

Keithley 4200 软件Clarius简 易操作指南

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刷卡开机之后，Keithley测试软件Clarius自动启动进入如下界面（上一位同学测试的项目，需要重新建立自己的测试项目或者调出已经建立的项目）
第一步，点击Projects

The screenshot displays the Keithley Clarius software interface. The top toolbar includes icons for Select, Configure, Analyze, Run, Stop, Save, Tools, Projects, My Settings, and Learning Center. A blue arrow points from the text '第一步，点击Projects' to the 'Projects' icon. The main window shows a project named 'res2t#1' with a table of test results and a graph titled 'Two Terminal Resistor I-V'.

	Time	AI	AV	RES
1	225.4328E-3	20.1403E-9	1.0001E+0	143.5297E+6
2	274.7598E-3	20.7697E-9	1.0001E+0	
3	324.4128E-3	19.8379E-9	1.0001E+0	
4	374.0953E-3	19.1736E-9	1.0001E+0	
5	423.7730E-3	21.5252E-9	1.0001E+0	
6	473.4222E-3	19.1187E-9	1.0001E+0	
7	523.0780E-3	20.4792E-9	1.0001E+0	
8	572.7414E-3	20.1116E-9	1.0001E+0	
9	622.4201E-3	21.0921E-9	1.0001E+0	
10	672.1017E-3	19.5793E-9	1.0001E+0	

The graph shows a linear relationship between Resistance (Ohm) and Time. The fit equation is $Fit1(Lin) y=a+bx$ with parameters $a=0.0E+00$, $b=0.0E+00$, $1/b=∞$, and $xint=NaN$. The resistance value for Run454 is $RES = 4.40667e+10$.

弹出projects界面，选择Creat New，新建项目

The screenshot shows the Clarius PC Edition software interface. The main window displays a graph of Resistance (Ohm) versus Time. A red arrow points to the 'New' button in the 'Projects' dialog box. The dialog box lists several projects:

- zhangcankun from probe station (Migrated from 4200 project.)
- HKUST-zhangcankun (Migrated from 4200 project.)
- Zhang Cankun (Custom Project)
- four-pt-probe (Four Point Probe Resistivity Project)

The 'four-pt-probe' project is highlighted. The dialog also shows the 'Selected Path' and 'Open Project' and 'Exit' buttons.

Messages: 2023/12/20 - 11:24:09: Clarius Hardware Server started.

或者在输入框中查找已经建立的项目，双击打开。

The screenshot displays the Clarius PC Edition software interface. The main window shows a list of projects in the 'Projects' pane. A red dashed box highlights the search bar and the 'Search' button in the Projects window. A red arrow points from the search bar area towards the 'Run' button in the main toolbar. The 'Projects' window lists several projects, including 'zhangcankun from probe station', 'HKUST-zhangcankun', 'Zhang Cankun', and 'four-pt-probe'. The 'four-pt-probe' project is selected, and its details are shown below the list. The main window also displays a graph of Resistance (Ohm) vs. Time, with a data table showing parameters like a=0.0E+00, b=0.0E+00, 1/b=∞, and xint=NaN. The bottom status bar shows the date and time: 2023/12/20 15:15.

Project Name	Execution Time
zhangcankun from probe station	Exec: 440 s
zhangcankun from probe station	Exec: 32 s
HKUST-zhangcankun	Exec: 6 s
HKUST-zhangcankun	Exec: 29 s
Zhang Cankun	Exec: 31 s
Zhang Cankun	Exec: 47 s
four-pt-probe	Exec: 49 s
four-pt-probe	Exec: 51 s
four-pt-probe	Exec: 35 s

以下以新建为参考进行示例。选择yes，替换当前的测试项目

The screenshot displays the Clarius PC Edition software interface. A 'New Project' dialog box is open, asking 'Do you want to replace existing project?'. The 'Yes' button is highlighted with a red dashed box and a red arrow pointing to it. The background shows a list of projects, including 'zhangcankun from probe station', 'HKUST-zhangcankun', 'Zhang Cankun', and 'four-pt-probe'. The interface includes a top toolbar with icons for Select, Configure, Analyze, Run, Stop, Save, Tools, Projects, My Settings, and Learning Center. A bottom status bar shows the date '2023/12/20' and a 'Date Search' button.

进入新建项目，进行重命名

The screenshot displays the Clarius PC Edition software interface. At the top, there is a toolbar with icons for 'Select', 'Configure', and 'Analyze'. A red arrow points from the Chinese text above to the 'Configure' icon. Below the toolbar, a 'New Project' menu is open, showing options like 'Copy', 'Cut', 'Paste', 'Rename', and 'Delete'. The 'Rename' option is highlighted with a red dashed box. The main window shows a 'Test Library (141)' with a search bar and a list of test items, including 'Custom Test', 'Capacitor High-Voltage Bias Capacitance Measurements (200vbias)', 'Capacitor High-Voltage C-V Sweep (200vsweep)', '2D FET Drain Current vs Gate Voltage (2dfet-id-vg)', and 'Schottky Diode 400V C-V Sweep (400vsweep)'. On the right side, there are filter sections for 'Technology', 'Device Type', 'Measurements', and 'Author'. The bottom status bar shows a message: 'Messages 2023/12/20 - 11:24:09: Clarius Hardware Server started.'

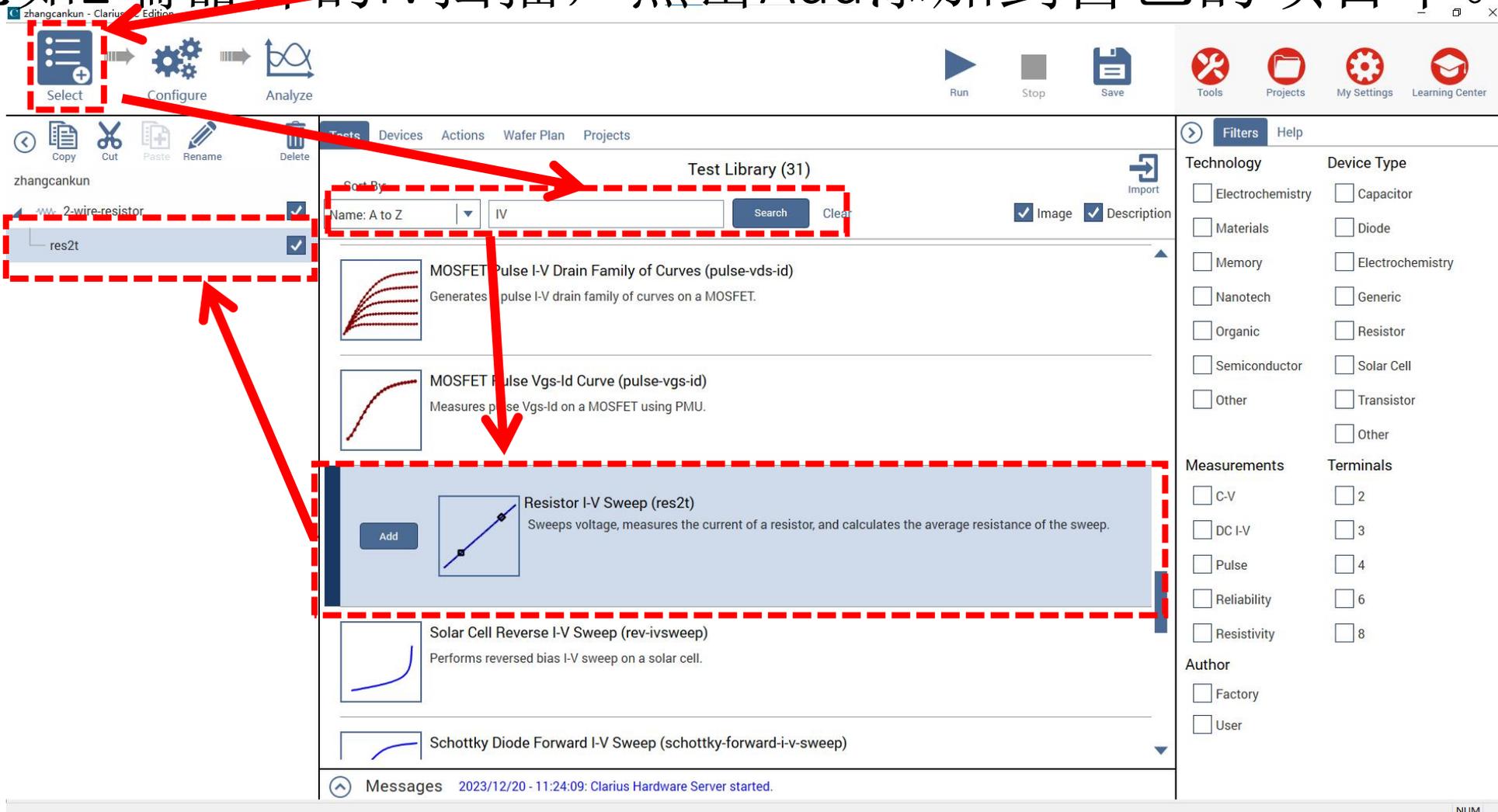
输入框中输入自己的名字或者其他方便识别的名称符号，回车确定

The screenshot displays the Clarius PC Edition software interface. The main window is titled "New Project - Clarius PC Edition". The top toolbar includes icons for Select, Configure, Analyze, Run, Stop, Save, Tools, Projects, My Settings, and Learning Center. Below the toolbar, there are navigation tabs for Tests, Devices, Actions, Wafer Plan, and Projects. The central area shows the "Test Library (141)" search results. A search bar at the top of the library contains the text "zhangcankun", which is highlighted by a red dashed box and a red arrow pointing from the text above. The search results list several test types, including "Custom Test", "Capacitor High-Voltage Bias Capacitance Measurements (200vbias)", "Capacitor High-Voltage C-V Sweep (200vsweep)", "2D FET Drain Current vs Gate Voltage (2dfet-id-vg)", and "Schottky Diode 400V C-V Sweep (400vsweep)". On the right side, there are filter sections for Technology, Device Type, Measurements, and Terminals, each with a list of checkboxes.

按照测试流程箭头所示进行后续操作

The screenshot displays the Clarius PC Edition software interface. At the top, a red arrow points to a workflow diagram consisting of three icons: a list icon labeled 'Select', a gear icon labeled 'Configure', and a waveform icon labeled 'Analyze'. Below this, the main interface is divided into several sections. On the left, there is a toolbar with icons for Copy, Cut, Paste, Rename, and Delete, and a file browser showing 'zhangcankun'. The central area is titled 'Test Library (141)' and includes a 'Sort By' dropdown set to 'Name: A to Z' and a search box. Below this, several test entries are listed, each with a small graph icon and a description: 'Custom Test', 'Capacitor High-Voltage Bias Capacitance Measurements (200vbias)', 'Capacitor High-Voltage C-V Sweep (200vsweep)', '2D FET Drain Current vs Gate Voltage (2dfet-id-vg)', and 'Schottky Diode 400V C-V Sweep (400vsweep)'. On the right side, there are filter panels for 'Technology', 'Device Type', 'Measurements', and 'Author', each with a list of checkboxes. At the bottom, a 'Messages' section shows a timestamp and the text '2023/12/20 - 11:24:09: Clarius Hardware Server started.'.

首先选择测试方法，在输入框中输入想要的测试方法，比如IV扫描测试，则软件会把所有与IV测试有关的方法罗列出来，根据相应的示意图或者文字摘要选择合适的方法，比如2端器件的IV扫描，点击Add添加到自己的项目中。



接着对测试进行设置，点击configure，进入设置界面，根据测试器件性质进行设置。

The screenshot displays the Clarius PC Edition software interface. A red arrow points to the 'Configure' button in the top toolbar. The main workspace shows a circuit diagram of a resistor connected to two source measurement units (SMU1 and SMU2). The configuration panels for SMU1 and SMU2 are visible, along with the 'Test Settings' panel on the right.

SMU1 Configuration:

- Source: A SMU1
- Operation Mode: Voltage Linear Sweep
- Start: -1 V
- Stop: 1 V
- Step: 0.04 V
- Compliance: 0.1 A
- Measure Current:
- Report Voltage:

SMU2 Configuration:

- Source: B SMU2
- Operation Mode: Voltage Bias
- Bias: 0 V
- Compliance: 0.1 A
- Measure Current:
- Report Voltage:

Test Settings:

- Speed: Normal
- Report Timestamps:
- Test Mode: Sweeping
- Sweep Delay: 0 s
- Hold Time: 0 s

Buttons: Formulator, Output Values, Exit Condition

Messages: 2023/12/20 - 11:24:09: Clarius Hardware Server started.

设置完，点击Analyze进入分析页面，点击Run即可开始测试。

The screenshot shows the Clarius PC Edition software interface. The top toolbar contains buttons for Select, Configure, Analyze, Run, Stop, and Save. The Analyze and Run buttons are highlighted with red dashed boxes and red arrows. The main window displays a table of test data for a two-terminal resistor, with a linear fit line overlaid on the graph.

Run1 Formulas List: RES= AVG(AV/AI)

	AI	AV	RES
1	-989.8149E-12	-1.0000E+0	992.2319E+6
2	-950.7267E-12	-960.0000E-3	
3	-910.5480E-12	-920.0000E-3	
4	-871.3330E-12	-880.0000E-3	
5	-831.7712E-12	-840.0000E-3	
6	-792.2429E-12	-800.0000E-3	
7	-751.8904E-12	-760.0000E-3	
8	-713.0576E-12	-720.0000E-3	
9	-673.3679E-12	-680.0000E-3	
10	-633.3102E-12	-640.0000E-3	

Two Terminal Resistor I-V

Resistor Current (A)

Resistor Voltage (V)

Fit1(Lin) y=a+bx
a=-7.761E-13
b=9.894E-10
1/b=1.011E+09
xint=7.844E-04

Run History

Date	Name	Checked	Stars
2001/4/23 18:05:02.000	Run1	<input checked="" type="checkbox"/>	☆☆☆

Exec: 0 s

2023/12/20 15 Date Search

Messages 2023/12/20 - 11:24:09: Clarius Hardware Server started.

请大家尽量使用自己的项目进行测试，方便查找历史记录等等；

如果担心他人不小心更改你的项目文件，可以在测试完成之后，调出我的项目文件。下一位同学测试使用时打开的界面就是我的项目了。

如果担心泄露测试数据，也可以选择把自己的项目文件拷走。可以在自己的电脑上安装Clarius软件（Keithley官网可以下载）查看。