

Vendor: Arbin Instruments

Instrument: Battery Tester – Model BT2000

BT2000 has multiple, independently controlled, potentiostat/galvanostat channels, so different tests can be run on different channels simultaneously. The software package MITS-PRO uses a distributed system control and DAQ for automatic or manual maintenance and calibration, and also mathematic filters to reduce the fluctuation of current and voltage.



The BT2000 model at CNSE currently has 12 channels with a voltage range of -2V to 5V. Eight channels can provide a maximum charge/discharge of 1A, current ranges of 1A/1mA/1µA and a maximum channel power of 5W. Four channels can provide a maximum charge/discharge of 10A, current ranges of 10A/1A/0.1A and a maximum channel power of 50W. Up to four channels may be added if required to provide additional functionality or enhance existing capabilities.

Scanning Techniques Available

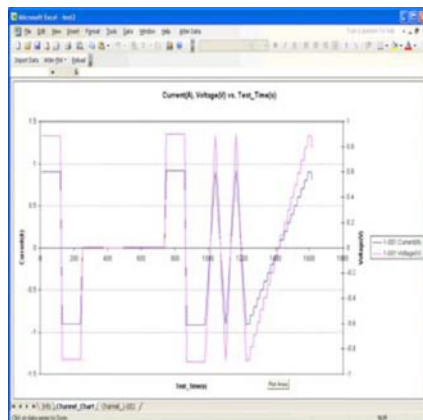
- Battery cycling
- Electrochemical experiments ranging from cyclic voltammetry to corrosion testing
- Voltaic testing such as general electrochemistry R&D techniques, industrial R&D, production and quality control

Property Determination

The equipment has all types of necessary control functions to test all types of battery chemistry for performance characteristics in terms of constant current/voltage, current/voltage ramps, current/voltage staircases, current/voltage pulse, current/voltage simulation, internal resistance/impedance, capacity rate, power, load and any other profile based on current/voltage through the “function” feature.

Example Data

Graphical and spreadsheet view of test data for different control types including: current, voltage, ramps, staircases, C-rate.



	A	B	C	D	E	F	G	H	I
1	Data Point	Test Time(s)	Date Time	Step Time(s)	Step Index	Cycle Index	Current(A)	Voltage(V)	Charge Capacity(Ah)
2	1	10.00283906	01/18/07 09:35:15	9.936821349	1	1	0.900270939	0.886362314	0.002481048
3	2	20.01771471	01/18/07 09:35:25	19.95168811	1	1	0.900270939	0.886362314	0.004985564
4	3	30.03270581	01/18/07 09:35:35	29.96668941	1	1	0.900303423	0.886362314	0.007490072
5	4	40.04757386	01/18/07 09:35:45	39.98155727	1	1	0.900238395	0.886362314	0.009994688
6	5	50.06250102	01/18/07 09:35:55	49.9964845	1	1	0.900270939	0.886362314	0.012495147
7	6	60.07738362	01/18/07 09:36:05	60.01138693	1	1	0.900270939	0.88623724	0.015003552
8	7	70.09234315	01/18/07 09:36:16	70.02632645	1	1	0.900303423	0.88623724	0.017508075
9	8	80.10725838	01/18/07 09:36:26	80.04124181	1	1	0.900270939	0.88623724	0.020012583
10	9	90.12216902	01/18/07 09:36:36	90.05614351	1	1	0.900270939	0.88623724	0.022517074
11	10	100.1370558	01/18/07 09:36:46	100.071039	1	1	0.900303423	0.88623724	0.025017682
12	11	110.1519938	01/18/07 09:36:56	110.0859772	1	1	0.900303423	0.88623724	0.027526103
13	12	120.0731553	01/18/07 09:37:05	120.0071386	1	1	0.900270939	0.88623724	0.030007148

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