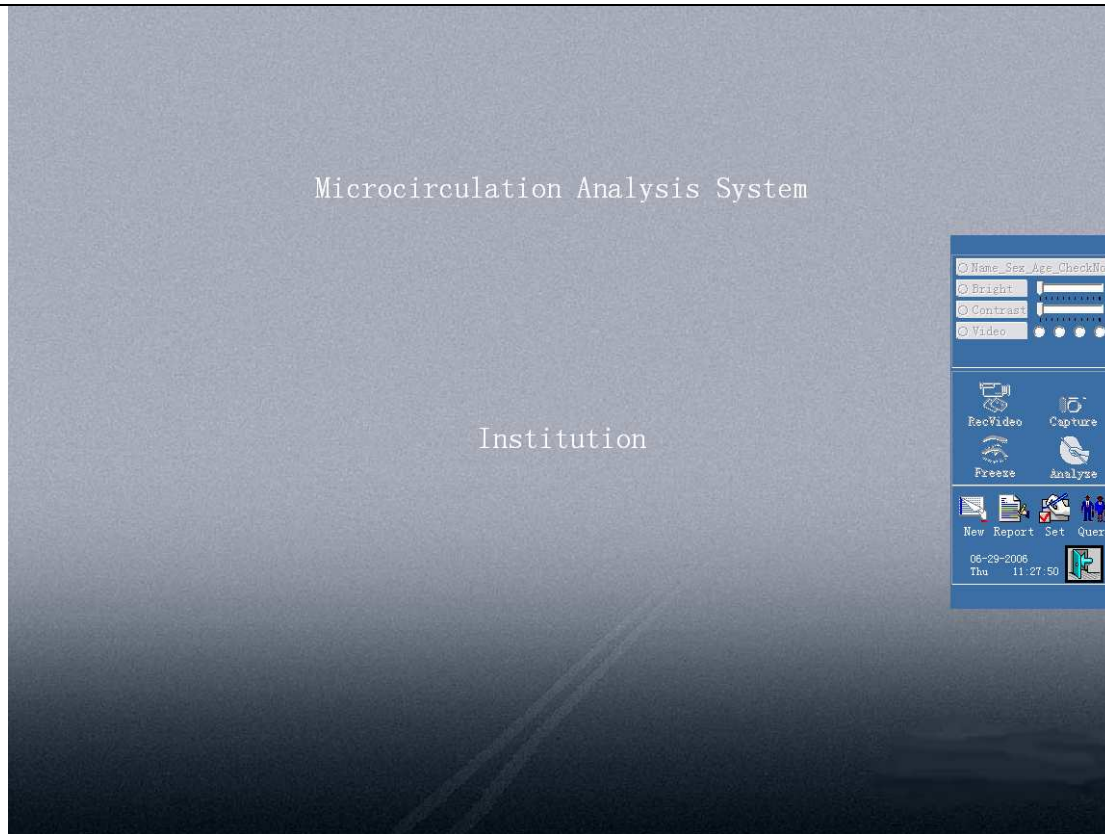
. Click  'Exit',



Click  to save and back to this picture.

## VIII.USE THE SOFTWARE

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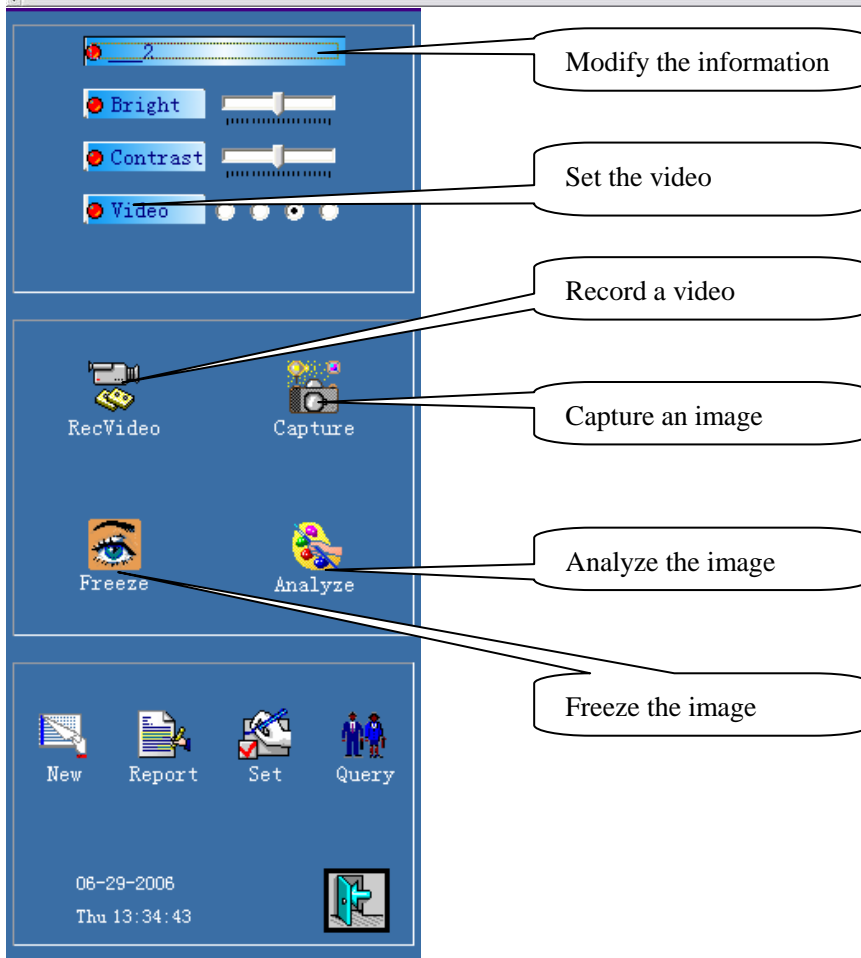
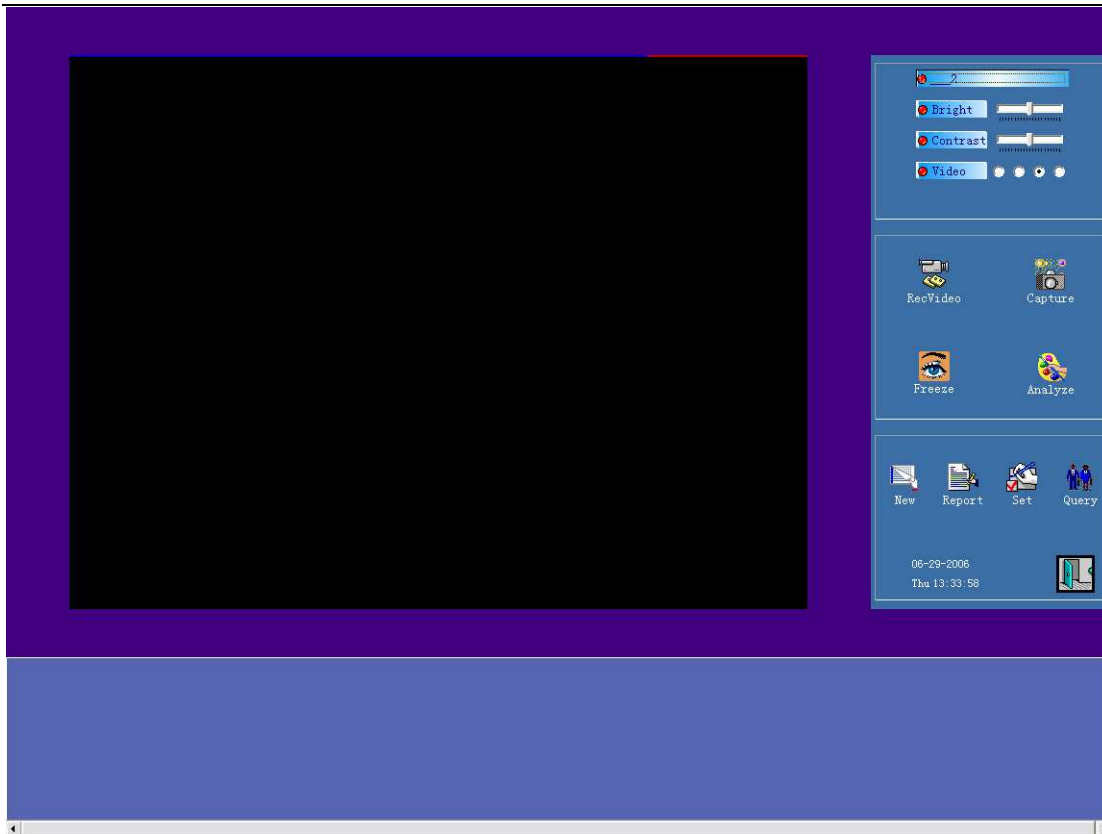
. Click 'New' to create a new case of illness,

The 'CREATE' dialog box is shown with a blue background. It contains four input fields: 'Name:' followed by a text box; 'Sex:' followed by a dropdown menu; 'Age:' followed by a text box and a dropdown menu; and 'Number:' followed by a text box containing the value '2'. At the bottom left, the word 'CREATE' is written in large, light blue letters. At the bottom right, there are three buttons: 'MainInfo' with a document icon, 'AllInfo' with a document icon, and 'OK' with a door icon.

. Input the 'name', 'sex', 'age', then click 'OK',




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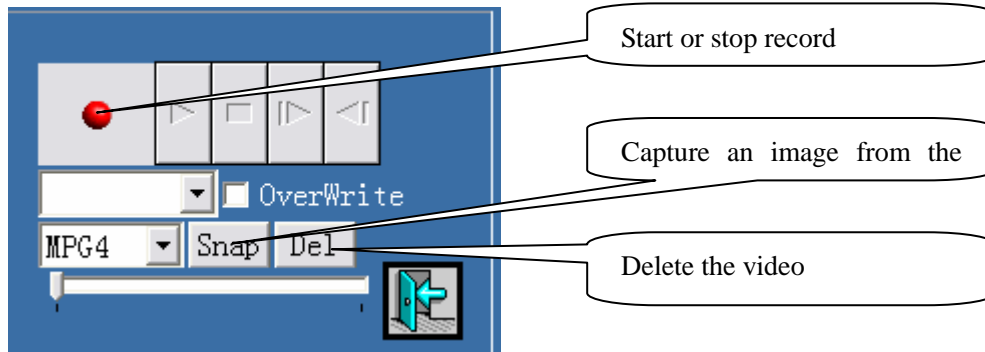



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. First, click '  ' to capture the image for analyze, and you can click

'  ' to record a video,




. Click '  ' to start record, and right-click '  ' to stop.

. Click the '  ' to choose the video, then click '  ' to play the

video, and click '  ' to stop. And click '  ' to exit record.

. When capture the pic, choose a pic and tow the picture to the dynamic

picture area, click '  ' ,

Form Parameters

Distinctness

No. Of Microvascular Loops

/Field(Vertical)

/mm

Arterial Limb Dia. 0 um

Venous Limb Dia. 0 um

Top Dia. Of Loops 0 um

Length Of Loops 0 um

Current measured: 0 um

Crossed Loops

Abnormal Loops

Integration:

Total:

Diagnosis:

. Choose or fill every Option, and click 'Flow' and 'Peri.' to do the similar step.

. If analyze the item of the FLOW, you must analyze upon the live video.

. Click 'X' to exit the analyzing.



. Click 'Report'

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### Institution

#### Microcirculation Analysis Sys Report

Check No. :  Exam Time: 2006-06-29 14:41;

Name:  Sex:  Age:  Exam Part:  Dept. :

Exam Items	Values	Normal	Integration
Distinctness	<input type="text" value="Clear"/>	[Clear]	<input type="text" value="0.0"/>
No. Of Loops	<input type="text" value="&gt;=7"/> /mm	[7-9/mm]	<input type="text" value="0.0"/>
Arterial Limb Diameter	<input type="text"/> um	[9-13um]	<input type="text"/>
Venous Limb Diameter	<input type="text"/> um	[11-17um]	<input type="text"/>
Venous/Arterial Diameter	<input type="text"/>	[1.3]	<input type="text"/>
Top Diameter Of Loops	<input type="text"/> um	[12-18um]	<input type="text"/>
Length Of Loops	<input type="text"/> um	[150-250um]	<input type="text"/>
Crossed Loops	<input type="text" value="30--60%"/>	[<30%]	<input type="text" value="0.2"/>
Abnormal Loops	<input type="text" value="10--30%"/>	[<10%]	<input type="text" value="0.2"/>
Flow Velocity	<input type="text"/> um/s	[Threadlike] [>600um/s]	<input type="text"/>
Vasomotion	<input type="text"/> times/min	[0-1time/min]	<input type="text"/>
Aggregation Of RBC	<input type="text"/>	[None]	<input type="text"/>
No. Of WBC	<input type="text"/> /15s	[1-30/15s]	<input type="text"/>
White Microthrombus	<input type="text"/> /min	[None]	<input type="text"/>
Blood Colour	<input type="text"/>	[Slight Red]	<input type="text"/>
Perivascular Diapedesis	<input type="text"/>	[None]	<input type="text"/>
Hemorrhage	<input type="text"/> Loops/Finger	[None]	<input type="text"/>
Subpapillary Venous Plexus	<input type="text"/>	[None]	<input type="text"/>
Papilla	<input type="text"/>	[Wavelike]	<input type="text"/>
Sweat Gland Duct	<input type="text"/> /Finger	[0-2/Finger]	<input type="text"/>
Integration: Form:	<input type="text" value="0.4"/>	Flow: <input type="text"/>	periphery: <input type="text"/>
Total:	<input type="text" value="0.4"/>	Diagnosis: <input type="text" value="Normal"/>	

Suggestion:



. You can click 'Capture Save Print Preview Exit' to do the correspond



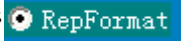
operations but 'Modi' only if your software operation is very skilled.




. Click 'Preview' to change or add the image with tow the preview images to picture frame(s) of the report.



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. You can also click ‘ RepFormat ’ to choose another report.



. When finish the work, click ‘ Exit ’ to back to the main windows.

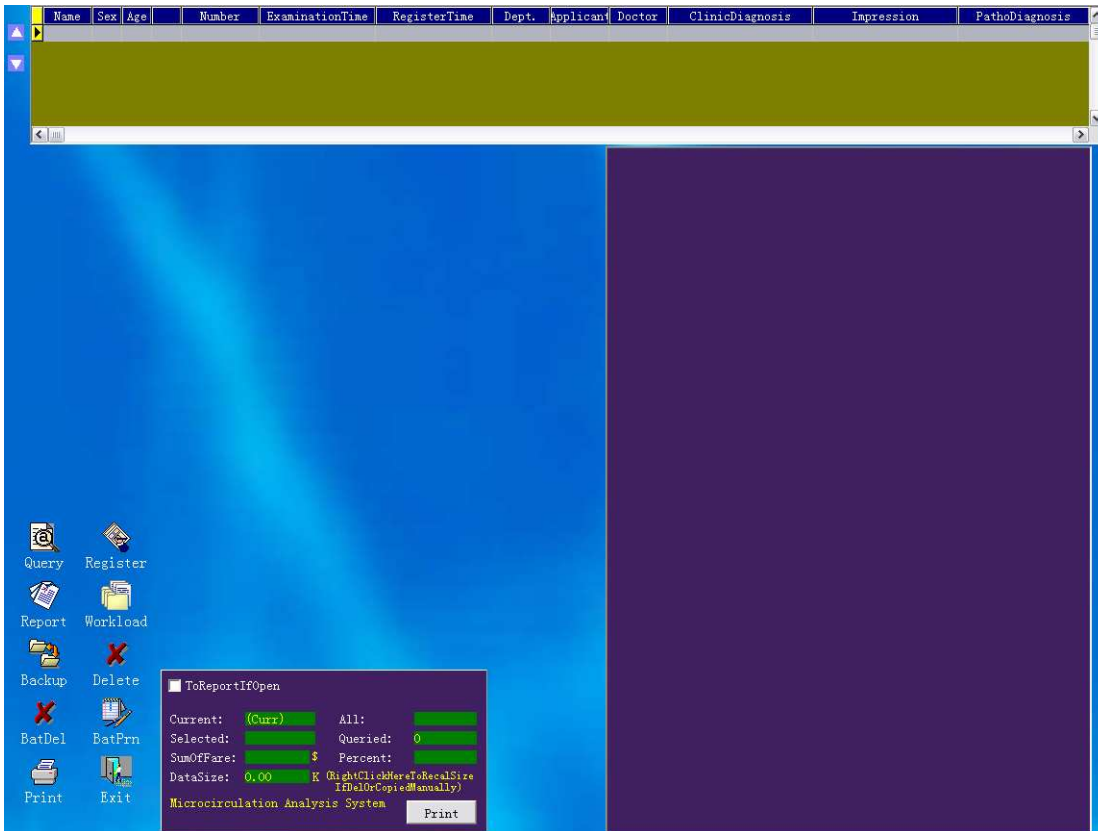


. Click ‘ New ’ to create a new case of illness.

## IX. QUERY



. Click ‘ Query ’,



. Click ‘ Query ’,

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ExamTime (DiagTime)  
 From  To   
 Today  ThisMonth  ThisYear  AllTime

RegTime (ScheduleTime)  
2006-06-29 15:37:01  
 From  To   
 Today  ThisMonth  ThisYear  AllTime

Numbers

<input type="checkbox"/> Number	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> MedRecNo.	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> ClinicNo.	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> AdmitNo.	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Dept. No.	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> BedNo.	<input type="text"/>	<input type="text"/>

Information

Sex  Male  Female

Name

Age

WorkDept.

Phone

Address

Others

Applicant  Doctor  Auditor

Department

ExamPart

ClinicDiag

Impression

PathoDiag

PostOpDiag

FollowUp

Express

Today

Register

NotExame

Myself

CalcFare

Order:  DESC

ID

Last Apply All OK

e.g.

Check with name: first, click ' Name' to ' Name', then input the name to

Name 

. Click '

Name	Sex	Age	Number	ExaminationTime	RegisterTime	Dept.	Applicant	Doctor	ClinicDiagnosis	Impression	PathoDiagnosis
tom			4	2006-06-29 14:41:20							

When open the record, you can do the same operations to modify the records.

## D. manual

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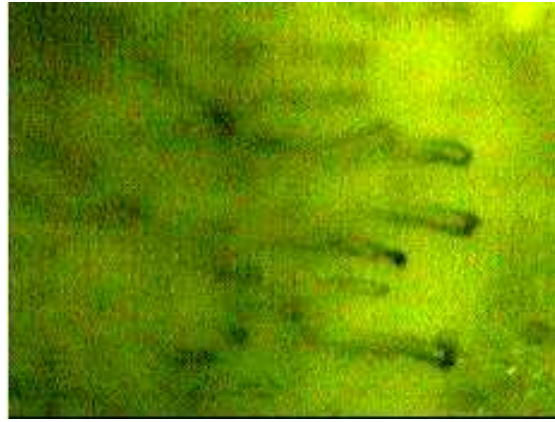
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## 1, "Form"

( 1 ) Distinctness:



( clear )



(not clear)



(Blurred)

( 2 ) No.of microvascu lar loops:



five

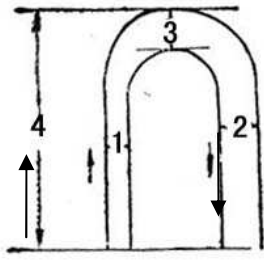


nine

No.of microvascu input number.

( 3 )

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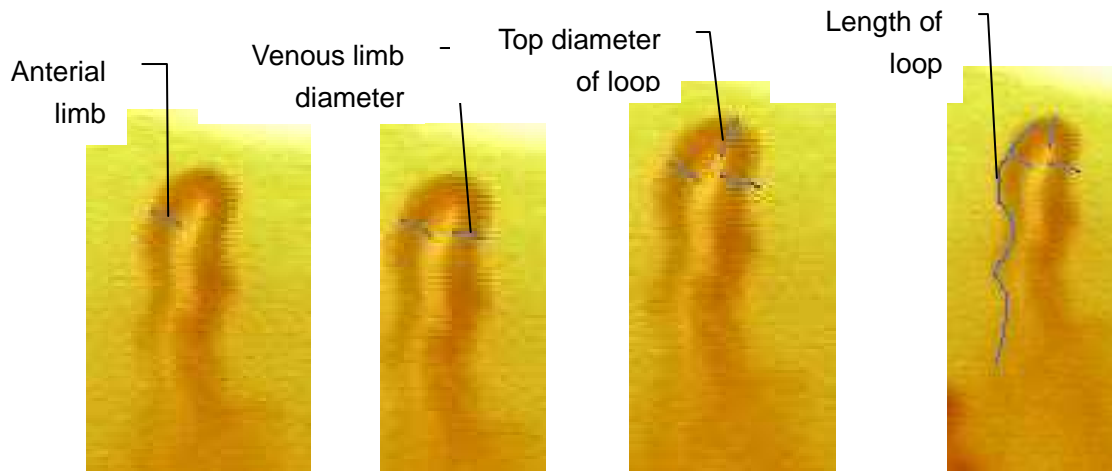


1- Arterial limb diameter

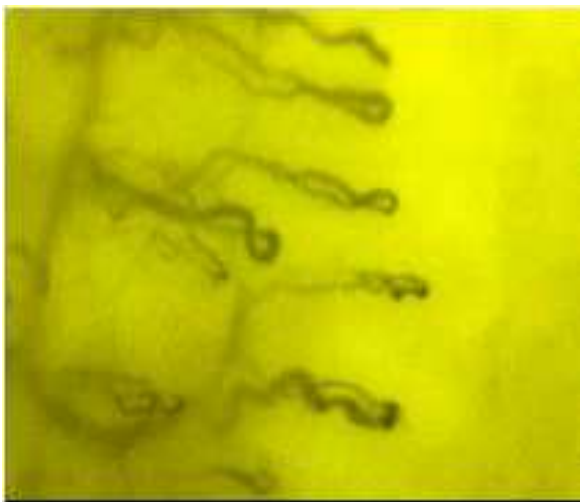
2- Venous limb diameter

3- Top diameter of loop

4- Length of loop



(4) Crossed loops:



( 5 ) Abnormal loops:



2、Flow:

Blood flow Velocity: Thread:

Gnanular:

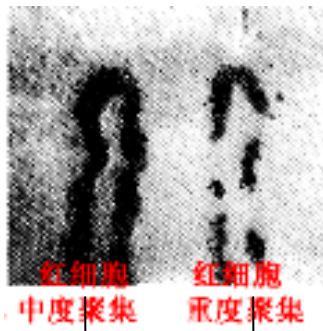
Gnanular to and fro:

Vasomotion

Aggregation of erythrocytes



(mild)

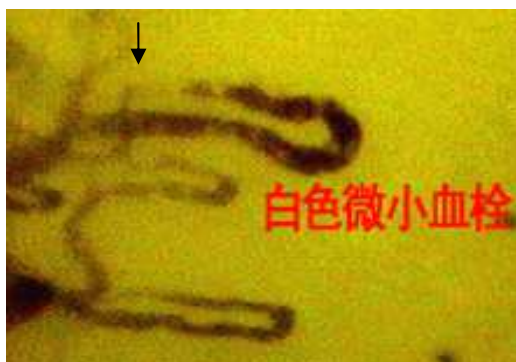


moderate

severe

(4)Leucocyte

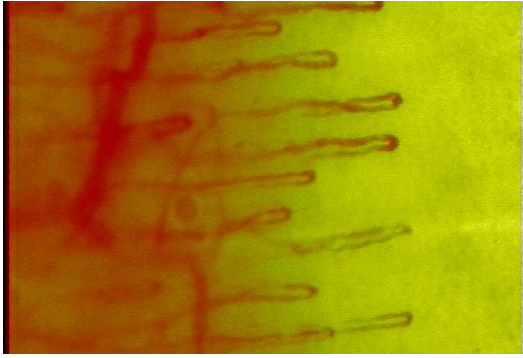
White microthrombus:



Blood color :

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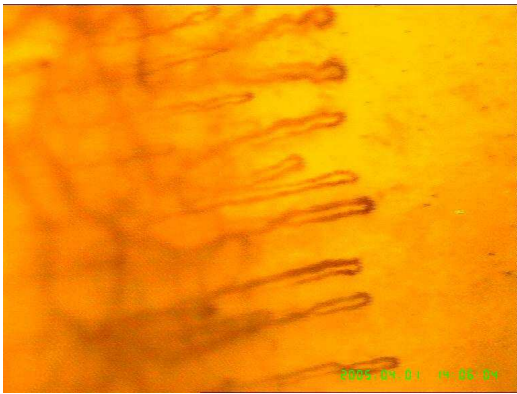
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( Slight red )



(Dark red)



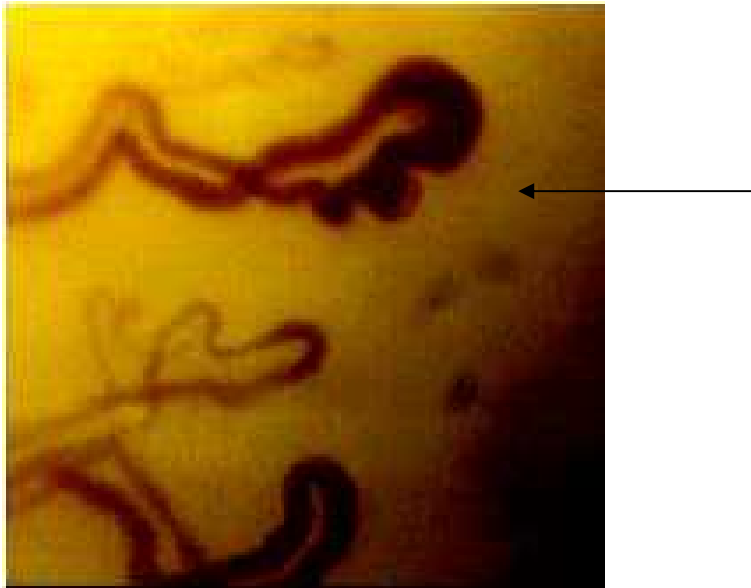
(More slight red)



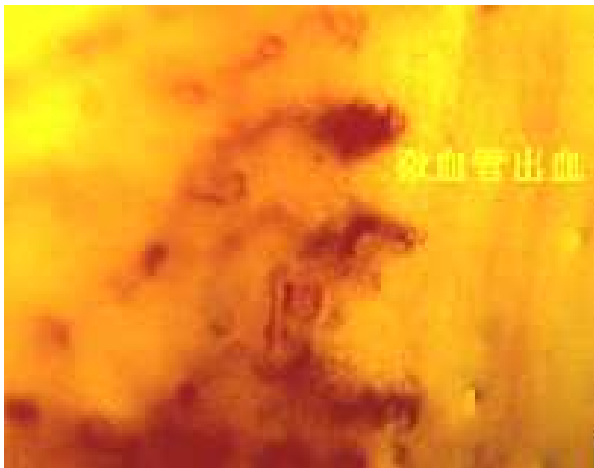
(Dark violet)

## 3、 Peri.:

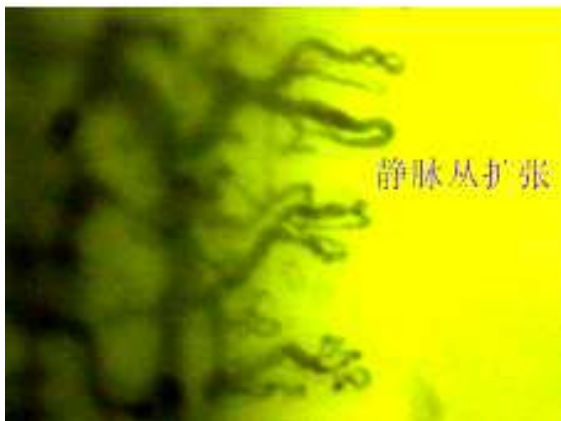
Perivasular diapedesis



(1) Microvascular loop hemorrhage:



(2) Subpapillary venous plexus:



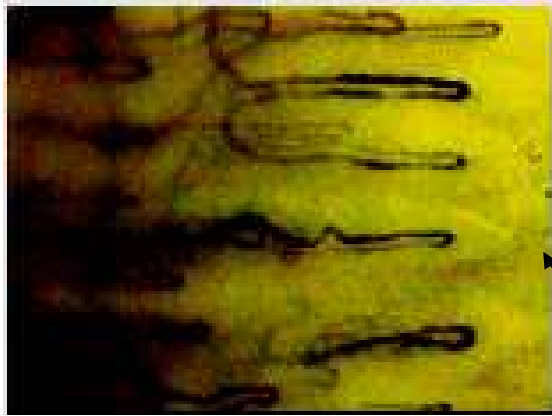
(3) lines

(4) papilla

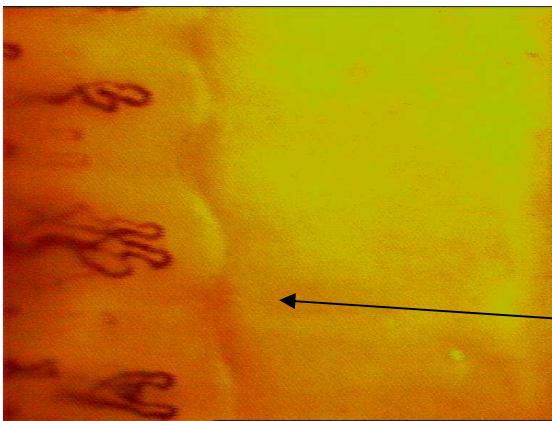


# Instruction manual

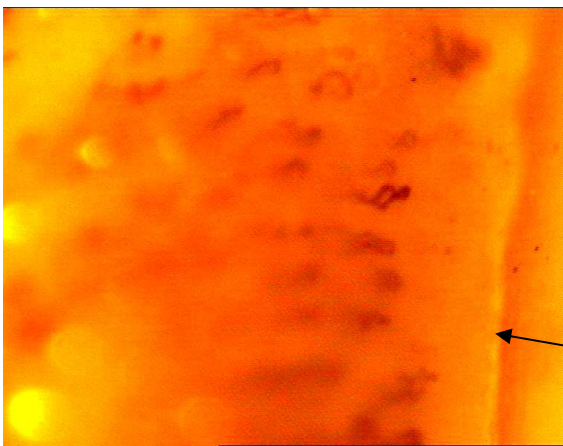
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(Wave like)

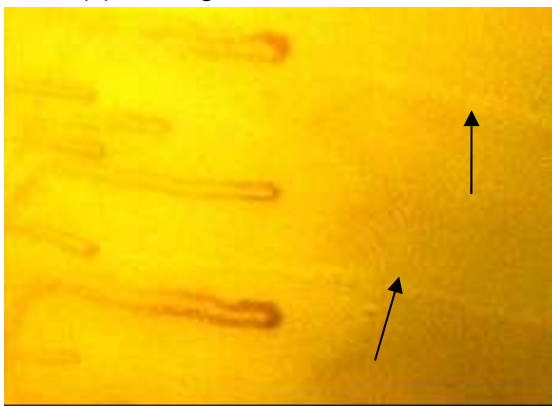


(Mid wave like)



(smooth)

(5) Sweat gland duct:



( 2 n/ 1finger )



### After sale service

(1) From the date of delivery of the equipment, we will provide one year free maintenance; we also guarantee life-long maintenance after the 12 months free warranty (but not include carriage). After 12 months user will payment accessory fee and carriage, we will maintenance for long long time.

(2)The company will not comply free warranty obligations under following circumstances:

- 1) Exceed the warranty period;
- 2) The device is damaged on purpose;
- 3) The device is damaged due to force majeure (such as abnormal voltage electricity, fire, lightning, earthquakes, ect.);
- 4) Fail to operate under the instructions;
- 5) Reassemble and repair without the manufacture's permission;

(3) The company guarantees to be responsible for the device maintenance even after the free warranty period. The clients only have to pay the materials costs and maintenance fee. If the users want to repair by themselves, the company will assist the user by providing the device's circuit diagram and parts of an apparatus.