# eDAQ Battery Research

Solid-state batteries represent a transformative advancement in energy storage, utilizing solid electrolytes

instead of traditional liquid ones.

- Solid electrolytes Test Cells
- Liquid Electrolytes Test Cells













# Solid Electrolytes Test Cells & Accesories

To address challenges in Solid-state batteries research eDAQ came up with Battery Test Cells.
Each model provides reliability and precise control over electrode-electrolyte pressure, optimizing the solid-solid interface for enhanced performance. Last but not least all cells are proposed at best prices ever !!!!

https://www.edaq.com/product_sheets/hardware/GT01_GT02_GT03_Battery_test_kit_data_sheet.pdf

## GT01 Compact Test Cell

Ideal for research in confined spaces, offering portability and simplicity.

The GT01 Compact Test Cell is designed for environments with limited space or budget constraints. Its smaller size and reduced weight make it an ideal option for researchers who need a portable, cost-effective solution without compromising on essential testing capabilities. This model is perfect for initial research, smaller-scale experiments, or projects requiring mobility, while still providing the necessary accuracy and reliability for fundamental testing procedures.

Can be customized or modified upon request



Dimensions: OD 50mm X 65mm
Standard Interior Diameter: 10.0 mm (It can be customized from 6.0mm to 20.0mm for FREE, please confirm the ID when ordering)
Maximum working pressure: 800 MPa
Maximum working temperature: 250 °C
Sleeve material: Polyether ether ketone (PEEK)
Pushing rod material (working electrode): mold steel(chrome plated)
Frame material: stainless steel

https://www.edaq.com/GT01

## GT02 Standard Test Cell

Features a robust design with a hand-tightening sealing ring for quick and easy assembly.

The GT02 Standard Test Cell offers enhanced durability and is designed to handle more demanding applications. With a larger, more robust construction, it is capable of withstanding the pressures of more complex research, offering a higher degree of structural integrity for a broader range of test conditions.
The GT02 also incorporates a hand-tightening sealing ring, which allows for easy and tool-free sealing & deflation, reducing setup time and improving efficiency in multi-step processes. This feature enhances the user experience by simplifying the handling process, while its increased size and durability make it suitable for a variety of electrochemical tests. Researchers can rely on the GT02 for both routine testing and more advanced, high-volume applications, providing a versatile tool for solid-state battery research.

Can be customized or modified upon request



Dimensions: OD 80mm X 100mm
Standard Interior Diameter: 10.0 mm (Custom ID 6mm to 20mm)
Maximum working pressure: 800 MPa
Maximum working temperature: 250 °C
Pushing rod material (working electrode) mold steel(chrome plated)
Frame material: stainless steel

Easier to vent compared to GT01.

https://www.edaq.com/GT02

## GT03 Enhanced Test Cell

The GT03 Enhanced Test Cell takes testing capabilities to the next level by focusing on precision and stability. It replaces the traditional three-nut pressure system with a central nut, ensuring even distribution of force across the test setup, which eliminates issues caused by uneven torque and pressure distribution. The GT03 is also equipped with a high-strength pressure-stabilizing spring that maintains consistent pressure throughout the entire testing procedure, making it particularly valuable for experiments requiring precise control over pressure variables. This added stability is crucial for high-accuracy tests, where small fluctuations can affect the outcomes. The GT03 is ideal for advanced solid-state battery research, where maintaining tight control over experimental conditions is essential for obtaining reliable, reproducible results.

Can be customized or modified upon request



Dimensions: OD 80mm X 200mm
Standard Interior Diameter: 10.0 mm (Custom ID 6mm to 20mm)
Maximum working pressure: 800 MPa
Maximum working temperature: 250 °C
Sleeve material: Polyether ether ketone (PEEK)
Pushing rod material (working electrode): mold steel(chrome plated)
Frame material: stainless steel
Better pressure stability than GT01 and GT02

https://www.edaq.com/GT03

## GT08 Microscopic observation Test Cell

Can be customized or modified upon request



PEEK Diameter: 50mm
Assembly Height: 20mm
Inner diameter: 6 - 20mm (Adjustable)
Working Pressure: 5MPa
Material: Special Steel / Copper

## GT11 Basic pouch battery Test Cell

Can be customized or modified upon request



Accessory mold springs: 40mm
Assembly Height: 100mm
Dimensions: 80x80mm - 200x200mm
Max Operating Pressure: 50 MPa
Material: Aluminum alloy /Stainless steel

## GT14 Airtight container for solid-state batteries - Contact eDAQ for pricing

Can be customized or modified upon request
Can be used with non-sealed battery cells



Size: 250ml, 500ml
Height: 100mm
Temp. resistance of the bottle body: ≤121°C
Material: High borosilicate glass, PP (polypropylene)
Styles: Battery holder, alligator clip, blue power clip (customizable)

| | Height | Bottle opening Dia. | Bottle Body Dia |
|---|---|---|---|
| Straight Wide Mouth | 70mm | 100mm | 110mm |
| 250ml | 110mm | 66mm | 100mm |
| 500ml | 150mm | 66mm | 100mm |

# Liquid Electrolytes Test Cells

Battery Production - Used in the manufacture of key components such as electrodes and separators for liquid batteries, ensuring precision in their dimensions and shapes
Materials R&D - In the development of new battery materials, test cells are used to test the performance of different materials and help optimize battery design
Quality Control - Battery components produced through test cells offer high consistency, ensuring stable battery performance and enhancing overall quality.
Experimental production - Suitable for laboratories and small-scale production, facilitating rapid validation of new designs or processes.

## YT01 MINI 2-Electrode Test Cell Kit

The YT01 MINI 2-Electrode Cell Test Kit offers complete sealing, making it an excellent choice for testing organic systems. It is compatible with a wide range of battery chemistries, including commercial lithium-ion, sodium-ion, and potassium-ion batteries, as well as research-focused systems such as organic magnesium-ion, calcium-ion, zinc-ion, aluminum-ion, iron-ion, and copper-ion batteries. Its superior sealing ensures reliable performance and minimizes the risk of leakage in these applications.
In addition, the YT01 Test Cell Kit is suitable for lithium-air battery testing, providing more stable electrochemical curves compared to other test cells. This stability makes it a valuable tool for precise and consistent electrochemical studies.
While the YT01 MINI 2-Electrode Cell Test Kit excels in supercapacitor and ion battery research, it is not suitable for air batteries or fuel cells that require gas supply and collection, as it does not include gas-handling capabilities.

Can be modified according to requirements
Length: 99 mm
Interior Diameter: 10 -20 mm (10 and 20 are commonly used size)
Maximum working pressure: 10 MPa
Maximum working temperature: 200 °C
Sleeve material: Polytetrafluoroethylene (PTFE)
Materials: pure titanium, titanium alloy, high-purity molybdenum



https://www.edaq.com/YT01

## YT02 MINI 3-Electrode Test Cell Kit

The YT02 MINI 3-Electrode Cell Test Kit is a versatile testing solution that provides complete sealing, making it ideal for organic system testing. Its robust design ensures excellent sealing performance, enabling reliable testing of various battery chemistries. These include commercial lithium-ion, sodium-ion, and potassium-ion batteries, as well as research-oriented systems such as organic magnesium-ion, calcium-ion, zinc-ion, aluminum-ion, iron-ion, and copper-ion batteries.
In addition, the YT02 Test Cell Kit is suitable for lithium-air battery testing, offering more stable electrochemical curves compared to other test cells. Its ability to deliver consistent and precise results makes it an essential tool for advanced electrochemical studies.
The YT02 MINI 3-Electrode Cell Test Kit also excels in supercapacitor and ion battery testing, leveraging its three-electrode design for detailed electrochemical analysis. However, it is not suitable for air batteries or fuel cells that require gas supply and collection, as it lacks integrated gas-handling features.

Can be modified according to requirements
Dimension: 100mm X 70mm
Interior Diameter: 10 -20 mm(10 and 20 are commonly used size)
Maximum working pressure: 10 MPa
Maximum working temperature: 200 °C
Sleeve material: Polytetrafluoroethylene (PTFE)
Materials: pure titanium, titanium alloy, high-purity molybdenum



https://www.edaq.com/YT02

# Customised Research

Liquid battery test cells are mainly used in experiments for material testing, prototype fabrication, performance evaluation, process verification, safety testing, and customized research, helping researchers efficiently and accurately conduct battery development and optimization.

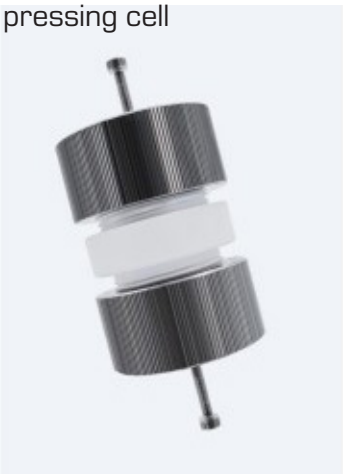
## YT04
Electrolyte membrane Battery Cell



## YT05
Double electrolyte Swagelok battery test cell



## YT06
Liquid battery test cell pressing cell



## YP01
Round tablet pressing cell



## YT07 Swagelok Air Battery Test Cell

Can be customized or modified upon request
Material: PTFE, Copper, polypropylene
Pore diameter: 2mm
Working inner diameter: 10 - 20mm
Int Operating Pressure: 10 MPa
Conditions of Use: ≤200°
Electrode materials: titanium alloy, pure titanium, high-purity molybdenum



## YT08 Swagelok Battery Test Cell

Can be customized or modified upon request
Material: PTFE, Copper
Operating pressure::10MPa
Inner diameter: 12mm
Observation condition: high-transmission quartz plate:
Conditions of Use: ≤200°
Electrode materials: titanium alloy, pure titanium, high-purity molybdenum



## YT09 Dendrite in-situ observation Battery Test Cell

Can be customized or modified upon request
Material: PTFE, Copper
Operating pressure::10MPa
Inner diameter: 12mm
Observation condition: high-transmission quartz slide:
Conditions of Use: ≤200°
Electrode materials: titanium alloy, pure titanium, high-purity molybdenum



## Standard Battery Test Cell Accessories - High-Purity Electrolyte Materials

The electrolyte is the medium for ion transport in the battery, responsible for conducting ions during the charge and discharge processes. Its ionic conductivity directly affects the battery's internal resistance and efficiency




Li2S




LPSCI




LLZTO nanoscale




LLZTO




LIC316




LATP




LAGP

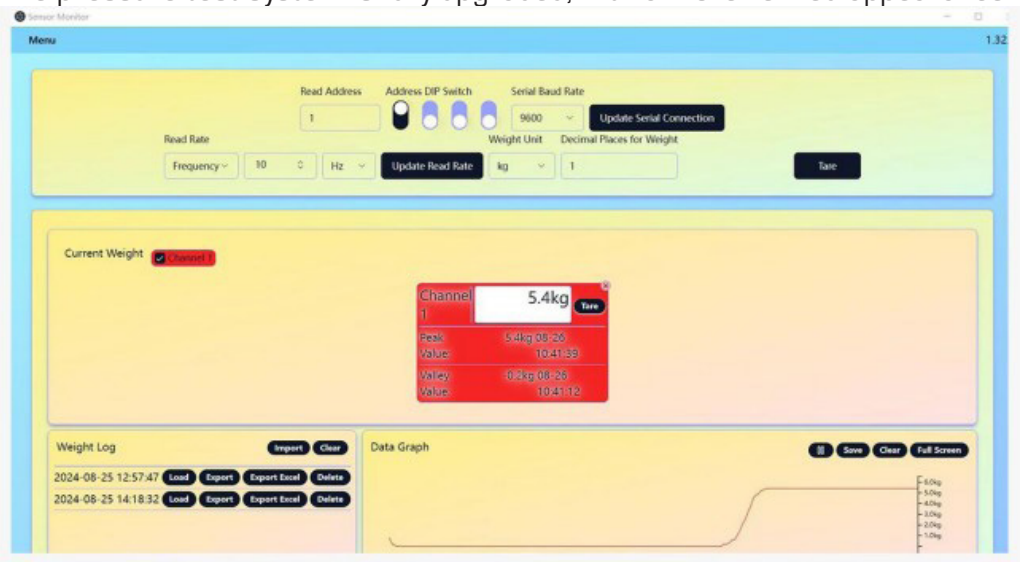


NZSPO

| Accessories | 20g | 25g | 100g |
|---|---|---|---|
| Lithium-rich manganese-based powder | | | |
| Sodium Ferric Sulfate Powder | | | |
| O-type layered oxide | | | |
| Layered oxide P-type | | | |
| Hard carbon | | | |
| Graphite | | | |
| Standard lithium-ion battery electrolyte | | | |
| Standard sodium-ion battery electrolyte | | | |
| Layered oxide 03 electrolyte (high voltage | | | |
| Layered oxide P2 electrolyte (high voltage) | | | |
| Prussian blue electrolyte | | | |
| Sodium ferric sulfate electrolyte | | | |
| NaPF6 | | | |
| LiPF6 | | | |
| NaFSI | | | |
| LIFSI | | | |
| FEC | | | |
| VC | | | |
| DTD | | | |
| Electrode customization | Available - Please contact eDAQ Pty Ltd | | |
| Soft pack customization | Available - Please contact eDAQ Pty Ltd | | |

## Pressure Sensing Systems

.Pressure Sensing Systems can record continuously for one week.
Software version - software interface - ·The software version is equipped with Excel recording function
The pressure test system is fully upgraded, with a more refined appearance. The core is more stable




## YL01 Single channel system




YL01 Digital display - Front View



YL01 Software version - Front View

## YL04 4 Chanel System



YL04 Front View



YL04 Rear View

## YL08 8 Channel System



YL08 Front View

YL08 Rear View

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