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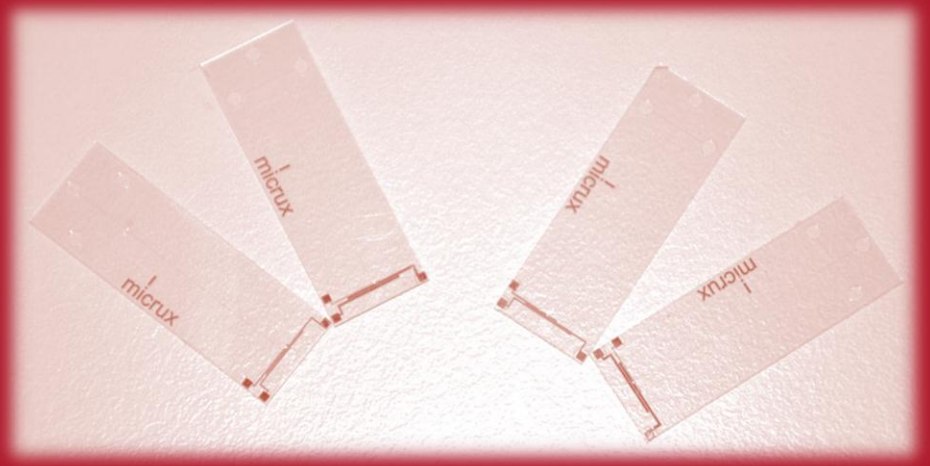
TECHNOLOGIES



SU-8/Pyrex Microchips

with integrated electrodes

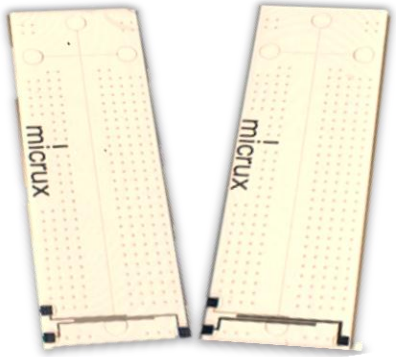
empresa innovadora de base tecnológica
reconocida por ANCES
eibt

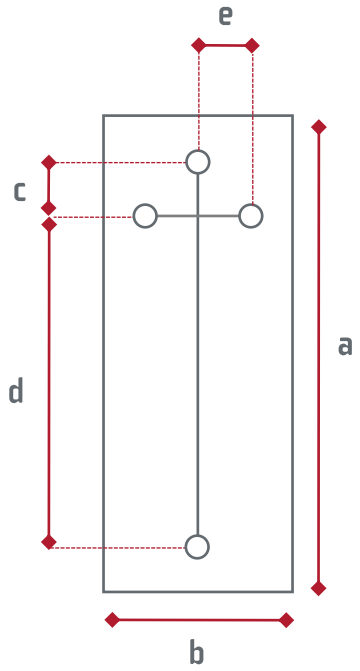
SU-8/Pyrex Microchips

» SU-8/Pyrex single-channel microchips

Two crossed microchannels fabricated on EPON SU-8 resin with integrated electrodes on Pyrex cover plate.

Highly resistant hybrid SU-8/Pyrex material for reusable microfluidic chips. Long life (over 1000 runs/injections) at minimal cost*.





Ref.	Channel Geometry (µm)		Access holes (mm)	Microchip dimensions (mm)				
	width	depth		a	b	c	d	e
MCE-SU8-xx00XT	50	20	2	38	13	5	30	5

*Depending of the experimental conditions and samples.

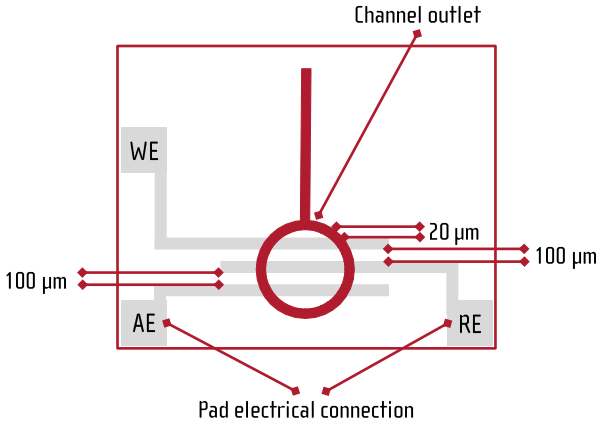
SU-8/Pyrex Microchips

» SU-8/Pyrex single-channel microchips

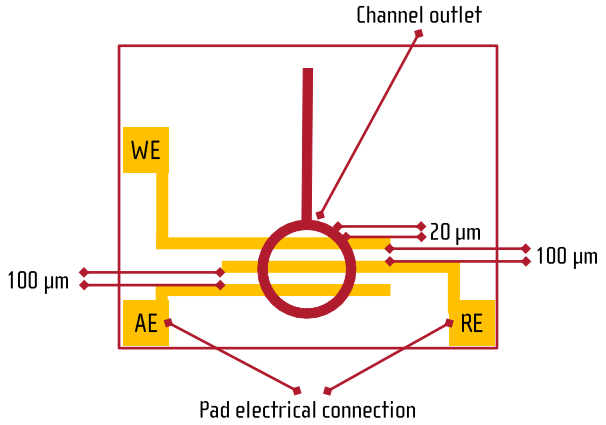
Integrated electrodes

The electrochemical detection (ED) system consists of three electrodes at the outlet of the separation channel.

» **Electrodes:** 50/150 nm titanium/platinum thin-film



» **Electrodes:** 50/150 nm chromium/gold thin-film



» **WE:** working electrode
» **RE:** reference electrode
» **AE:** auxiliary electrode

The end-channel electrochemical detector are placed 20 µm from the channel outlet.

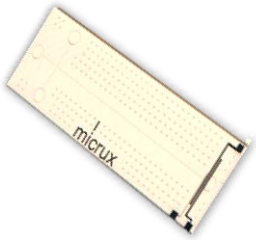
SU-8/Pyrex Microchips

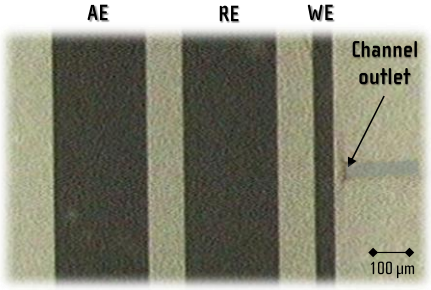
» SU-8/Pyrex single-channel microchips

Electrochemical detector designs

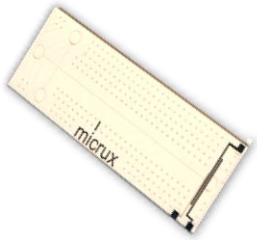
Electrodes are available in different designs and materials

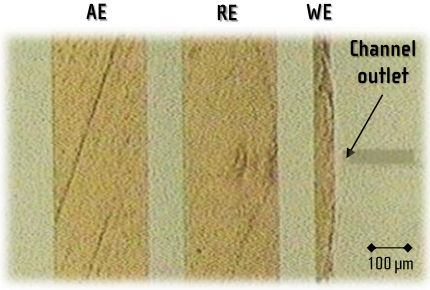
:: MCE-SU8-Pt001T



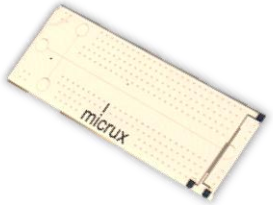


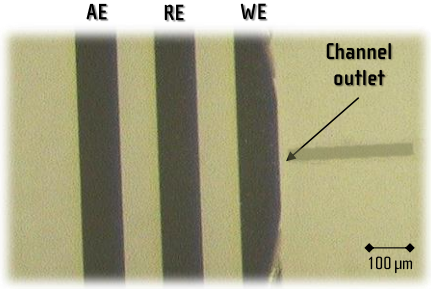
:: MCE-SU8-Au001T



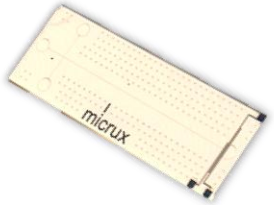


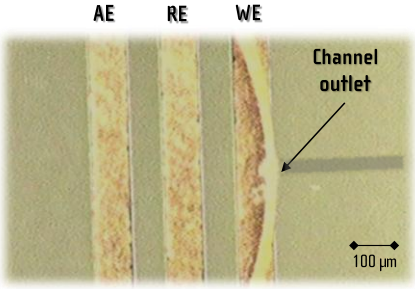
:: MCE-SU8-Pt002T





:: MCE-SU8-Au002T





Ref.	Electrode material	Electrochemical detector (µm)		
		WE	RE	AE
MCE-SU8-Pt001T	Platinum	50	250	250
MCE-SU8-Pt002T	Platinum	100	100	100

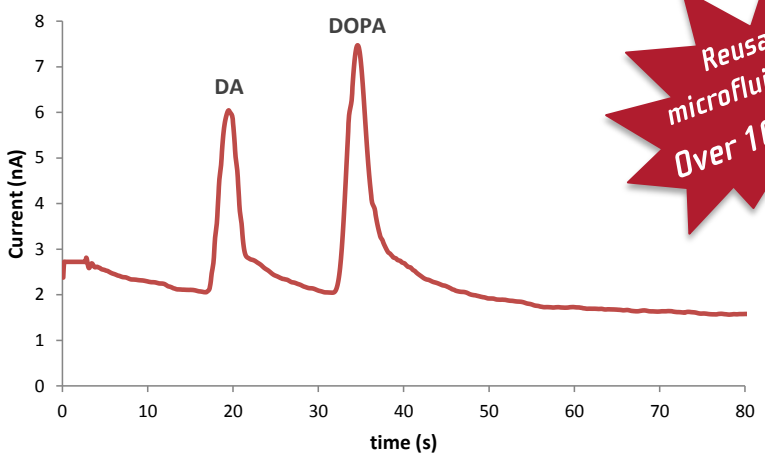
Ref.	Electrode material	Electrochemical detector (µm)		
		WE	RE	AE
MCE-SU8-Au001T	Gold	50	250	250
MCE-SU8-Au002T	Gold	100	100	100

SU-8/Pyrex Microchips

» SU-8/Pyrex single-channel microchips

Separation of neurotransmitters dopamine (DA) and DOPA performed using a **SU-8/Pyrex microchip** in combination with the microchip holder (*ref. ENC-SU8-01*) and MicruX® HVStat instrument (*ref. HVSTAT2010*).

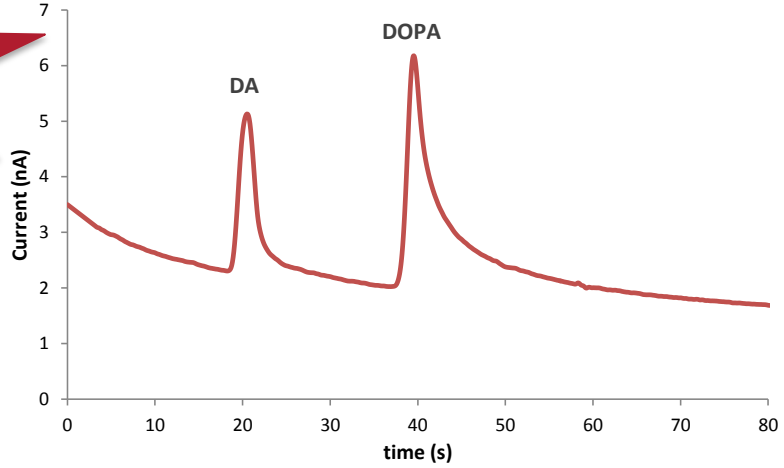
:: MCE-SU8-Pt001T



Electropherogram for the separation of 100 µM DA and 500 µM DOPA using a SU-8/pyrex single-channel microchip with ***platinum-based electrodes****. Conditions: Running buffer: 25 mM MES-His pH = 6.0; V_{inj} = +750 V for 5s, V_{sep} = +1000 V, E_d = +0.75 V (vs. Pt)*

Reusable microfluidic chips
Over 1000 runs!!

:: MCE-SU8-Au001T

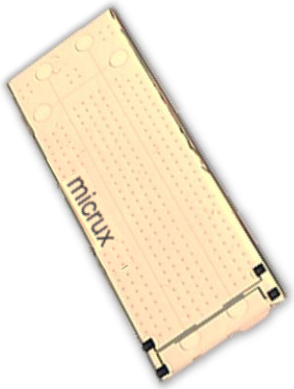


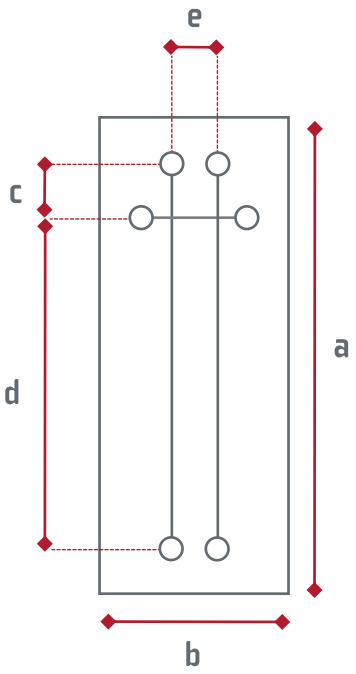
Electropherogram for the separation of 100 µM DA and 500 µM DOPA using a SU-8/pyrex single-channel microchip with ***gold-based electrodes****. Conditions: Running buffer: 25 mM MES-His pH = 5.9; V_{inj} = +750 V for 3s, V_{sep} = +1000 V, E_d = +0.75 V (vs. Au)*

SU-8/Pyrex Microchips

» SU-8/Pyrex dual-channel microchips

Two parallel microchannels fabricated on EPON SU-8 resin with integrated electrodes on Pyrex cover plate





Ref.	Channel Geometry (µm)		Access holes (mm)	Microchip dimensions (mm)				
	width	depth		a	b	c	d	e
MCE-SU8-Pt003TT	50	20	2	38	13	5	30	5

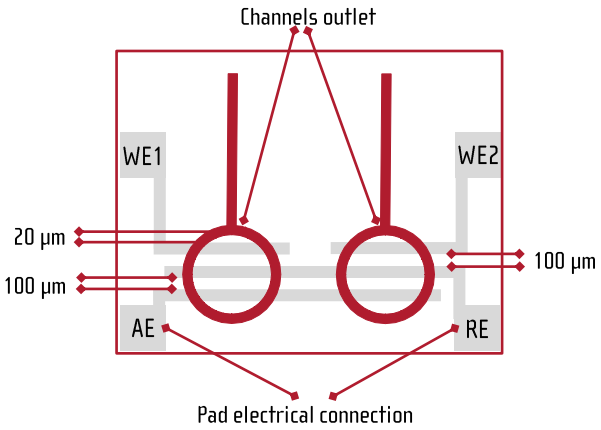
SU-8/Pyrex Microchips

» SU-8/Pyrex dual-channel microchips

Integrated electrodes

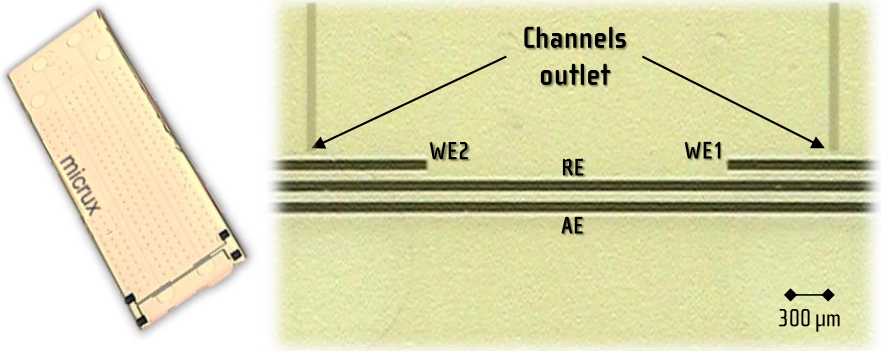
The electrochemical detection (ED) system consists of four electrodes at the outlet of the separation channel.

» **Electrodes:** 50/150 nm titanium/platinum thin-film



» **WE:** working electrode
» **RE:** reference electrode
» **AE:** auxiliary electrode

:: *MCE-SU8-Pt003TT*



Ref.	Electrode material	Electrochemical detector (µm)		
		WE1/WE2	RE	AE
MCE-SU8-Pt003TT	Platinum	100	100	100

The end-channel electrochemical detector are placed 20 µm from the channel outlet.

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