

ELECTRICAL APPLICATION PRODUCTS BROCHURE



GoGo Instruments
Innovating Constantly, Safeguarding Research.

COMPANY PROFILE

We specialize in thermal control technology (heating and cooling), focusing on the development and integration of in-situ testing systems that incorporate mechanical, electrical, and optical measurement capabilities. We are also a provider of professional technical services.

As a supplier of scientific equipment and technical support, we are dedicated to serving the R&D and industrial needs of various fields—including advanced materials, semiconductors, new energy, biopharmaceuticals, and geology—by delivering cutting-edge, high-quality, and cost-effective integrated testing solutions.

Guided by our brand philosophy of "Innovating Constantly, Safeguarding Research." we are committed to empowering scientific exploration and accelerating industrial innovation.

2017

2017: GoGo Instruments Technology (Shanghai) Co., Ltd. was established

2021: Recognized as a High-Tech Enterprise

2023: Shanghai Innovation Fund Program Project

2024: Partner Unit of Shanghai Demonstration Inspection and Verification Center

2020

2020: Jinwen Measurement & Control Technology (Suzhou) Co., Ltd. was established

2020: Recognized as a Leading Talent in High-tech Zone

2021: Recognized as a Leading Talent in Suzhou

2022: Recognized as a Private Technology Enterprise in Jiangsu Province

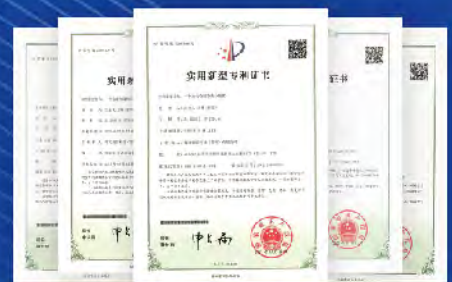
2023: Recognized as a "Dual Innovation Plan" Talent in Jiangsu Province

2023: Recognized as a High-Tech Enterprise

OVER 100 PATENTS APPLIED



CERTIFICATION CERTIFICATES



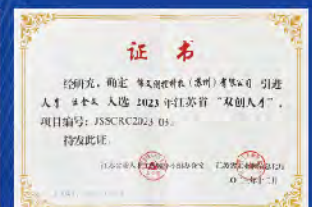
PATENT CERTIFICATES



HIGH-TECH ENTERPRISE CERTIFICATE
(GOGO INSTRUMENTS)



HIGH-TECH ENTERPRISE CERTIFICATE
(JINWEN MEASUREMENT & CONTROL)



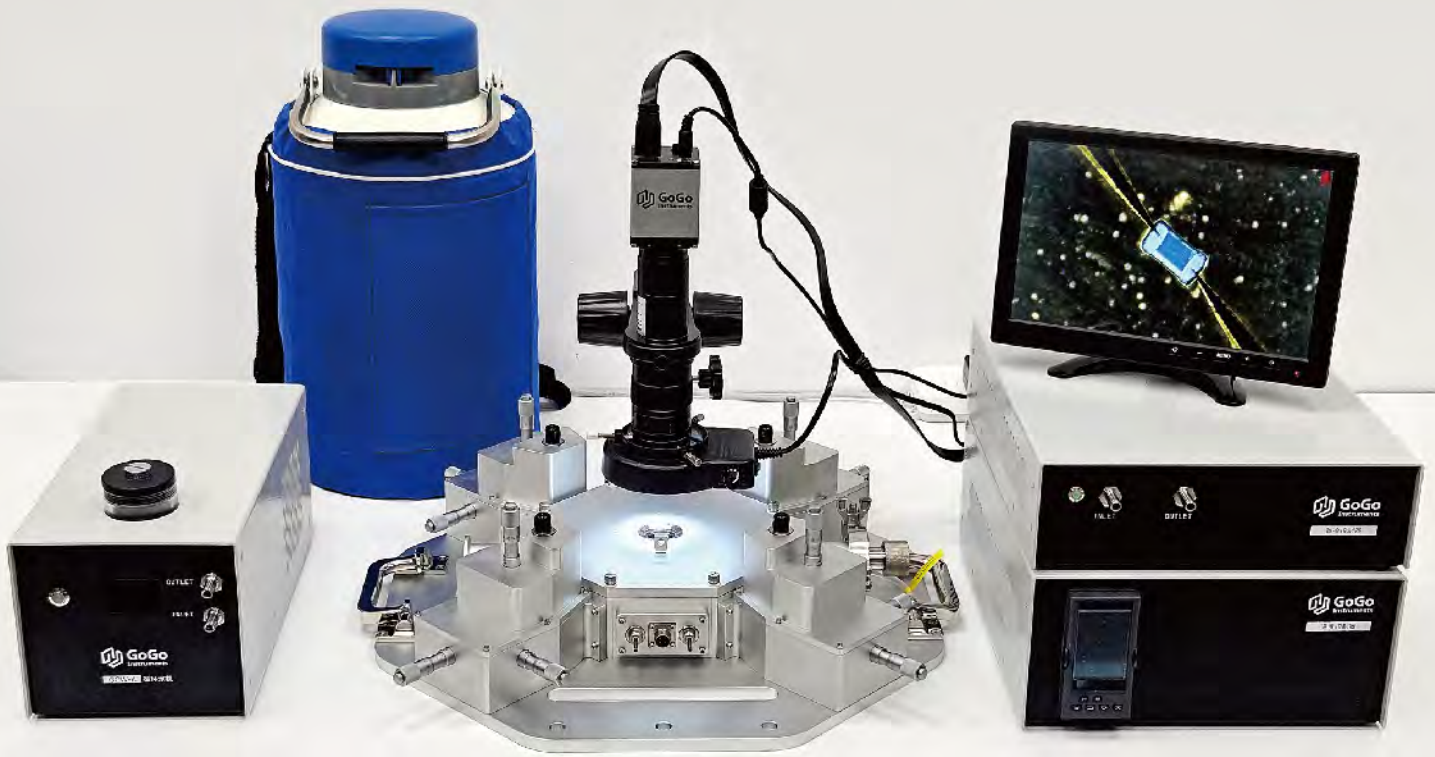
"DUAL INNOVATION TALENT" CERTIFICATE
OF JIANGSU PROVINCE

COOPERATION CLIENTS

We have a cross-disciplinary professional technical team that deeply integrates software and hardware development experience and capabilities. Our independently developed instrumentation and equipment have been successfully applied in top domestic and international scientific research institutions and leading industry enterprises, including Tsinghua University, Peking University, Beihang University, Beijing Institute of Technology, Fudan University, Tongji University, University of Science and Technology of China, Institute of Geochemistry, Chinese Academy of Sciences, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Institute of Metal Research, Chinese Academy of Sciences, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China Institute of Atomic Energy, China Academy of Engineering Physics, National University of Defense Technology, Zhejiang University, Harbin Institute of Technology, Nanjing University of Science and Technology, Xi'an Jiaotong University, South China University of Technology, Shanghai Jiao Tong University, Songshan Lake Materials Laboratory, Sichuan University, Huazhong University of Science and Technology, National University of Singapore, Nanyang Technological University, Hong Kong University of Science and Technology, City University of Hong Kong, University of Macau, Singapore A*STAR, Germany HZDR, University of Washington (USA), Russia ANDREY, etc. These applications cover a wide range of testing fields, and have won deep trust and extensive recognition.



SOME OF OUR CLIENTS (LISTED IN NO PARTICULAR ORDER)



Adapting instruments

The electro-optical application thermo-electric stage of GoGo Instruments is compatible with common electrical meters on the market (such as brands like KEITHLEY, HIOKI, KEYSIGHT, POLYK, Tonghui, Siglent, etc.) to test samples for voltage, current, resistance, capacitance, inductance, etc. We have extensive testing experience, providing targeted solutions for different meters and testing methods, as well as professional in-situ electrical testing software.

ELECTRICAL APPLICATION HEATING AND COOLING STAGE

Probe-based Heating and Cooling Stages are engineered for temperature-dependent electrical characterization of materials, enabling precise analysis of electrical property evolution with temperature. Constructed on an optical-stage platform, the system integrates an electrical module featuring probes, positioning mechanisms, and interfaces. Probes can be accurately positioned to establish reliable electrical contact with specific regions on the sample. Signals are transmitted via probes and cabling to external instruments—such as source meters and digital multimeters—for data acquisition and analysis under varying temperatures.

Based on probe holder design, these systems are available in three types: manually internal-adjusted, externally-adjusted, and motorized electrically-adjusted probe stations.

The series delivers precise temperature control from 4K to 1700°C, incorporating advanced thermal management solutions: liquid helium/nitrogen cooling, thermoelectric cooling, resistive heating, infrared heating, and laser heating—to support complex thermal experiments.

Multi-language SDKs (e.g., LabVIEW, C#) are provided to facilitate customized integration and automation.

CONTENTS

Electrical Heating and Cooling Stage



ECH600S
-190°C~600°C



ECH400SV
-190°C~400°C



EH200-Mini
RT~200°C



EH600S
RT~600°C

Externally Adjustable Probe Stage

Motorized Probe Stage

In-situ Testing System

Configuration Details

Technical Description

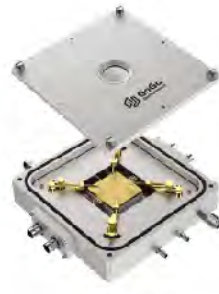
Application Cases



ECH600
-190°C~600°C



ECH400V
-190°C~400°C



EPE120
-25°C~120°C



EPE120V
-25°C~120°C



EH1000
RT~1000°C



EH1200
RT~1200°C



EH1000S-HE
RT~1000°C



EH1500V-R
RT~1000°C



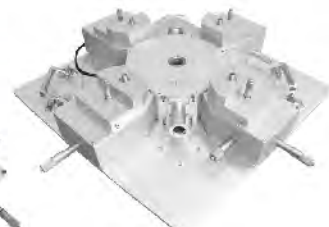
ECH400V-EM
-190°C~400°C



ECH400V-EB
-190°C~400°C



EPE120V-EM
-25°C~120°C



EH1000V-EM
RT~1000°C



ECH400V-EC
-190°C~400°C

All electrical products can be customized with airtight chambers / vacuum chambers; only partial display is provided here.

► Electrical Heating and Cooling Stage

● Product Features

ECH600S: Temperature Range -190°C~600°C. Temperature Stability $\pm 0.1^\circ\text{C}$. Multi-mode precision temperature control: setpoint, ramp, and segment programming. Sample stage: reflection/transmission modes. Screw-top cover for easy access. The magnetically-attached probes can be flexibly positioned and are compatible with a wide range of optical instruments and electrical measurement devices.



ECH600S



ECH400SV

● Specifications

TYPE	ECH600S	ECH400SV
Cooling/Heating Method	Liquid nitrogen cooling, Resistance heating	
Temperature Range	-190°C~600°C	-190°C~400°C
Temperature Stability	$\pm 0.1^\circ\text{C}$	
Heating/Cooling Rate	Maximum Heating Rate: 150°C/min, Maximum Cooling Rate: 40°C/min	
Sample Holder	Silver ; 23mm*23mm	
Optical Path	Reflection / Transmission ($\phi 2\text{mm}$ Optical Access Hole)	
Top Window Size	$\phi 25\text{mm} \times 1\text{mm}$	
Bottom Window Size	$\phi 10\text{mm} \times 1\text{mm}$ (Transmitted Light Option)	
Window Material	JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.	
Window Defrosting	Gas Purge Attachment, Air blowing defrosting at low temperatures	
Distance from Window Upper Surface to Sample Holder Upper Surface	7mm	
Chamber Height	6mm	
Probe	Magnetic probe station *4 + tungsten steel gold-plated probe *4	
Probe Port	BNC*4	
Sample Stage Potential	Grounded / Electrically Floating	
Chamber	Atmosphere	Vacuum
Dimensions	156.8mm*143mm*27mm	156.8mm*143mm*27mm (Without Bellows)
Optional	0.5kg	0.6kg

● Configuration List

Software	Stage	Temperature Controller	Cooling Controller	Liquid Nitrogen Tank	Circulating Water Chiller	Others
GoGo TCS	Probing Heating & Cooling Stage	GTC-A	GRC-A	YDS-2-35	GCW-A	Cables, tubing, accessories, etc.

Optional accessories: Adapter plates / Custom liquid nitrogen tanks / Custom circulating water chillers / Vacuum systems / Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

Product Features

ECH600: Temperature Range -190°C~600°C. Temperature Stability $\pm 0.1^\circ\text{C}$. Multi-mode precision temperature control: setpoint, ramp, and segment programming. Sample stage: reflection/transmission modes. Fixed probes are adopted, compatible with various optical instruments and electrical measurement devices.



ECH600



ECH400V

Specifications

TYPE	ECH600	ECH400V
Cooling/Heating Method	Liquid nitrogen cooling, Resistance heating	
Temperature Range	-190°C~600°C	-190°C~400°C
Temperature Stability	$\pm 0.1^\circ\text{C}$	
Heating/Cooling Rate	Maximum Heating Rate: 150°C/min, Maximum Cooling Rate: 40°C/min	
Sample Holder	Silver ; 23mm*23mm	
Optical Path	Reflection / Transmission ($\phi 2\text{mm}$ Optical Access Hole)	
Top Window Size	$\phi 25\text{mm} * 1\text{mm}$	
Bottom Window Size	$\phi 10\text{mm} * 1\text{mm}$ (Transmitted Light Option)	
Window Material	JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.	
Window Defrosting	Gas Purge Attachment, Air blowing defrosting at low temperatures	
Distance from Window Upper Surface to Sample Holder Upper Surface	7.5mm	
Chamber Height	6.5mm	
Probe	Magnetic probe station *4 + tungsten steel gold-plated probe *4	
Probe Port	BNC*4	
Sample Stage Potential	Grounded / Electrically Floating	
Chamber	Atmosphere	Vacuum
Dimensions	160mm*150mm*27mm	160mm*150mm*27mm (Without Bellows)
Optional	1.5kg	1.6kg

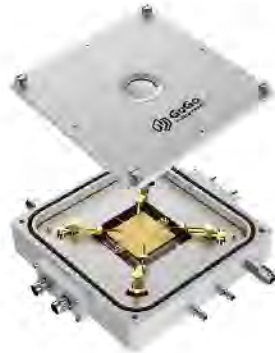
Configuration List

Software	Stage	Temperature Controller	Cooling Controller	Liquid Nitrogen Tank	Circulating Water Chiller	Others
GoGo TCS	Probing Heating & Cooling Stage	GTC-A	GRC-A	YDS-2-35	GCW-A	Cables, tubing, accessories, etc.

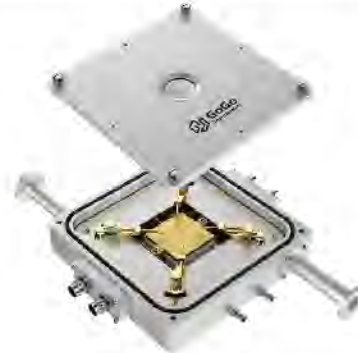
Optional accessories: Adapter plates / Custom liquid nitrogen tanks / Custom circulating water chillers / Vacuum systems / Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

Product Features

EPE120: Temperature Range -25°C~120°C.Temperature Stability $\pm 0.1^\circ\text{C}$.Multi-mode precision temperature control: setpoint, ramp, and segment programming.
Sample stage: reflection/transmission modes. Screw-top cover for easy access. Fixed probes are adopted, compatible with various optical instruments and electrical measurement devices.



EPE120



EPE120V

Specifications

TYPE	EPE120	EPE120V
Cooling/Heating Method	TEC	
Temperature Range	-25°C~120°C	
Temperature Stability	$\pm 0.1^\circ\text{C}$	
Heating/Cooling Rate	Maximum Heating Rate:30°C/min,Maximum Cooling Rate:30°C/min	
Sample Holder	Copper ;40mm*40mm	
Optical Path	Reflection / Transmission ($\phi 2\text{mm}$ Optical Access Hole)	
Top Window Size	$\phi 25\text{mm} \times 1\text{mm}$	
Bottom Window Size	$\phi 10\text{mm} \times 1\text{mm}$ (Transmitted Light Option)	
Window Material	JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.	
Window Defrosting	Gas Purge Attachment,Air blowing defrosting at low temperatures	
Distance from Window Upper Surface to Sample Holder Upper Surface	7.5mm	
Chamber Height	6.5mm	
Probe	Magnetic probe station *4 + tungsten steel gold-plated probe *4	
Probe Port	BNC*4	
Sample Stage Potential	Grounded / Electrically Floating	
Chamber	Atmosphere	Vacuum
Dimensions	204mm*194mm*41mm	204mm*266mm*41mm (Without Bellows)
Optional	0.5kg	0.6kg

Configuration List

Software	Stage	Temperature Controller	Circulating Water Chiller	Others
GoGo TCS	Probing Heating & Cooling Stage	GTC-B	HLUL-15	Cables, tubing, accessories, etc.

Optional accessories: Adapter plates / Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

Product Features

EH200-Mini: Temperature Range RT~200°C. The grooved sample stage is specifically designed for oil bath environments and is suitable for immersion testing in oil.
 EH600S: Temperature Range RT~600°C. Temperature Stability $\pm 0.1^\circ\text{C}$. Capable of long-term, stable operation at high temperatures.



EH200-Mini



EH600S

Specifications

TYPE	EH200-Mini	EH600S
Cooling/Heating Method	Resistance heating	
Temperature Range	RT~200°C	RT~600°C
Temperature Stability	$\pm 0.1^\circ\text{C}$	
Heating/Cooling Rate	Maximum Heating Rate: 150°C/min, Natural Cooling	
Sample Holder	Copper; $\phi 20\text{mm} \times 4\text{mm}$	Silver; 23mm*23mm
Optical Path	/	Reflection / Transmission ($\phi 2\text{mm}$ Optical Access Hole)
Top Window Size		$\phi 25\text{mm} \times 1\text{mm}$
Bottom Window Size		$\phi 10\text{mm} \times 1\text{mm}$ (Transmitted Light Option)
Window Material		JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.
Distance from Window Upper Surface to Sample Holder Upper Surface		7mm
Chamber Height	6mm	
Probe	High-Voltage Probe Holders*2 + Gold-Plated Copper Probe*2	Magnetic probe station *4 + tungsten steel gold-plated probe *4
Probe Port	BNC*2	BNC*4
Sample Stage Potential	Grounded / Electrically Floating	
Chamber	Open Chamber	Atmosphere
Dimensions	220mm*220mm*20mm	146.8mm*143mm*27mm
Optional	0.5kg	0.6kg

Configuration List

Software	Stage	Temperature Controller	Circulating Water Chiller	Others
GoGo TCS	Probing Heating Stage	GTC-C	GCW-A	Cables, tubing, accessories, etc.

Optional accessories: Adapter plates / Custom circulating water chillers/Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

Product Features

EH1000/EH1200: Temperature Range RT~1200°C. Temperature Stability $\pm 0.1^\circ\text{C}$. Capable of precise programmed temperature control while ensuring long-term stability under ultra-high temperature conditions.

EH1000S-HE: Temperature Range RT~1000°C. The stage body is constructed from non-magnetic materials, making it suitable for Hall effect measurements.



EH1000/1200



EH1000S-HE

Specifications

TYPE	EH1000	EH1200	EH1000S-HE
Cooling/Heating Method	Resistance heating		
Temperature Range	RT~1000°C	RT~1200°C	RT~1000°C
Temperature Stability	$\pm 0.1^\circ\text{C}$		
Heating/Cooling Rate	Maximum Heating Rate: 150°C/min, Controllable Cooling Rate		
Sample Holder	Ceramic; 20mm*20mm		
Optical Path	Reflection		
Top Window Size	$\phi 25\text{mm} \times 1\text{mm}$		
Bottom Window Size	$\phi 10\text{mm} \times 1\text{mm}$ (Transmitted Light Option)		
Window Material	JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.		
Distance from Window Upper Surface to Sample Holder Upper Surface	10mm		10.5mm
Chamber Height	9mm		9.5mm
Probe	Fixed Probe Holders*4 + Tungsten probes or Tungsten-rhenium probes*4		Tungsten probes*4
Probe Port	BNC*4		
Sample Stage Potential	Grounded / Electrically Floating		
Chamber	Atmosphere		
Dimensions	150mm*210mm*27mm		120mm*120mm*25mm
Optional	1.6kg		0.6kg

Configuration List

Software	Stage	Temperature Controller	Circulating Water Chiller	Others
GoGo TCS	Ultra-High-T Electrical Heating Stage	GTC-D	GCW-A	Cables, tubing, accessories, etc.

Optional accessories: Adapter plates / Custom circulating water chillers / Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

► Ultra-High-T Electrical Resistivity Probe Stage

● Product Features

The ultra-high-T electrical resistivity probe stage adopts the four-point probe method and can be used to study the resistance characteristics of materials such as conductive rubber and conductive plastic at different temperatures. The system consists of an ultra-high temperature probe heating stage, a four-point probe sheet resistance tester, dedicated testing software, and other components.



EH1500V-R

● Specifications

TYPE	EH1500V-R
Cooling/Heating Method	Resistance heating
Temperature Range	RT~1500°C
Temperature Stability	±0.1°C
Heating/Cooling Rate	Maximum Heating Rate: 150°C/min, Controllable Cooling Rate
Sample Holder	Ceramic; φ16mm
Optical Path	Reflection (Side-incident at 30° through Ø15mm aperture)
Top Window Size	φ25mm*1mm
Bottom Window Size	φ10mm*0.5mm
Window Material	JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.
Distance from Window Upper Surface to Sample Holder Upper Surface	53.5mm (Slash)
Chamber Height	Without probe: 7.9 mm; With probe: 0~3 mm
Probe	Pure Tungsten Probes*4
Probe Port	BNC*4
Sample Stage Potential	Electrically Floating
Chamber	Atmosphere/Vacuum
Dimensions	226mm*185.4mm*81mm
Optional	2.05kg

● Configuration List

Software	Stage	Temperature Controller	Circulating Water Chiller	Others
GoGo TCS	Ultra-High-T Electrical Resistivity Probe Stage	GTC-D	GCW-A	Cables, tubing, accessories, etc.

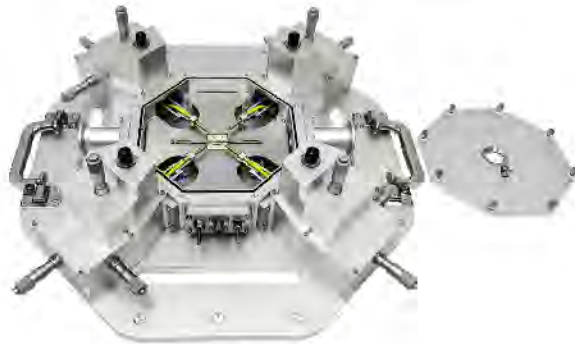
Optional accessories: Adapter plates / Custom circulating water chillers / Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

► Externally Adjustable Probe Stage

● Product Features

ECH400V-EM: An integrated translation stage is adjusted via a micrometer.

ECH400V-EB: An external translation stage is connected via a bellows.



ECH400V-EM



ECH400V-EB

● Specifications

TYPE	ECH400V-EM	ECH400V-EB
Cooling/Heating Method	Liquid nitrogen cooling, Resistance heating	
Temperature Range	-190°C~400°C	
Temperature Stability	±0.1°C	
Heating/Cooling Rate	Maximum Heating Rate: 150°C/min, Maximum Cooling Rate: 40°C/min	
Sample Holder	Silver ; 23mm*23mm	
Optical Path	Reflection	
Top Window Size	φ25mm*1mm	
Bottom Window Size	JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.	
Window Material	25mm	16.5mm
Distance from Window Upper Surface to Sample Holder Upper Surface	20.5mm	15mm
Chamber Height	Gold-Plated Tungsten Carbide Coaxial Probes*4	
Probe	XYZ Travel: ±6mm	
Probe Port	Triaxial BNC*4	
Sample Stage Potential	Grounded / Electrically Floating	
Chamber	Vacuum	
Dimensions	436mm*436mm*132mm	430mm*430mm*60mm
Optional	13.5kg	10.5kg

● Configuration List

Software	Stage	Temperature Controller	Cooling Controller	Liquid Nitrogen Tank	Circulating Water Chiller	Others
GoGo TCS	Probing Heating & Cooling Stage	GTC-A	GRC-A	YDS-2-35	GCW-A	Cables, tubing, accessories, etc.

Optional accessories: Adapter plates / Custom liquid nitrogen tanks / Custom circulating water chillers / Vacuum systems / Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

Product Features

EPE120V-EM: Temperature Range -25°C~120°C. Temperature Stability $\pm 0.1^\circ\text{C}$. Cooling based on the Peltier effect, without the need for liquid nitrogen.
 EH1000V-EM: Temperature Range RT~1000°C. Temperature Stability $\pm 0.1^\circ\text{C}$. Capable of long-term stable operation at ultra-high temperatures.



EPE120V-EM



EH1000V-EM

Specifications

TYPE	EPE120V-EM	EH1000V-EM
Cooling/Heating Method	TEC	Resistance heating
Temperature Range	-25°C~120°C	RT~1000°C
Temperature Stability	$\pm 0.1^\circ\text{C}$	
Heating/Cooling Rate	Maximum Heating/Cooling Rate: 30°C/min	Maximum Heating Rate: 150°C/min, Controllable Cooling Rate
Sample Holder	Copper; 40mm*40mm	Ceramic; 20mm*20mm
Optical Path	Reflection	
Top Window Size	$\phi 100\text{mm} \times 3\text{mm}$	$\phi 25\text{mm} \times 1\text{mm}$
Window Material	JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.	
Distance from Window Upper Surface to Sample Holder Upper Surface	14mm	33.5mm
Chamber Height	11mm	29.5mm
Probe	Gold-Plated Tungsten Carbide Coaxial Probes*4	Gold-plated tungsten probe*4
Probe Adjustment	XYZ Travel: $\pm 6\text{mm}$	XYZ Travel: $\pm 12.5\text{mm}$
Probe Port	Triaxial BNC*4	
Sample Stage Potential	Grounded / Electrically Floating	
Chamber	Vacuum	
Dimensions	374mm*375mm*66mm	520mm*520mm*145mm
Optional	15kg	22kg

Configuration List

Software	Stage	Temperature Controller	Circulating Water Chiller	Others
GoGo TCS	Externally Adjustable Probe Station	GTC-B / GTC-D	HLUL-15	Cables, tubing, accessories, etc.

Optional accessories: Adapter plates / Custom circulating water chillers / Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

► Precision Electronically Adjusted Probe Stage

● Product Features

ECH400V-EC: Temperature Range -190°C~400°C. Features an electrically-controlled probe holder that enables motorized positioning of the probe during experiments, with a positioning accuracy of up to 5 nm.



ECH400V-EC

● Specifications

TYPE	ECH400V-EC
Cooling/Heating Method	Liquid nitrogen cooling, Resistance heating
Temperature Range	-190°C-400°C
Temperature Stability	±0.1°C
Heating/Cooling Rate	Maximum Heating Rate: 150°C/min, Maximum Cooling Rate: 40°C/min
Sample Holder	Silver ; 23mm*23mm
Optical Path	Reflection / Transmission (φ2mm Optical Access Hole)
Top Window Size	φ25mm*1mm
Window Material	JGS2 Fused Silica Glass (Transmission Range: 220 nm - 2500 nm), manually removable and replaceable.
Distance from Window Upper Surface to Sample Holder Upper Surface	12.5mm
Chamber Height	10.5mm
Probe	Motorized probe holders*2 + Gold-plated tungsten probe*2
Probe Adjustment	XYZ Travel: ±6mm
Probe Port	BNC*2
Sample Stage Potential	Grounded / Electrically Floating
Chamber	Vacuum
Dimensions	110mm*170mm*45mm
Optional	1.5kg

● Configuration List

Software	Stage	Temperature Controller	Cooling Controller	Liquid Nitrogen Tank	Circulating Water Chiller	Others
GoGo TCS	Motorized Probe Station	GTC-A	GRC-A	YDS-2-35	GCW-A	Cables, tubing, accessories, etc.

Optional accessories: Adapter plates / Custom liquid nitrogen tanks / Custom circulating water chillers / Vacuum systems / Custom probes / Custom probe interfaces / Computer hosts / Custom temperature control software, etc.

▶ Test System - In Situ Variable-Temperature Electrical Testing System

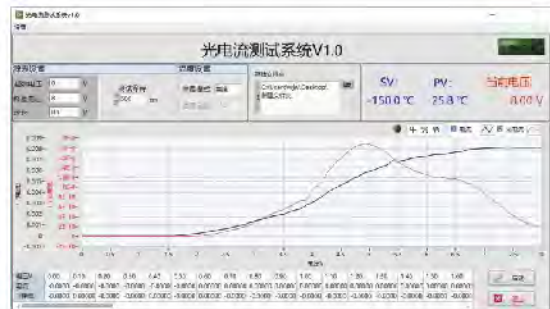
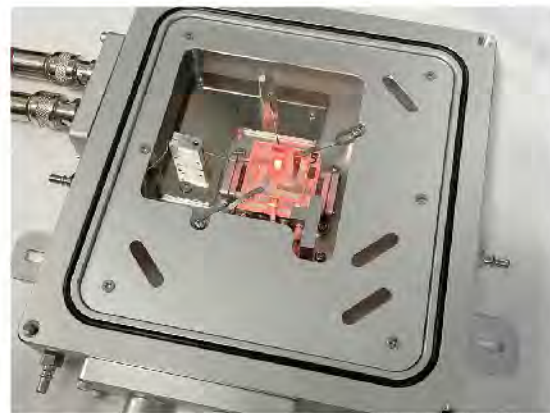
• OLED Variable-Temperature Optoelectronic Test System

● System Description

The OLED variable-temperature optoelectronic test system is a set of equipment used to study the electroluminescent performance of OLED devices at different temperatures. It mainly includes a heating/cooling stage, source meter, silicon photodiode, spectrometer, and host computer control software.

● Specifications

Heating/Cooling Method	Liquid Nitrogen Cooling, Resistance Heating
Temperature Range	-190°C~600°C
Temperature Stability	±0.1°C
Chamber Environment	Atmosphere
Silicon Photodiode Spectral Range	190nm~1100nm
Spectrometer Wavelength Range	300nm~1000nm



System Description

The dielectric temperature/frequency spectrum testing system is used to study the variation laws of dielectric properties (such as dielectric constant, loss factor) of materials (e.g., bulk, thin film) with temperature (temperature spectrum) and frequency (frequency spectrum). The core components of the system include an LCR bridge, a probe cooling/heating stage, and dedicated testing software, which can accurately measure and analyze the dielectric characteristics of materials under different temperatures and frequencies. An optional multi-channel switch can be configured to test up to 8 samples simultaneously, improving testing efficiency.

Specifications

Cooling/Heating Method	Liquid nitrogen cooling, resistance heating
Temperature Range	-190°C~600°C / RT~1000°C(optional)
Temperature Stability	±0.1°C
Chamber Environment	Atmosphere/Vacuum
Sample Stage Size	23mm*23mm
Probe	Copper-plated gold probe / Tungsten steel-plated gold probe / Tungsten needle probe



Single-channel testing system



Multi-channel testing system



- Dielectric Charge-Discharge Testing System

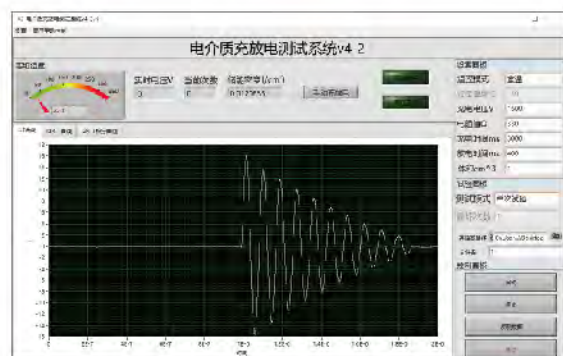
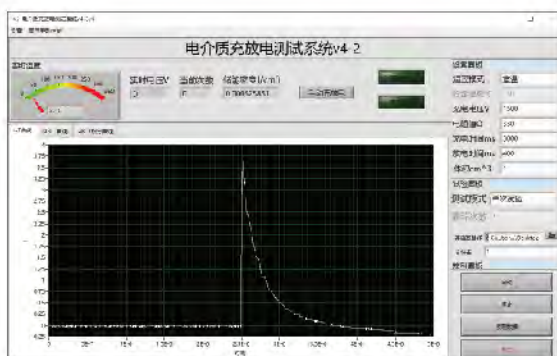
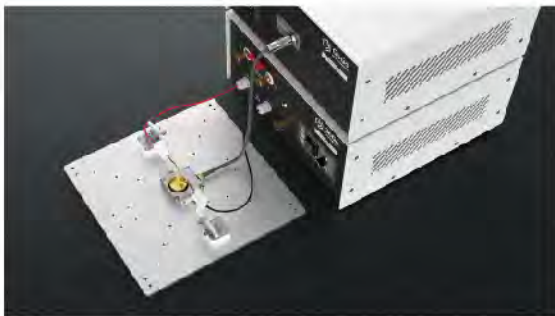
System Description

The dielectric charge-discharge testing system focuses on evaluating the high-voltage discharge performance of dielectric energy storage materials. The conventional method calculates energy density via the hysteresis loop, but it has limitations: during testing, the sample charge is returned to the high-voltage source (rather than a real load). This leads to the storage density measured by the hysteresis loop usually being higher than the actual energy density released by the material, making it impossible to accurately evaluate its discharge performance.

GoGo Instrument's dielectric charge-discharge testing system is designed to address the above issues. It is used to study the rapid charge-discharge characteristics of energy storage dielectric materials (ceramics, thin films, etc.). Its core advantage is the ability to simulate real discharge scenarios, and it supports underdamped and overdamped charge-discharge tests under variable temperature conditions. It is a key scientific research device in the current field of energy storage material research.

Specifications

Current Probe Bandwidth	120MHz
Peak Current	0-100A
Current Acquisition Accuracy	1mA
High-Voltage Source Module	3-10kV (optional; current: 5mA)
Switch Service Life	1,000,000 cycles; voltage resistance: 10kV
Temperature Control Range	RT~200°C
Temperature Stability and Accuracy	0.1°C
Test Samples	Thin film, thick film, ceramics, glass, etc



System Description

The ultra-high temperature resistivity testing system adopts the four-probe method. The ceramic heating stage core can be selected as a planar type or crucible type to adapt to samples of different shapes. It can be used to study the resistance characteristics of conductive adhesives, conductive plastics, high-resistance materials, etc. at different temperatures. The system composition includes: ultra-high temperature probe heating stage, four-probe square resistance tester, dedicated testing software, etc.

Specifications

Temperature Range	RT~1500°C
Temperature Stability	±0.1°C
Testing Method	Four-wire resistance measurement method
Probe	Pure tungsten probe / Tungsten-rhenium probe

Capable of testing bulk, sheet, and other sample types in molten or solid states



► Configuration Details

Temperature Controller

Through PID control, it automatically adjusts the heating and cooling power output of the stage to achieve fast, precise, and stable closed-loop temperature control.



■ GTC-A: For Electrical Heating/Cooling Stage

Rated Voltage	220V
Rated Frequency	50Hz/60Hz
Rated Power	200W
Communication Port	Ethernet Port
Net Weight	3.3kg
Dimensions	310mm*260mm*120mm (L×W×H)



■ GTC-B: For Peltier Electrical Heating/Cooling Stage

Rated Voltage	220V
Rated Frequency	50Hz/60Hz
Rated Power	150W
Communication Port	Ethernet Port
Net Weight	2.9kg
Dimensions	310mm*260mm*120mm (L×W×H)



■ GTC-C: For Electrical Heating Stage

Rated Voltage	220V
Rated Frequency	50Hz/60Hz
Rated Power	200W~600W
Communication Port	Ethernet Port
Net Weight	3.9kg
Dimensions	310mm*260mm*120mm (L×W×H)



■ GTC-D: For Ultra-High-T Electrical Heating Stage

Rated Voltage	220V
Rated Frequency	50Hz/60Hz
Rated Power	600W
Communication Port	Ethernet Port
Net Weight	4.1kg
Dimensions	310mm*260mm*120mm (L×W×H)



■ GTC-F: For Ultra-High-T Infrared Heating Furnace

Rated Voltage	220V
Rated Frequency	50Hz/60Hz
Rated Power	3200W
Communication Port	Ethernet Port
Net Weight	8.2kg
Dimensions	460mm*334mm*120mm (L×W×H)



■ GTC-B: Portable Temperature Control Box

Rated Voltage	12/24V
Rated Frequency	50Hz/60Hz
Rated power	180W
Net Weight	0.9kg
Dimensions	153mm*140mm*84mm (L×W×H)

Cooling Controller

Adjust the cooling/heating rate of the stage by controlling the flow rate.



■ GRC-A02

Rated Voltage	220V
Rated Frequency	50Hz/60Hz
Rated Power	80W
Liquid Port	Φ8mm Barb Connector
Net Weight	3.7kg
Dimensions	310mm*260mm*80mm(L×W×H)



■ GRC-A03/GRC-A04

Rated Voltage	220V
Rated Frequency	50Hz/60Hz
Rated Power	80W/120W
Liquid Port	Φ8mm Barb Connector
Net Weight	5.5kg/6kg
Dimensions	310mm*260mm*120mm(L×W×H)

Circulating Water Chiller

Used to circulate water through the heating/cooling stage enclosure to prevent overheating or excessive cooling, ensuring experimental safety.

GCW-A



Rated Voltage	220V
Rated Frequency	50Hz/60Hz
Rated Power	48W
Power Adapter	DC 12V 4A
Rated Water Capacity	300mL
Maximum Head	6m
Maximum Flow Rate	9L/min
Inlet/Outlet	Φ8mm Barb Connector
Net Weight	3.1kg
Dimensions	323mm*154mm*165mm(L×W×H)

■ **HLUL-15:** Provides higher flow rate and cooling capacity, capable of extending the temperature control range of Peltier heating/cooling stages or cooling enclosures of ultra-high-temperature equipment.



Voltage	220V
Operating Current	0.4A-2.7A
Frequency	50Hz/60Hz
Total Rated Power	450W
Water Tank Capacity	6L
Maximum Flow Rate	16L/min
Maximum Head	15m
Nominal Cooling Capacity	2995Btu/h
Inlet/Outlet	Φ8mm Barb Connector
Dimensions	560mm*285mm*470mm(L×W×H)
Net Weight	22kg

Liquid Nitrogen Tank



YDS-2-35

Capacity	2.5L
Neck Diameter	35mm
Dimensions	Φ220mm*410mm
Empty Weight	2.99kg
Other Models Available	YDS-6-50、YDS-10-50

► Technical Specifications



● Electrical Fixture Selection

The electrical application heating/cooling stage can provide tailored solutions based on different testing requirements:

Leakage Current Options: fA-level, pA-level

Fixture Options: Standard probes, RF probes, Kelvin probes, probe cards, binding posts, PCB boards, pin headers, etc., or other customized fixtures.

	Material	Shaft Diameter	Tip Size	Magnetic Probe Holder	Fixed Probe Holder	High-Voltage Probe Holder	Electrically Controlled Probe Holder	External Probe Fixture	Miniature Universal Coaxial Probe Holder	Miniature Universal Follow-Up Probe Holder
Probes	Tungsten Steel Plated with Gold	0.5mm	$\leq 10\mu\text{m}$							
	Tungsten-Rhenium Alloy		$\leq 100\mu\text{m}$	✓	✓	×	✓	✓	✓	✓
	Pure Tungsten		$\leq 500\mu\text{m}$							
Heavy-Duty Probe	Copper Plated with Gold	1.5mm	200 μm	×	✓	×	×	×	×	✓
		2mm	2mm	×	×	✓	×	×	×	×
Coaxial Probe	Tungsten Steel Plated with Gold	1.2mm	$\leq 10\mu\text{m}$							
	Tungsten-Rhenium Alloy		$\leq 100\mu\text{m}$	×	×	×	×	✓	✓	×
			$\leq 500\mu\text{m}$							

The above are standard configurations; customized solutions are available.



PCB Board



Pin Header



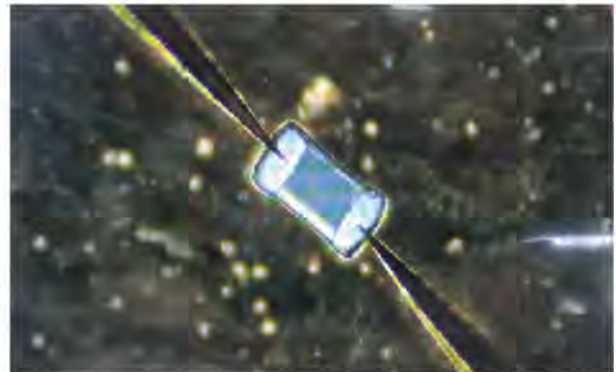
Binding Post

● Electrical Interface Selection

Electrical Interface	BNC Connector	Triaxial BNC Connector	SMA Connector
Frequency Range	4GHz	500MHz	0~18 GHz (DC~40 GHz optional)
Impedance	50Ω/75Ω		50Ω
Application	Suitable for low-frequency coaxial connections		Suitable for high-performance microwave applications
Advantages	Reliable connection, good vibration resistance, easy to use	Combined with structure and cables, leakage current can reach fA level	Small size, excellent performance

● Auxiliary Tip Positioning

GoGo Instruments integrate a dedicated digital microscope to ensure precise positioning and operation of probes.



● Chamber Structure

Atmosphere Structure:The heating/cooling stage chamber is designed as an atmosphere structure by default, equipped with standard quick-connect fittings. Gas can be introduced into the chamber as needed. It can also be upgraded to a corrosion-resistant structure for introducing corrosive gases.

Vacuum Structure:The heating/cooling stage structure is upgraded to a vacuum structure with improved sealing. The atmosphere interface is replaced by a vacuum interface for connection to a vacuum pump, achieving a maximum vacuum level of 10^{-4} Pa.

Vacuum Venting Structure:Commonly used in ultra-high temperature stages or ultra-high temperature infrared focusing heating furnaces. This structure is compatible with both vacuum and atmosphere environments, allowing switching between vacuum and atmosphere to achieve a purer atmosphere environment.

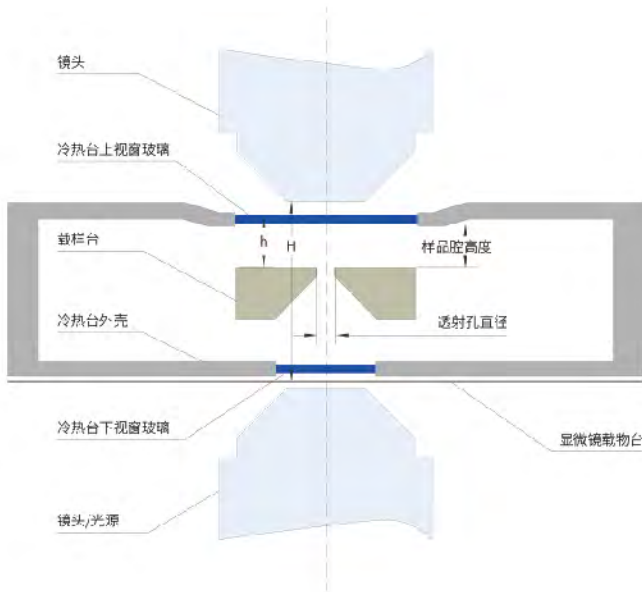
High-Pressure Structure:The heating/cooling stage structure is upgraded to a high-pressure structure, capable of withstanding pressures up to 1 MPa, and equipped with a safety valve.



Vacuum Hose Length: 12 cm



Vacuum Hard Tube Length: Customizable



h: Distance from the upper surface of the viewport to the upper surface of the sample stage. Determines the minimum focal length required for compatible objectives.

H: Distance from the lower surface of the lens to the upper surface of the microscope stage. Determines the installation space required for the heating/cooling stage.

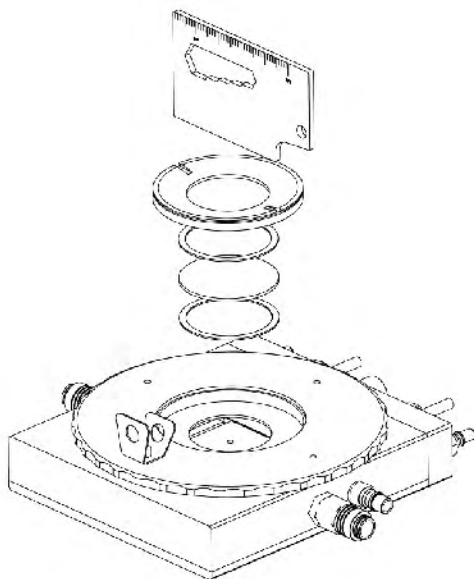
Reflection/Transmission Modes

The optical path can be selected according to the observation method:

Reflection Path: Sample stage with no light-transmitting hole.

Transmission Path: Sample stage with a $\phi 2\text{mm}$ central light-transmitting hole.

The size of the light-transmitting hole and the incident light hole can be customized according to requirements.



The glass viewport can be detached and replaced under the following conditions:

1、During testing, sample volatiles deposit on the lower surface of the viewport, affecting observation clarity.

2、The heating/cooling stage is equipped with a standard JGS-2 quartz glass viewport, but needs to be replaced with a viewport of another material.

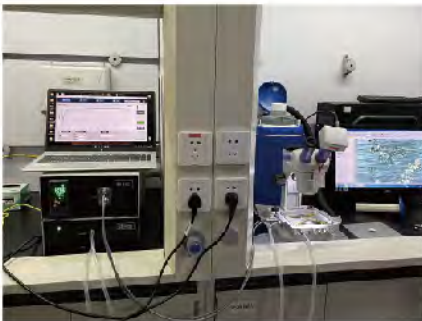
► Electrical Application Cases



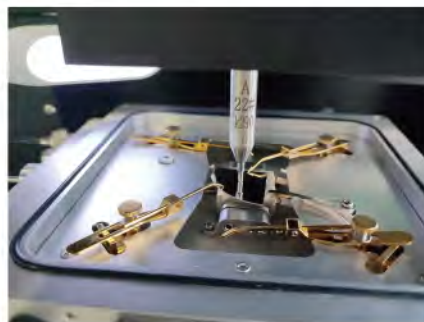
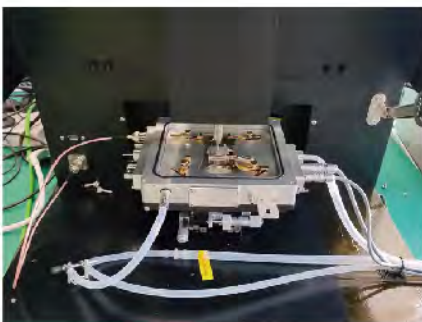
■ Custom Electrical Heating and Cooling Stage; Compatible with Inverted Microscopes



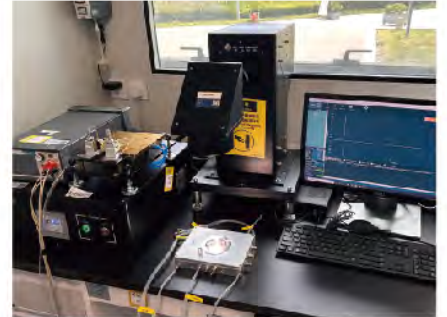
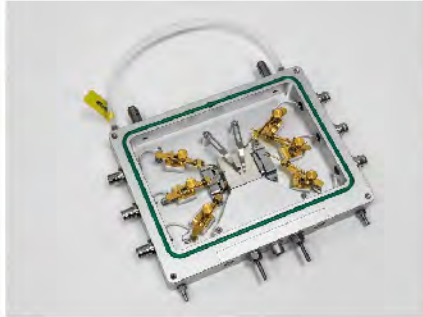
■ Custom Electrical Heating and Cooling Stage; Used in Pharmaceutical Research



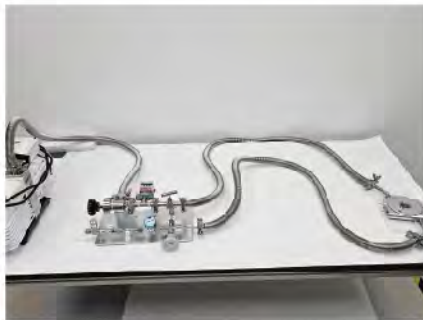
■ ECH600S, Used in Conjunction with D33 Equipment for D33 Testing



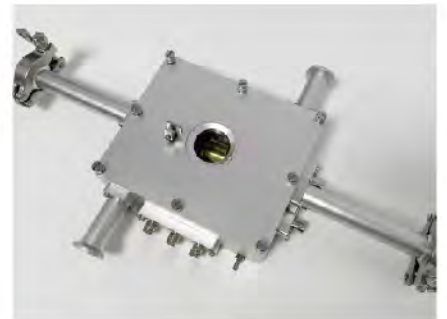
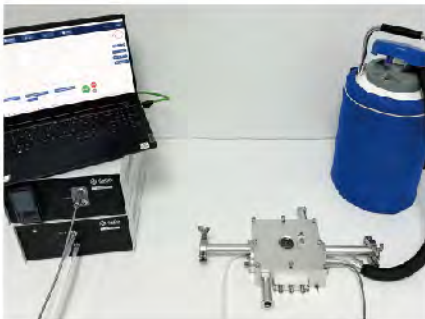
■ Custom Inverted Electrical Heating and Cooling Stage, Used in Perovskite Solar Cell Research



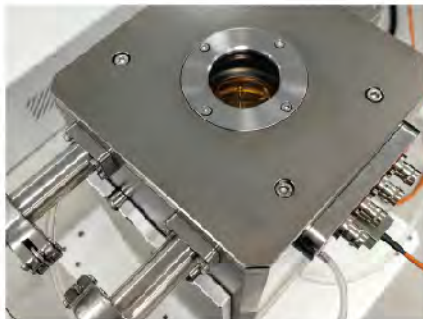
■ ECH600S with Customized Special Gas Path System, Used in Battery Research



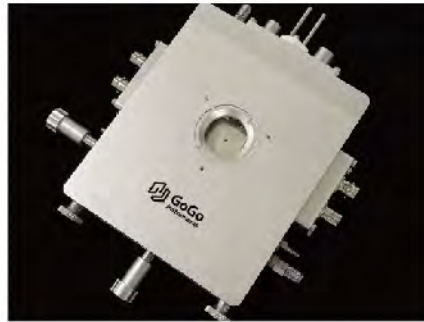
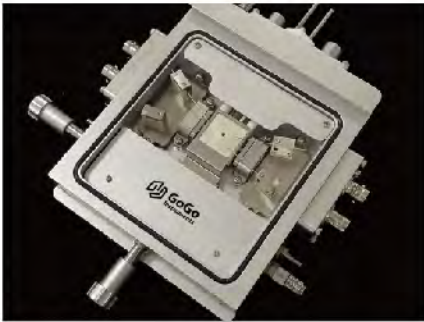
■ Custom Vacuum Electrical Stage, Used in Optical Fiber Sample Research



■ Custom Ultra-High-T Infrared Carbon Fiber Heating Electrical Testing System



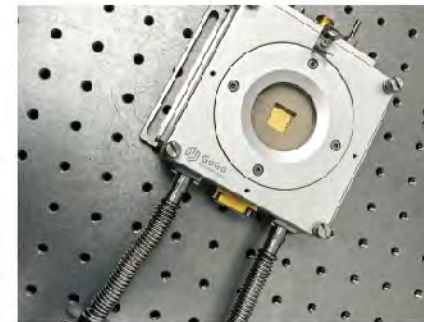
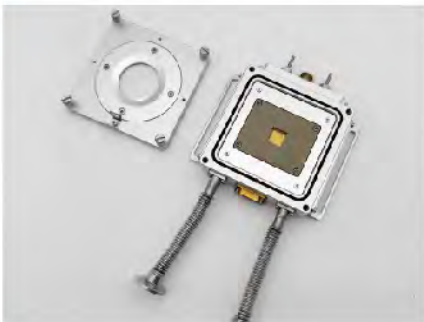
■ Custom Electrical Heating and Cooling Stage with Adjustable Sample Position



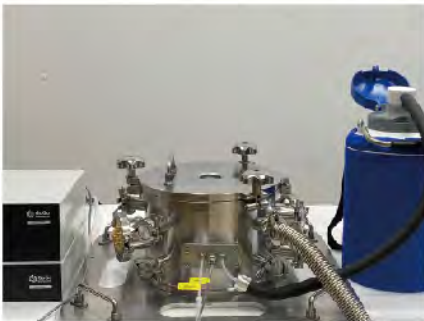
■ Custom SMA Port Electrical Heating/Cooling Stage(Wiring Post Solution)



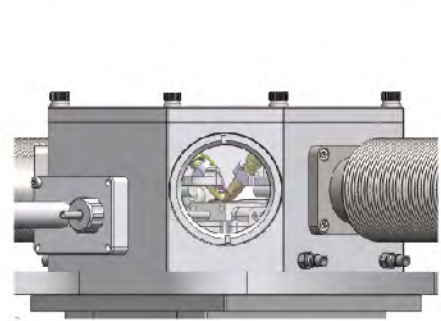
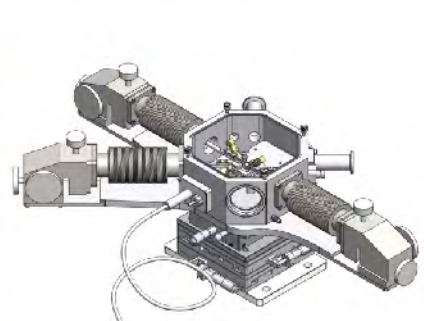
■ Custom PCB-Integrated Thermal Stage



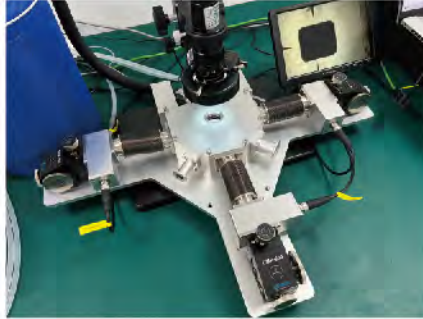
■ Custom Electrical Heating and Cooling Stage, Compatible with AFM



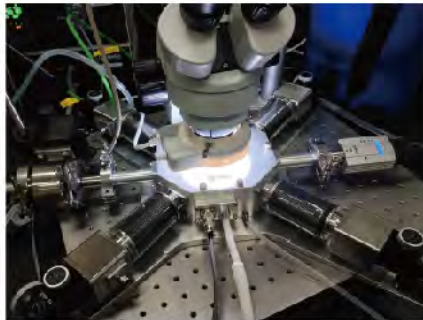
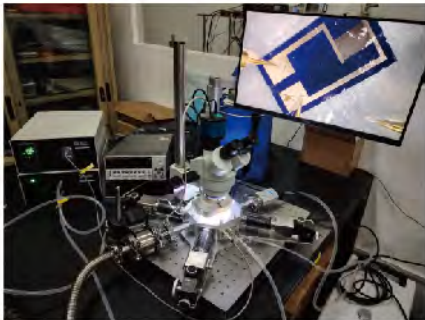
■ Custom Externally Adjustable Probe Thermal Stage, for Multi-Field Characterization (Optical, Electrical, etc.)



- Custom Externally Adjustable Probe Thermal Stage, Used for Temperature-Variable Testing Research of Field-Effect Transistors/MOSFETs, etc.



- ECH400V-EB, Externally Adjustable Probe Thermal Stage



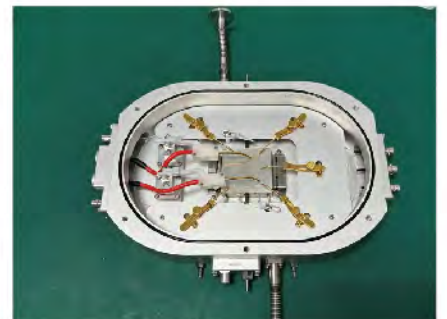
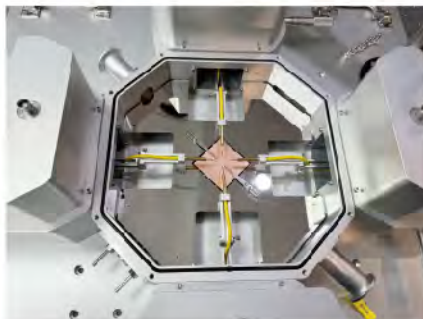
- Custom Externally Adjustable Radio Frequency Probe Thermal Stage

- Custom Externally Adjustable Probe Thermal Stage, $XYZ \pm 25\text{mm}$

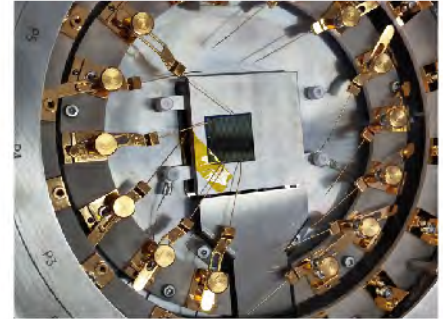


- ECH400V-EM, Externally Adjustable Probe Thermal Stage

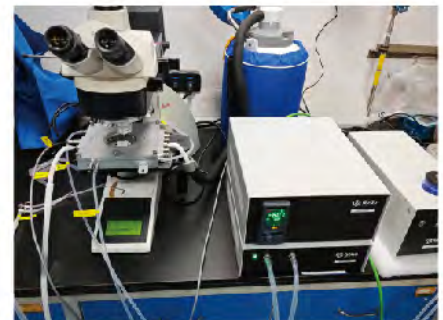
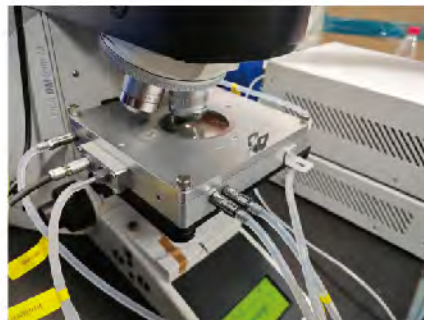
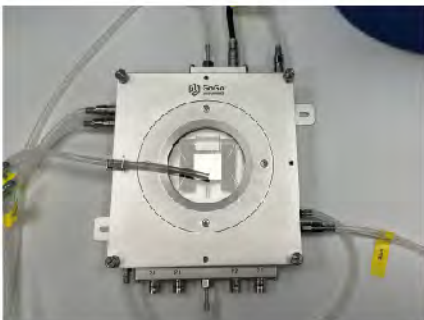
- Custom High-Voltage Probe Station



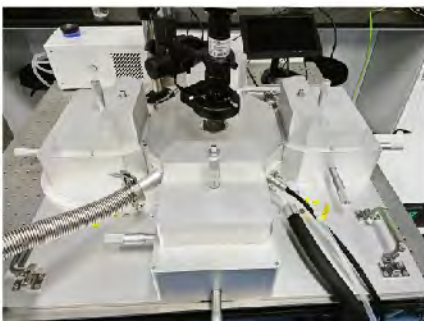
■ Custom 32-Probe Thermal Stage, RT~200°C



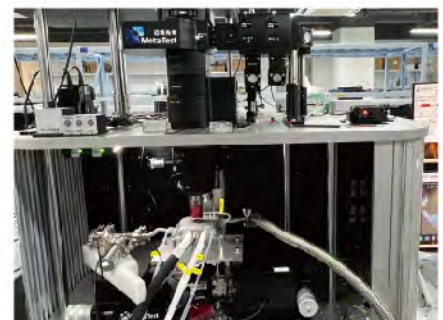
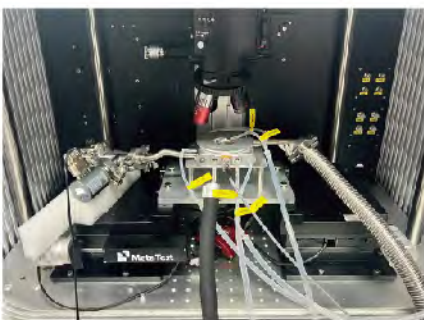
■ Custom Probe Thermal Stage, -190°C~600°C, for Chip Heat Dissipation Testing



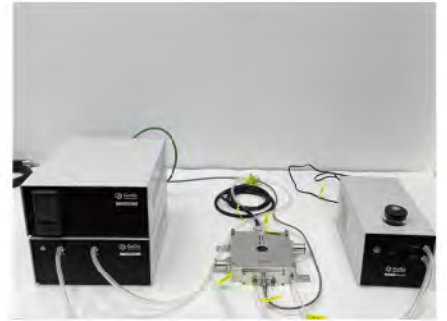
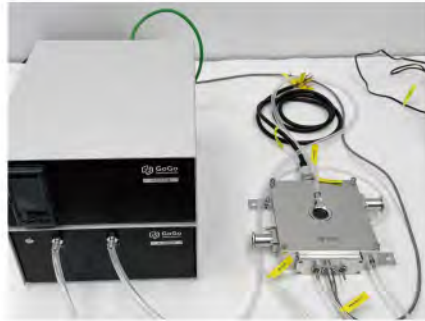
■ Custom Externally Adjustable Probe Station, 50mm × 50mm Sample Stage, for Wafer Electrode Testing



■ Equipped with Optoelectronic Testing System, -190°C~400°C, for 2D Material Testing



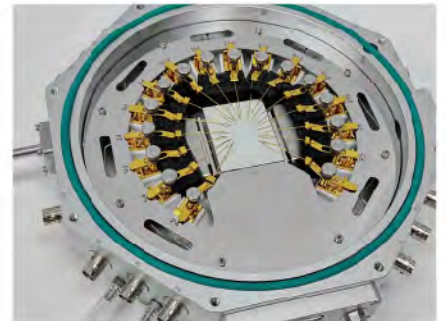
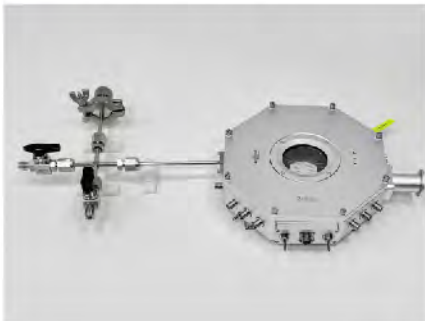
- Custom 14-Channel Probe Thermal Stage (with 12 Multi-Chip Sockets & 2 SMA Ports, Compatible with Circuit Boards), -190°C~400°C



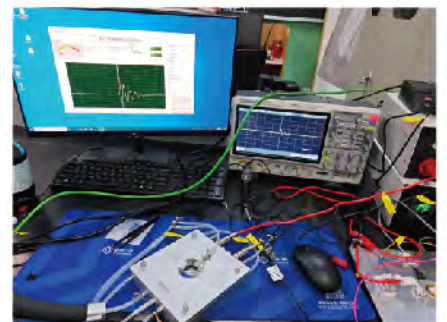
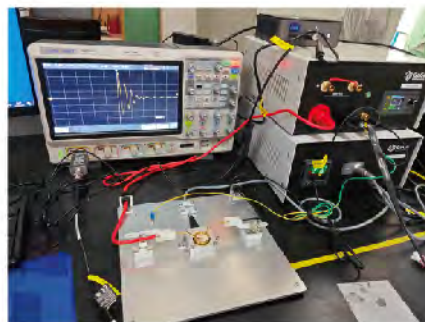
- Custom High-Vacuum Pressure-Retaining Probe Thermal Stage (Leakage Current $\leq 100\text{fA}$), -190°C~400°C



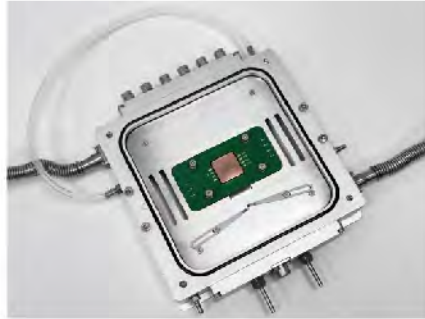
- Custom 16-Probe Thermal Stage, -190°C~600°C: Tests the Electrical Performance of Sensors Under Low-Pressure Gas Conditions as Temperature (High/Low) Changes



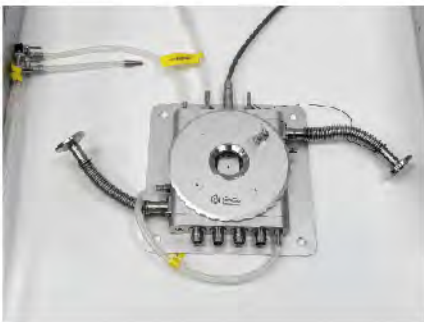
- Dielectric Charge-Discharge Testing System, RT~200°C



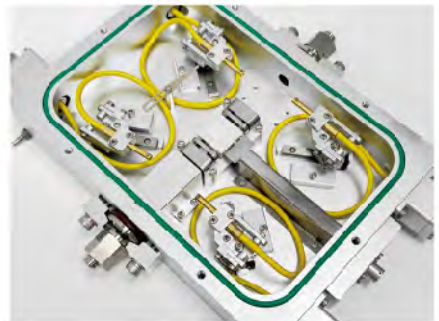
■ Custom Circuit Board Thermal Stage (Leakage Current $\leq 1\text{fA}$), $-190^{\circ}\text{C}\sim 400^{\circ}\text{C}$



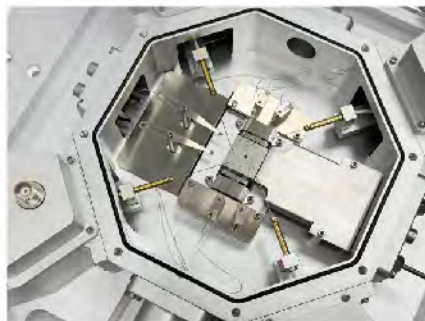
■ Custom Pin-Grid Electronic Thermal Stage (Probes Replaced with Pin-Grid for Easy Operation; Leakage Current $\leq 100\text{fA}$)



■ Custom Probe Thermal Stage, $\text{RT}\sim 600^{\circ}\text{C}$ (Leakage Current $< 50\text{fA}$)



■ Custom 8-Channel Probe Thermal Stage (Combines Externally Adjustable 4-Point Probes and Internally Adjustable 4-Point Probes)





Independent intellectual property rights



High-precision temperature control



Professional temperature control software



Custom development



Multi-industry application



High-quality service

Distribution in the UK & Ireland



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