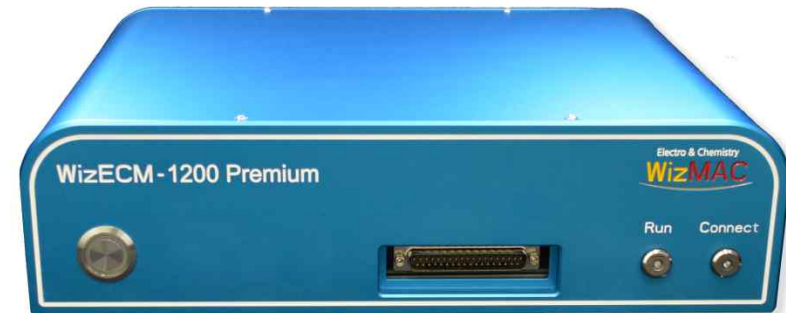


# Potentiostat/Galvanostat/EIS

## WIZEIS – 1200PREMIUM ( U10, U20 )

신속한 A/S



1MHz EIS, 합리적인 가격, 높은 안정성

Current Range : 2A~ 10nA

Compliance Voltage :  $\pm 15V$

Cotrol Voltage :  $\pm 5V$

EIS Frequency : 1M ~ 10 $\mu$ Hz

# 1 CHARACTERISTICS

주요특징	주요사양	기술&응용
<ul style="list-style-type: none"><li>- 모델명 : WizEIS - 1200Premium</li><li>- Potentiostat /Galvanostat/EIS</li><li>- 국내 연구진이 개발한 국산제품</li><li>- 사용이 편리한 소프트웨어</li><li>- 합리적 가격을 갖춘 모델</li><li>- 고객의 환경에 맞는 새로운 시스템 개발 → 주문형 제작 가능</li></ul>	<ul style="list-style-type: none"><li>- Control Voltage : <math>\pm 5V</math></li><li>- Compliance Voltage : <math>\pm 15V</math></li><li>- Current Range : 2A ~ 10nA (WizEIS-1200 Premium-U10 / Basic) 2A ~ 10nA (WizEIS-1200 Premium-U20 / Plus)</li><li>- 16 bit ADC, DAC</li><li>- 1024 Step Current Range</li><li>- 정확도 : 16 bit &lt; 0.01 % f.s</li></ul>	<ul style="list-style-type: none"><li>- 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</li><li>- Application Thin Film, Corrosion, Biologic study, Battery, Fuel Cell, Solar Cell, etc</li></ul>

## 2 SPECIFICATION

MODEL		Current Range	
WizEIS - 1200Premium(U10)		± 2A ~ ±10nA (Basic)	
WizEIS - 1200Premium(U20)		± 2A ~ ±10nA (Plus)	
WizEIS - 1200Premium			
EIS Frequency Range	1MHz ~ 10μHz		
Maximum Scan Rate	1000V/sec (1 kHz Sampling)		
Cell connection	2, 3 probe type, alligator clip cable		
LED	Run 1 ea / Connection 1 ea / Power 1 ea		
Input Impedance	10 <sup>12</sup> 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	±2 A ~ ±10 nA [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 pA ~ 1 nA		
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

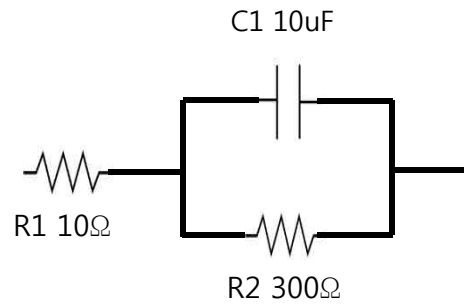
	TECHNIQUE	WizEIS1200Premium	
		U10 (Basic)	U20 (Plus)
Voltage & Frequency	Current Range	2A ~ 10nA	2A ~ 10nA
	AC Scan Rate ( V/sec)	100V/s	100V/s
	DC Scan Rate ( V/sec)	1000V/s	1000V/s
	Control Voltage Range (V)	±5V	±5V
	Compliance Voltage (v)	±15V	±15V
	EIS Frequency Range	1MHz ~ 10μHz	1MHz ~ 10μHz
CV (PotentioStatic )	Linear Sweep Voltammetry (LSV)	★	★
	Cyclic Voltammetry (CV)	★	★
	Staircase Voltammetry (SCV)	Option	★
	Square Wave Voltammetry (SWV)	Option	★
	Large Amplitude Sinusoidal Voltammetry(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 Voltammetry(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

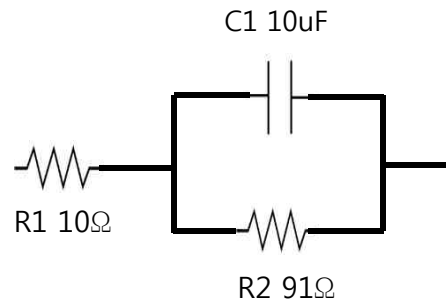
	TECHNIQUE	WizEIS1200Premium	
		U10 (Basic)	U20 (Plus)
SV	Potentiostatic Stripping	★	★
	Staircase Stripping	★	★
	Square Wave Stripping	★	★
Corrosion	Cyclic Polarization Voltammetry (CPV)	★	★
	Tafel Plot	★	★
	Linear Polarization Voltammetry (LPV)	Option	★
Battery Test	Cyclic Voltammetry (CV)	★	★
	Constant 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-1200PREMIUM EXPERIMENT

위즈맥 WizEIS-1200Premium으로 측정 해 본 R,C에 따른 비교실험

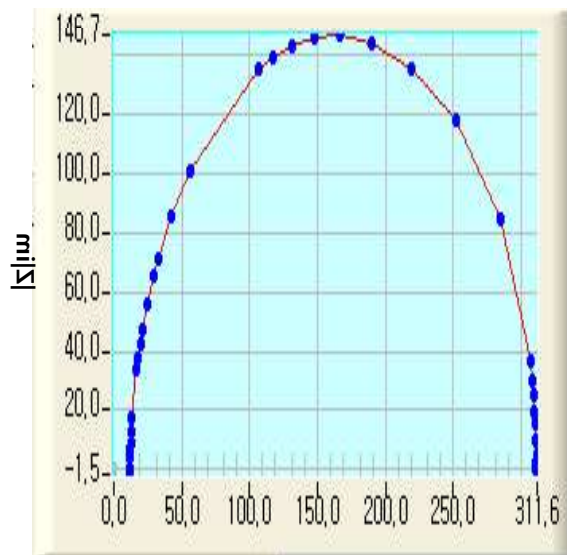


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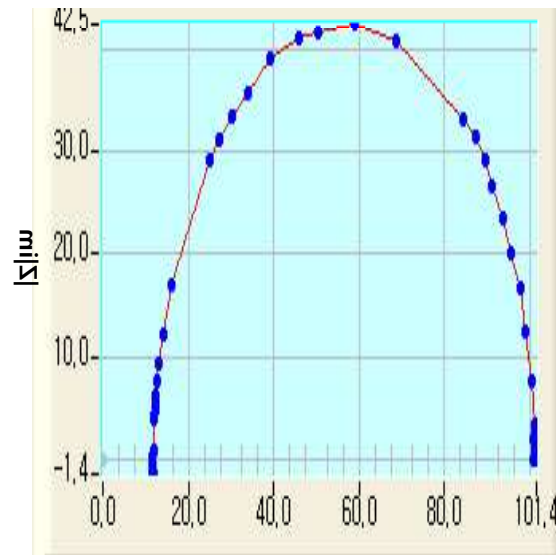


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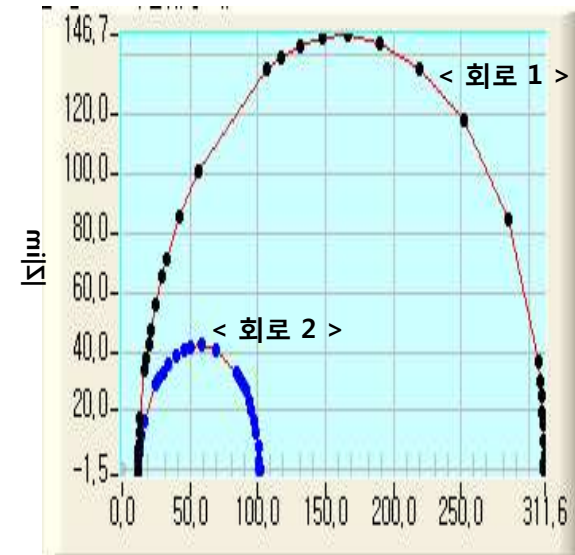
- C1 고정, R1 고정
- C1 주파수 통과 범위
- R1 은  $|Z|_{real}$  시작점
- R2에 의해 범위 차이



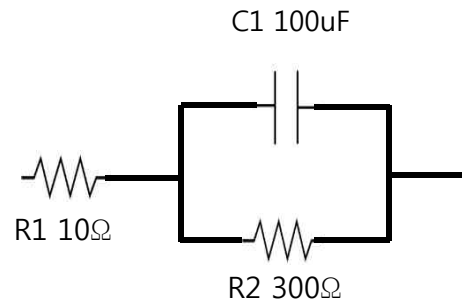
< 회로 1 >  $|Z|_{re}$



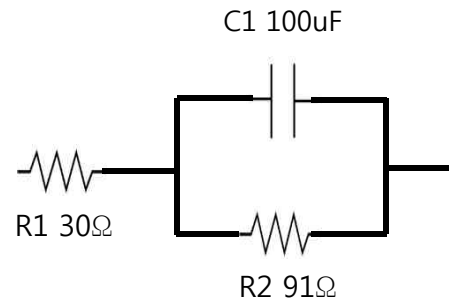
< 회로 2 >  $|Z|_{re}$



< 회로 1, 2 비교 >  $|Z|_{re}$

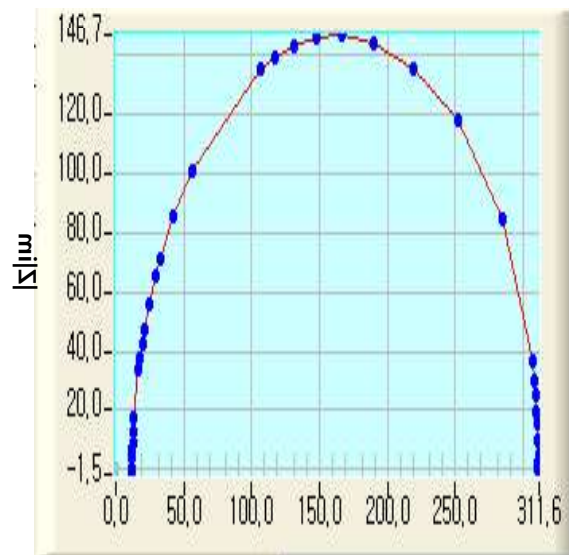


< 회로 1 >

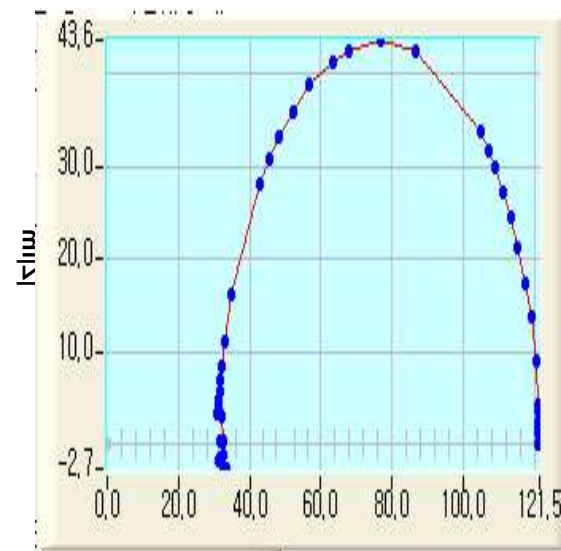


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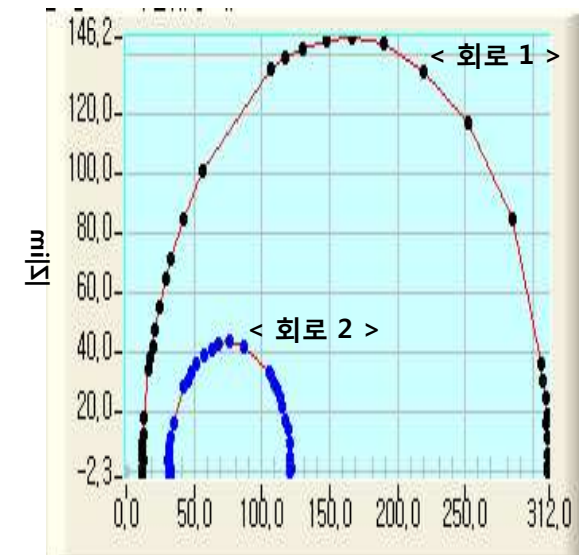
- C1 고정
- C1 주파수 통과 범위
- R1 은  $|Z|_{\text{real}}$  시작점
- R2에 의해 범위 차이



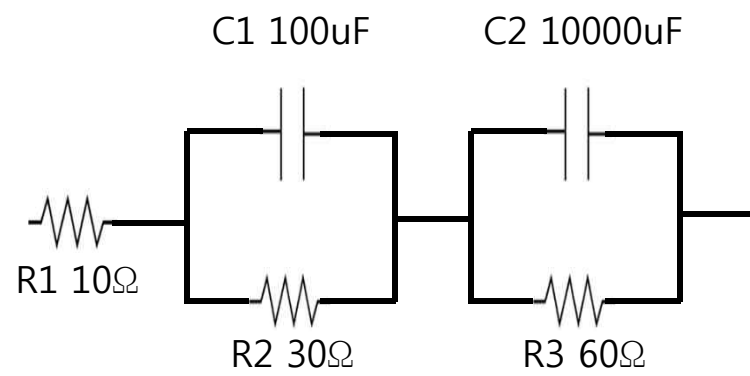
< 회로 1 >  $|Z|_{\text{re}}$



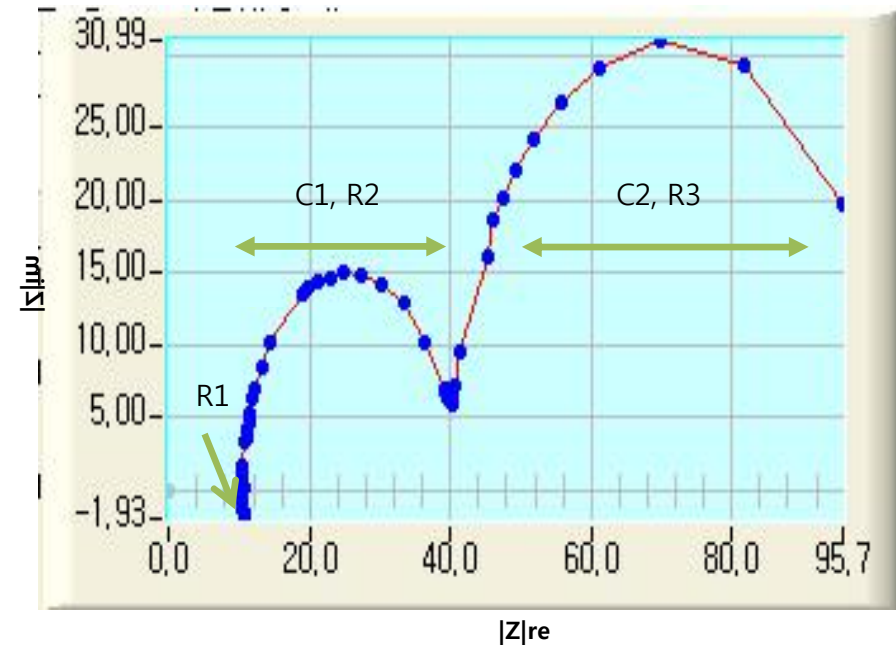
< 회로 2 >  $|Z|_{\text{re}}$



< 회로 1, 2 비교 >  $|Z|_{\text{re}}$



- 상(Phase)분리는  $C1$ ,  $C2$ 의 용량 차이에 의해 결정

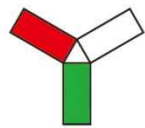




## 응용 및 취급품목

- Cyclic Voltammetry( Staircase Voltammetry, Square Wave Voltammetry, Large Amplitude Sinusoidal Voltammetry, AC Voltammetry )
- EIS(PotentialStatic EIS (GEIS), Galvanostatic EIS (GEIS), Stair Case PotentialStatic EIS (SCPEIS) )
- Chrono Potentiometry(Charge and Discharge , Constant Current, Constant Voltage )
- Chrono Amperometry( Differential Pulse Voltammetry (DPV), Normal Pulse Voltammetry (NPV) )
- Stripping Voltammetry( 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 ) ·

**Contact  
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value creation

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