Potentiostat/Galvanostat/EIS

WIZEIS – 1000PREMIUM
(T10, T20)

신속한 A/S

1MHz EIS, 합리적인 가격, 높은 안정성

Current Range : 5A~ 10nA
Compliance Voltage   : ±15V
Cotrol Voltage   : ±5V
EIS Frequency   : 1M ~ 10μHz

1 CHARACTERISTICS

주요특징	주요사양	기술&응용

– 모델명 : WizEIS – 1000Premium
– Potentiostat /Galvanostat/EIS
– 국내 연구진이 개발한 국산제품
– 사용이 편리한 소프트웨어
– 합리적 가격을 갖춘 모델
– 고객의 환경에 맞는 새로운 시스템 개발
  → 주문형 제작 가능
	– Control Voltage : ±5V
	– Compliance Voltage : ±15V
	– Current Range :
	  5A ~ 10nA (WizEIS-1000 Premium-T10 /
	  Basic)
	  5A ~ 10nA (WizEIS-1000 Premium-T20 / Plus)
	– 16 bit ADC, DAC
	– 1024 Step Current Range
	– 정확도 : 16 bit < 0.01 % f.s
		– Technique
		  Cyclic Voltammetry(CV)
		  Chrono Amperometry(CA)
		  Static Chrono Potentiometry(CP)
		  Potential Analysis(PA, OCV)
		  Stripping voltametry(SV)
		  Linear Sweep Voltametry(LSV)
		  Battery Test
		  Supercapacitor
		  Fuel Cell
		  Corrosion
		– Application
		  Thin Film, Corrosion, Biologic study,
		  Battery, Fuel Cell, Solar Cell, etc

2 SPECIFICATION

MODEL	Current Range
WizEIS – 1000Premium(T10)	± 5A ~ ±10nA (Basic)
WizEIS – 1000Premium(T20)	± 5A ~ ±10nA (Plus)

WizEIS – 1200Premium	
EIS Frequency Range	1MHz ~ 10μ㎐
Maximum Scan Rate	1000V/sec (1 ㎑ Sampling)
Cell connection	2, 3 probe type, alligator clip cable
LED	Run 1 ea / Connection 1 ea / Power 1 ea
Input Impedance	10^12 Ω
Bia current	< 5pA
Scan rate Maximum	AC : 10V/s
	DC : 100 V/s
acquisition time	50 μs

Current Measurement * 모델에 따른 변동사항 있음	
Range	±5 A ~ ±10 ㎁ [1000 ranges]
Current Range Step	Auto 1024 Step Main Current Range
	Auto 13 Step in Low, High Current Range
Resolution	16 bit
Maximum resolution	1 ㎀ ~ 1 ㎁
Accuracy	16 bit < 0.01 % f.s

Potential Measurement	
Range	± 5 V * Customer specified range
Compliance Voltage	± 15 V
Resolution	16 bit
Accuracy	16 bit < 0.01 % f.s

SYSTEM			
Dimension	Hight	Width	Depth
	9 cm	35 cm	27 cm
weight	5 Kg		
Power	60 Hz, 220 V		
PC configuration	Windows 8/32/64 bit, xp, vist, Mac		
Interface	Ethernet(LAN)		
AD Converter	16 bit		
Electrode	Working Electrode, Counter Electrode, Reference Electrode		
Filter	Low Pass Filter		
	(Software Filter : Cut Off Frequency Setting)		
	(Hardware Filter : Auto Selecting)		
Faraday Cage	Option		
Temperature measurment	Option		

3 ANALYSIS-1

TECHNIQUE		WizEIS1000Premium	
		T10 (Basic)	T20 (Plus)
Voltage & Frequency	Current Range	5A ~ 10nA	5A ~ 10nA
	AC Scan Rate (V/sec)	100V/s	100V/s
	DC Scan Rate (V/sec)	1000V/s	1000V/s
	Control Voltage Range (V)	±5V	±5V
	Compliance Voltage (v)	±15V	±15V
	EIS Frequency Range	1MHz ~ 10μHz	1MHz ~ 10μHz
CV (PotentioStatic)	Linear Sweep Voltammetry (LSV)	★	★
	Cyclic Voltammetry (CV)	★	★
	Staircase Voltammetry (SCV)	Option	★
	Square Wave Voltammetry (SWV)	Option	★
	Large Amplitude Sinusoidal Voltametry(LASV)	Option	★
	AC Voltammetry (ACV)	Option	★
CP (GalvanoStatic)	Chronopotentiometry Static(Static)	★	★
	Chronopotentiometry Pulse Dynamic(Dynamic Pulse)	★	★
	Chronopotentiometry(Charge & Discharge)	★	★
	Large Amplitude Sinusoidal Potentiometry(LASP)	Option	★
CA (PotentioStatic)	Chronoamperometry Static (Static)	★	★
	Chronoamperometry Pulse Dynamic(Dynamic Pulse)	★	★
	Differential Pulse Voltammetry (DPV)	Option	★
	Normal Pulse Voltammetry (NPV)	Option	★
	Reverse Normal Pulse Voltametry(RNPV)	Option	★
	Differential Pulse Amperometry(DPA)	Option	★
	Differential Normal Pulse Voltammetry (DNPV)	Option	★
EIS	PotentioStatic EIS (GEIS)	★	★
	Galvanostatic EIS (GEIS)	★	★
	Stair Case PotentioStatic EIS (SCPEIS)	Option	★
	Stair Case Galvanostatic EIS (SCGEIS)	Option	★

3 ANALYSIS-2

	TECHNIQUE	WizEIS1000Premium	
		T10 (Basic)	T20 (Plus)
SV	Potentiostatic Stripping	★	★
	Staircase Stripping	★	★
	Square Wave Stripping	★	★
Corrosion	Cyclic Polarization Voltametry (CPV)	★	★
	Tafel Plot	★	★
	Linear Polarization Voltametry (LPV)	Option	★
Battery Test	Cyclic Voltammetry (CV)	★	★
	Constant Current(CP Static)	★	★
	Constant Voltage(CA Static)	★	★
	Battery Charge and Discharge	★	★
	Current Scan(LSV)	★	★
Super Capacitor	Cyclic Voltammetry (CV)	★	★
	Constant Current(CP Static)	★	★
	Constant Voltage(CA Static)	★	★
	Constant Current Charge and Discharge	★	★
	Current Scan(LSV)	★	★
Custom Wave	Custom Scan Voltammetry	Option	★
	Custom Pulse Voltammetry	Option	★
	Custom Scan Potentiometry	Option	★
	Custom Pulse Potentiometry	Option	★
	Custom Scan & Pulse Voltammetry	Option	★
	Custom Scan & Pulse Potentiometry	Option	★
Option	Netwtok	★	★
	Wireless Network	Option	★
	RDE Control	Option	★

4 WIZEIS-1000PREMIUM EXPERIMENT

C1 10uF

C1 10uF

R1 10Ω

R2 300Ω

< 회로 1 >

R1 10Ω

R2 91Ω
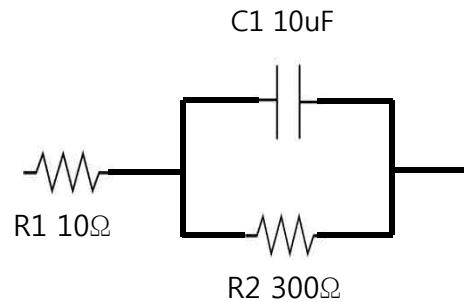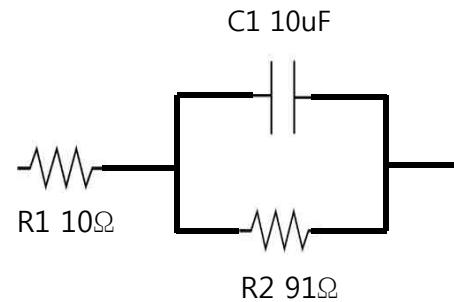
< 회로 2 >

- C1 고정, R1 고정
- C1 주파수 통과 범위
- R1 은 |Z|real 시작점
- R2에 의해 범위 차이

< 회로 1 > |Z|re
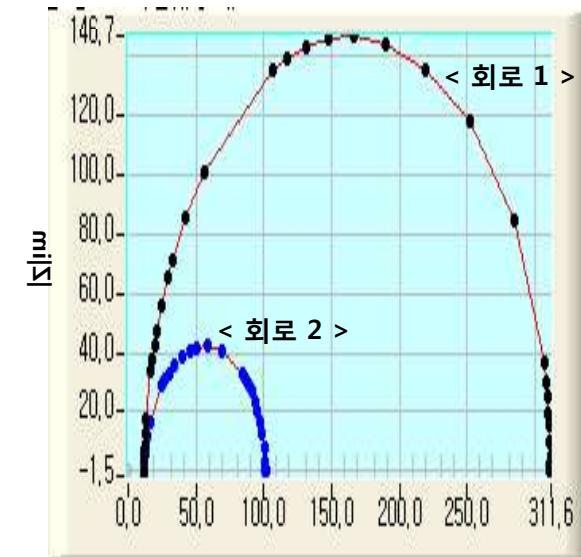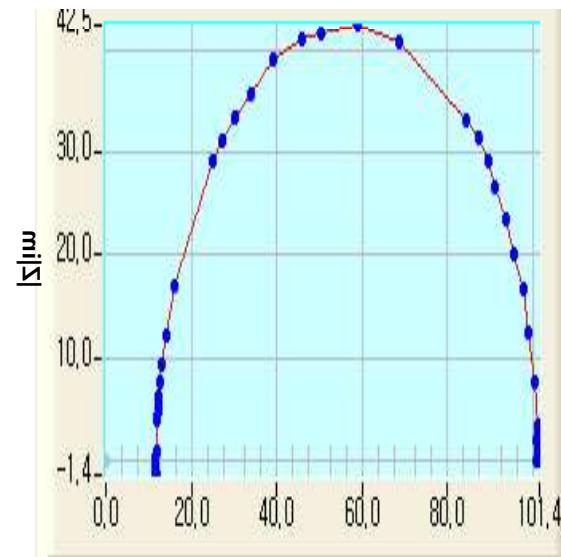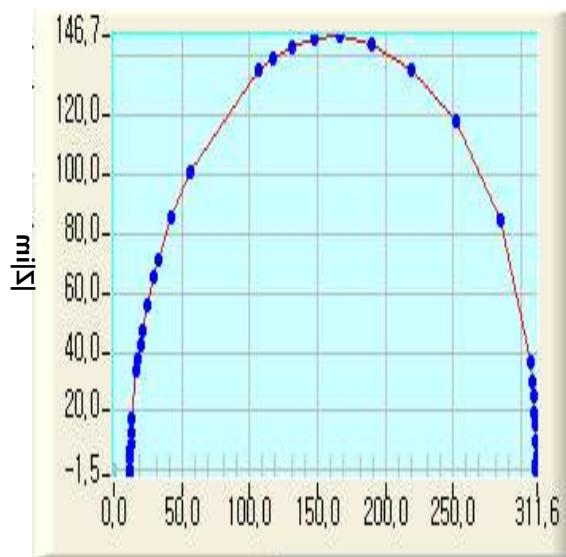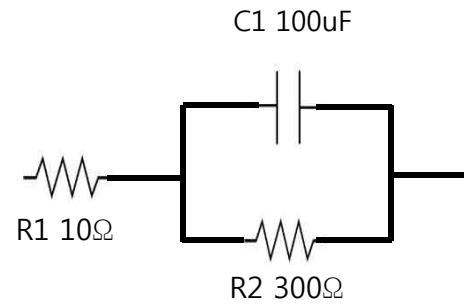
< 회로 2 > |Z|re

< 회로 1, 2 비교 > |Z|re

< 회로 1 >

< 회로 2 >

- C1 고정
- C1 주파수 통과 범위
- R1 은 |Z|real 시작점
- R2에 의해 범위 차이

< 회로 1 > |Z|re

< 회로 2 > |Z|re

< 회로 1, 2 비교 > |Z|re

C1 100uF   C2 10000uF

R1 10Ω

R2 30Ω   R3 60Ω
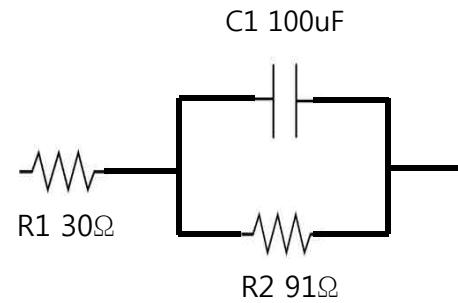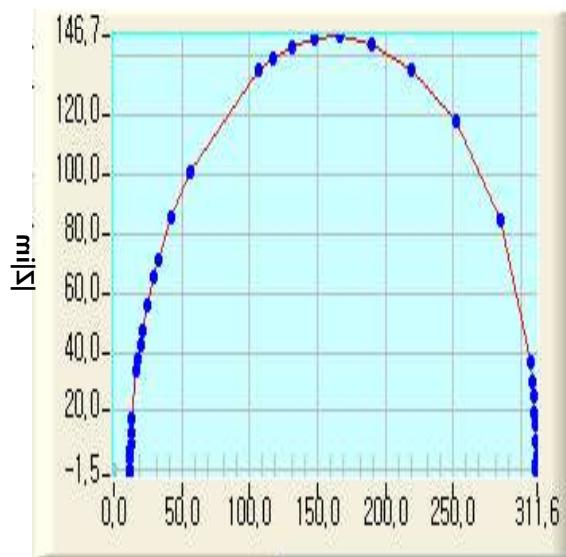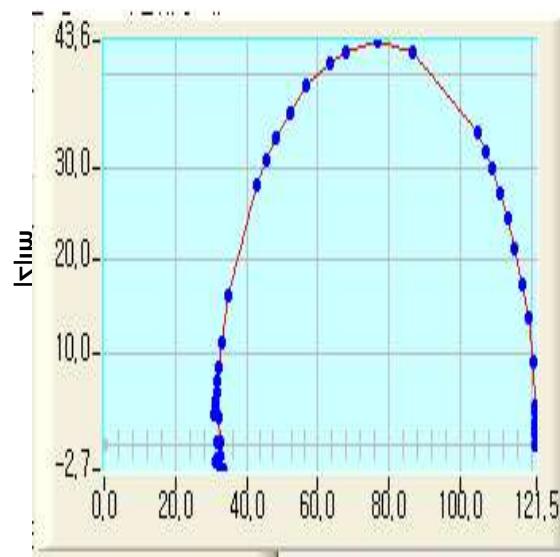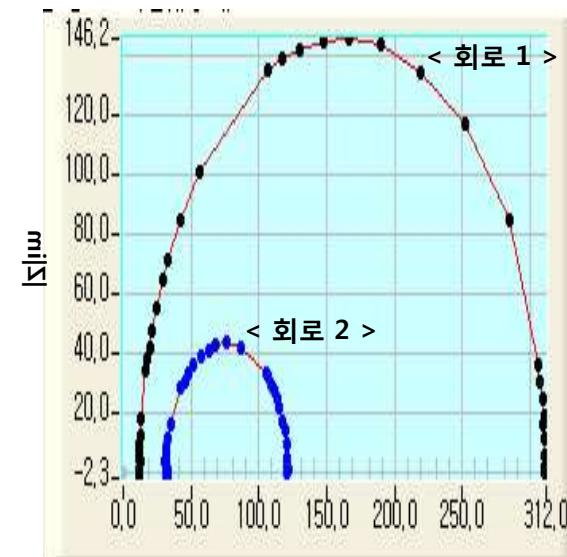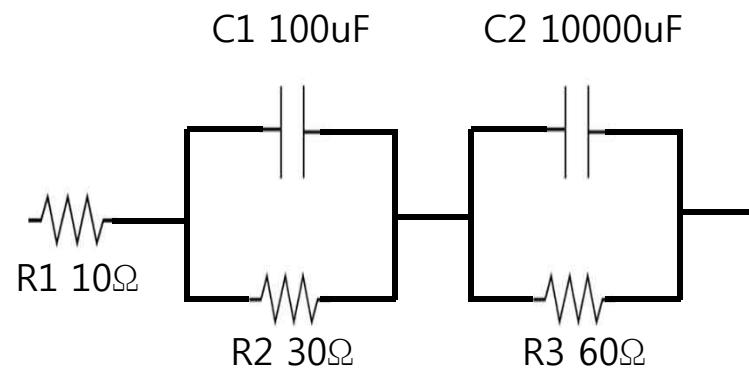
- 상(Phase)분리는 C1, C2의 용량 차이에 의해 결정
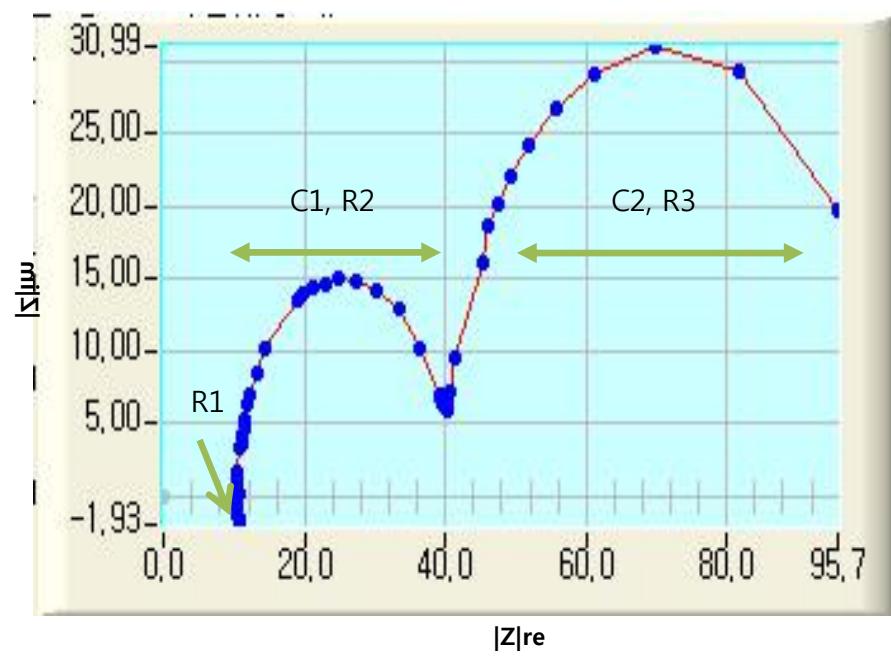
응용 및 취급품목

- **Cyclic Voltametry(Staircase Voltammetry, Square Wave Voltammetry, Large Amplitude Sinusoidal Voltametry, AC Voltammetry)**
- **EIS(PotentioStatic EIS (GEIS), Galvanostatic EIS (GEIS), Stair Case PotentioStatic EIS (SCPEIS))**
- **Chrono Potentiometry(Charge and Discharge , Constant Current, Constant Voltage)**
- **Chrono Amperometry(Differential Pulse Voltammetry (DPV), Normal Pulse Voltammetry (NPV))**
- **Stripping Voltametry(Staircase Stripping, Square Wave Stripping)**
- **Fuel Cell**
- **Battery Test(Battery Charge and Discharge , Constant Current, Constant Voltage)**
- **Supercapacitor(Galvanostatic Charge Discharge, Constant Current, Constant Voltage)**
- **전기화학 전극(기준전극, Ag/AgCl, Calomel, SCE)** ˙
- **전기화학 전극(카운터전극, Pt, Ag, Au)** ˙
- **전기화학 전극(워킹전극, Carbon, Au, Ag, Pt)** ˙
- **전기화학 셀(3구, 4구, 5구, 부식셀, 광전해 셀, Water Bath)** ˙
- **전기화학 소모품(Polishing Kit, Pt Wire, Carbon)** ˙
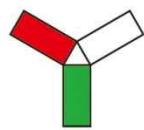
BITVALUE

value creation

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