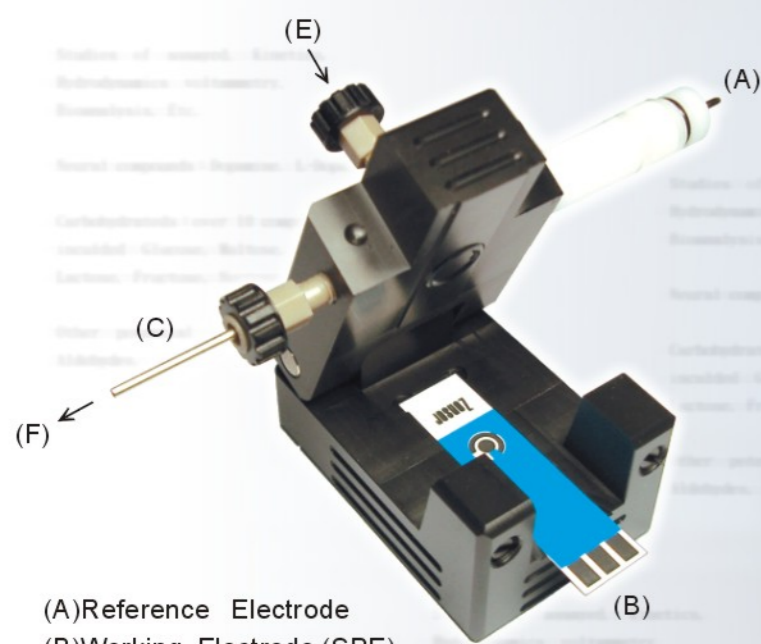
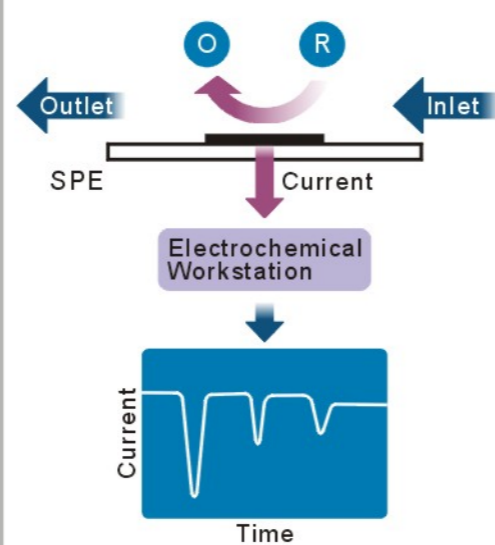


Construction of SF100



- (A) Reference Electrode
- (B) Working Electrode (SPE)
- (C) Counter Electrode
- (D) Main body of SF 100
- (E) Inlet
- (F) Outlet

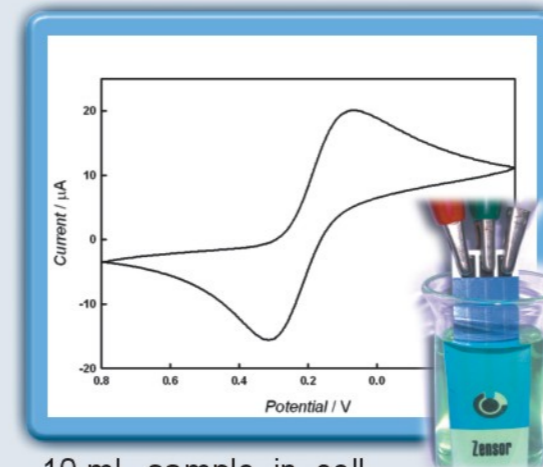
Detection principle



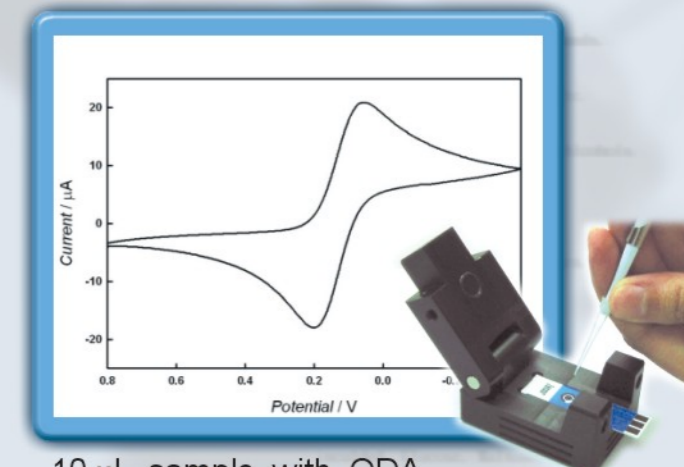
One Drop Analysis (ODA)

SF 100 can also be used in ODA and approximately 10-20 μL of sample is enough for electrochemical experiments

Cyclic Voltammetry of Ferricyanide / SPE



10 mL sample in cell.



10 μL sample with ODA.

HPLC / FIA

Application of SF 100 with SPE:

Electroactive compounds:
Ferricyanide, Catechol, etc.

Kinetics, Hydrodynamic voltammetry,
Bioanalysis, etc.

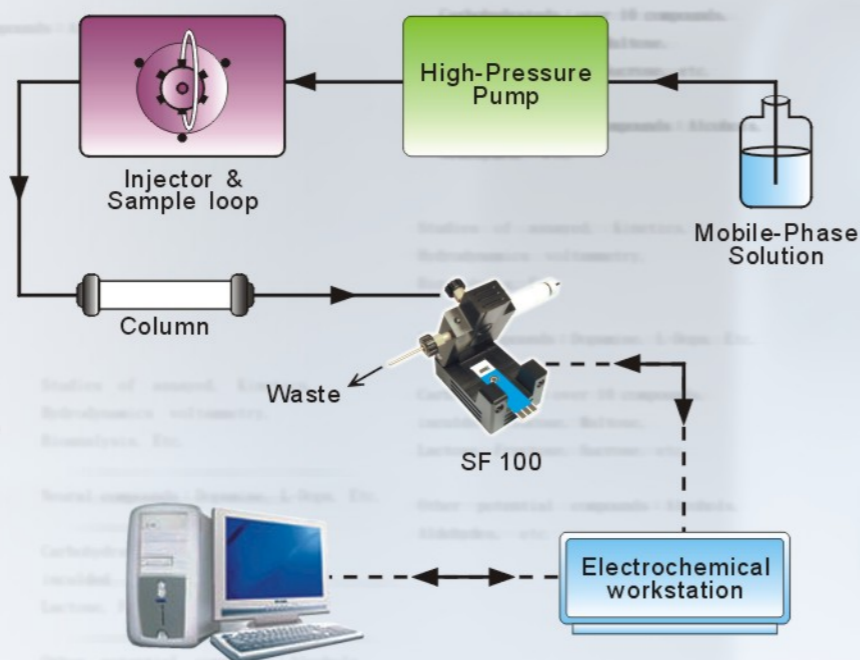
Neurotransmitters: Dopamine, L-Dopa, etc.

Carbohydrates such as Glucose, Maltose,
Lactose, Fructose, Sucrose, etc.

Alcohols

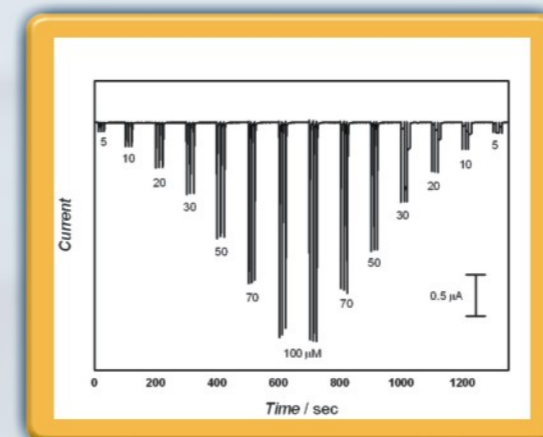
Aldehydes

⋮

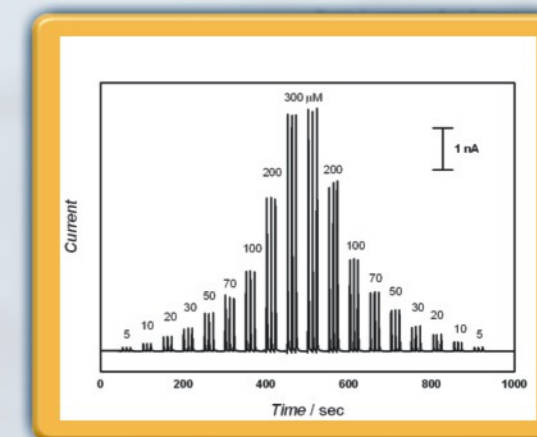


Flow Injection analysis (FIA)

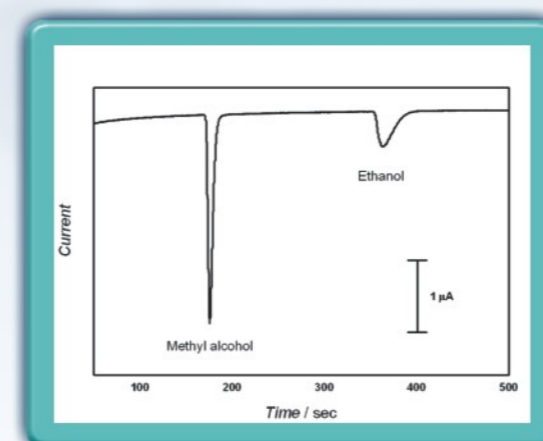
L-Ascorbic acid / SPE



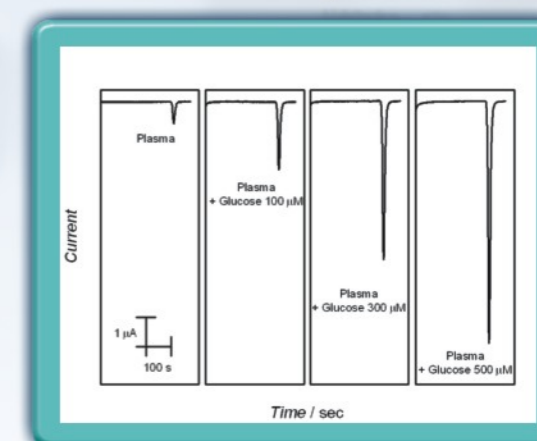
Dopamine / SPE



Alcohols / NCSE



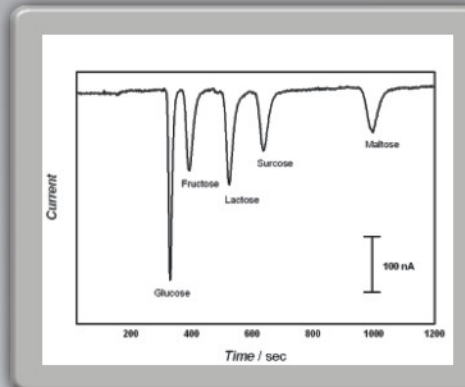
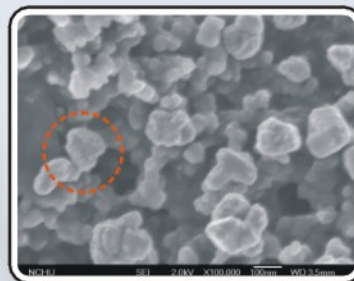
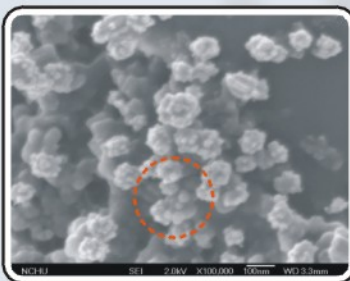
Glucose in blood plasma / NCSE



Screen-Printed Electrodes & Flow Cell

▶ Nano-Copper Modified Screen-Printed Electrode (NCSE)

Our patent pending NCSE is useful in electroanalysis of carbohydrates, amino acids, alcohols, aldehydes, etc.

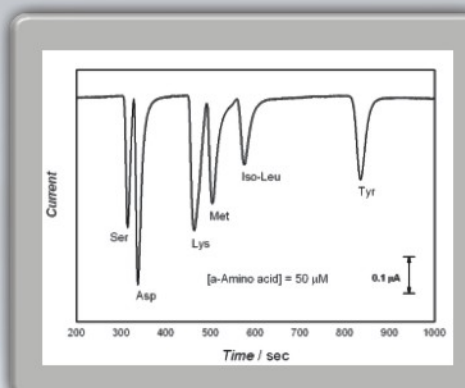


Compounds	Linear Range / μM	Detection limits / μM (ng)	RSD (n=30) / %	R ²
Fructose	5-1000	3.0 (2.70)	2.84	0.9958
Glucose	1-1000	0.5 (0.45)	4.80	0.9909
Lactose	5-1000	5.0 (8.56)	5.30	0.9908
Maltose	1-2000	1.0 (1.71)	3.97	0.9917
Sucrose	10-2000	5.0 (8.56)	6.45	0.9991

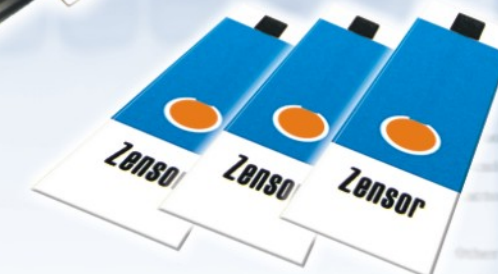
Carbohydrates
 Detector : Amperometric detector
 Electrode : NCSE 100
 Concentration : 20 μM
 Applied Potential : 600 mV (vs. Ag/AgCl)
 Mobile Phase : 0.1 M NaOH
 Column : Hamilton RCX-10 anion exchange,
 250 x 4.1 mm, 7 μm particle size
 Flow rate : 1 mL / min
 Injection Volume : 20 μL

▶ Amino Acids / NCSE

α -Amino acid	Linear range (μM)	R ²	Sensitivity (nA/ μM)	D ₅₀ (nM) (S/N=3)
Alanine (Ala)	5-500	0.9990	7.29	24
Arginine (Arg)	5-300	0.9960	5.97	587
Asparagine (Asn)	5-300	0.9998	11.68	94
Aspartic acid (Asp)	5-500	0.9951	5.98	693
Cysteine (Cys)	10-300	0.9955	6.41	875
Glutamic acid (Glu)	5-500	0.9901	4.9	624
Glycine (Gln)	5-500	0.9962	7.4	221
Glucose (Gly)	5-500	0.9996	2.83	161
Histidine (His)	5-500	0.9961	12.07	44
Iso-leucine (Iso-Leu)	5-500	0.9976	4.4	297
Leucine (Leu)	5-300	0.9978	7.44	231
Lysine (Lys)	5-500	0.9994	4.3	890
Methionine (Met)	5-500	0.9929	8.99	102
Phenyl alanine (Phe)	5-500	0.9991	7.62	472
Proline (Pro)	5-300	0.9988	3.7	545
Serine (Ser)	5-500	0.9914	7.58	393
Threonine (Thr)	5-500	0.9954	8.46	429
Tryptophan	5-500	0.9993	6.66	389
Tyrosine (Tyr)	5-500	0.9999	7.17	548
Valine (Val)	5-500	0.9992	4.21	574



Amino acids
 Detector : Amperometric detector
 Electrode : NCSE 100
 Concentration : 50 μM
 Applied potential : 0 V (vs. Ag/AgCl)
 Column : Silica-based, Preval organic acid 5 μm , Lot number 21402, Length 150mm
 ID 4.6 mm, Alltech
 Flow rate : $\mu\text{L}/\text{min}$
 Injection volume : 20 μL



Screen-Printed Electrodes & Flow Cell



Zensor Research & Development

▶ <http://www.zensor.com.tw>