



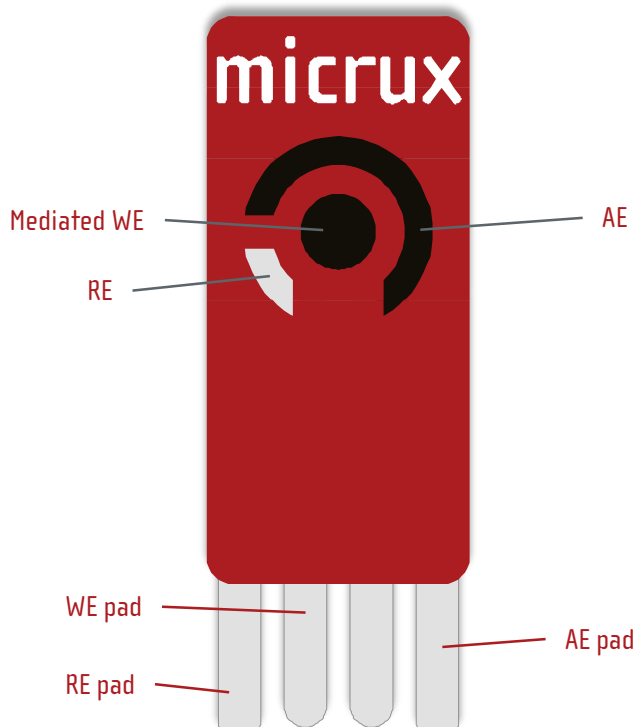
Thick-film Carbon Mediated Electrodes



Carbon-mediated electrodes (*ED-51PE-C20/MED*) are fabricated by **printing technologies** on a flexible and high-resist PET substrate. These low-cost and disposable electrochemical sensors enable the use of **small sample volume**.

» Thick-film based-electrode features

Printing technologies enable the manufacture of planar electrodes suitable for working with sample microdrop.



» Standard dimensions:	27.5 x 10.1 mm
» Substrate:	PET (white)
» Substrate thickness:	350 µm
» WE dimensions:	3 mm Ø (7,1 mm ²)
» Sample volume:	20 – 50 µL
» Electrode material	
Working electrode (WE):	Carbon/Mediator*
Reference electrode (RE):	Silver
Auxiliary electrode (AE):	Carbon

*Mediator: FeCN (Potassium Ferrocyanide), PB (Prussian Blue), CoPc (Cobalt (II) Phthalocyanine)

» Thick-film electrode packs

Thick-film S1PE mediated electrodes are supplied in **50 units packs**. They should be stored at room temperature in a dry place.

» Applications

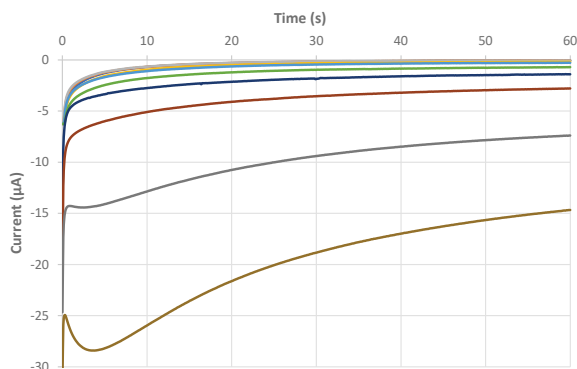
Printed electrodes are a suitable tool for **multiple applications**, providing many advantages such as low-cost, disposable, low reagent consumption as well as non-tedious pre-cleaning procedures.

Carbon-mediated electrodes have been optimized to provide superior electrochemical performance, enabling the detection of many analytes when used in conjunction with specific **oxidase type enzymes**. These **mediated-electrodes** are suitable for improving the detection of **hydrogen peroxide** and the development of **enzyme-based biosensors**.

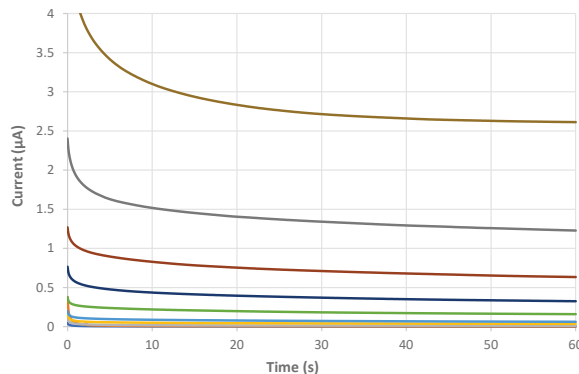


» Thick-film mediated-electrodes performance

» BATCH ANALYSIS

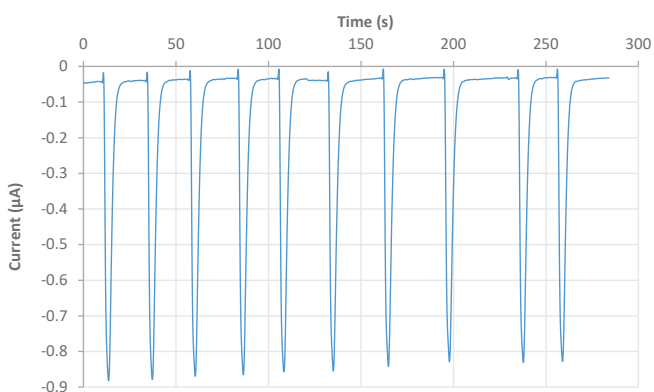


Amperometric response for 10 μM to 5 mM H_2O_2 using different thick-film Carbon/Prussian Blue electrodes (ED-51PE-C20/PB). $E_d = -0.1$ V, BGE: PBS pH = 7.4.

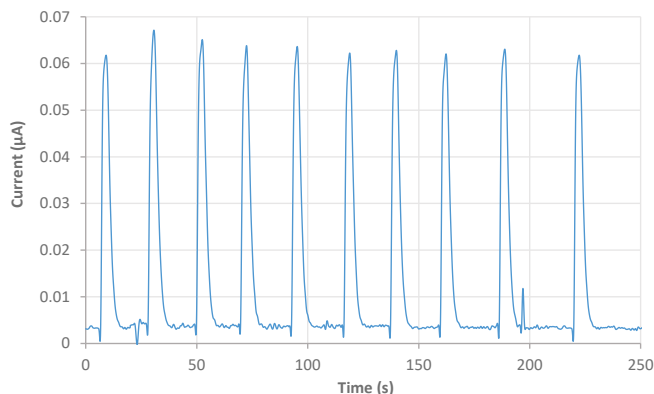


Amperometric response for 1 μM to 5 mM H_2O_2 using different thick-film Carbon/Cobalt Phthalocyanine electrodes (ED-51PE-C20/CoPc). $E_d = +0.4$ V, BGE: PBS pH = 7.4.

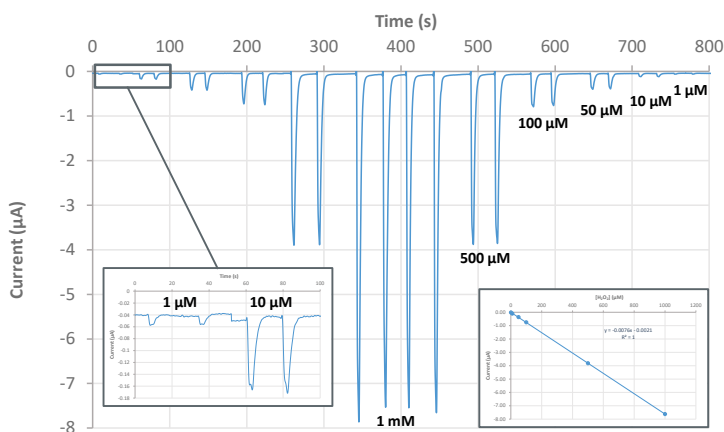
» FIA SYSTEM



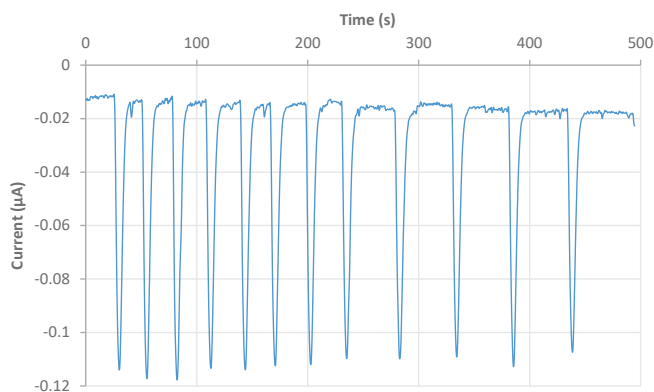
Successive injections of 100 μM H_2O_2 in a FIA system using a thick-film Carbon/Prussian Blue electrode (ED-51PE-C20/PB). $E_d = -0.1$ V, flow rate: 2 mL/min, carrier: PBS pH = 7.4. RSD = 3.0% ($n = 10$)



Successive injections of 100 μM H_2O_2 in a FIA system using a thick-film Carbon/Cobalt Phthalocyanine electrode (ED-51PE-C20/CoPc). $E_d = +0.4$ V, flow rate: 2 mL/min, carrier: PBS pH = 7.4. RSD = 2.5% ($n = 10$)



Amperometric response for 1 μM to 1 mM H_2O_2 in a FIA system using a thick-film Carbon/Prussian Blue electrode (ED-51PE-C20/PB). $E_d = -0.1$ V, flow rate: 2 mL/min, carrier: PBS pH = 7.4.



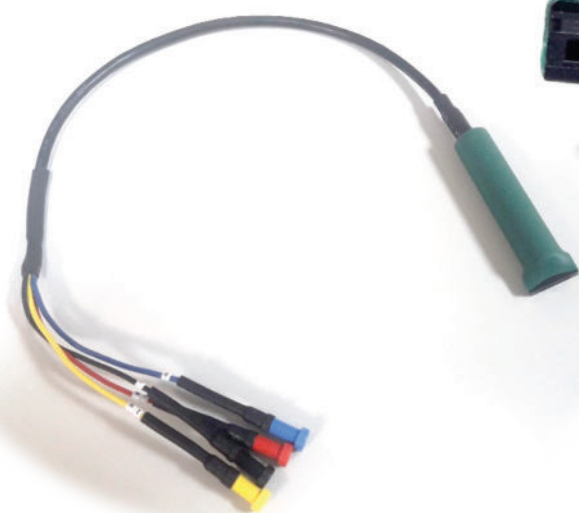
Successive injections of 100 μM H_2O_2 in a FIA system using a thick-film Carbon/Potassium Ferrocyanide electrode (ED-51PE-C20/FeCN). $E_d = -0.1$ V, flow rate: 1 mL/min, carrier: PBS pH = 7.4. RSD = 4.5% ($n = 12$)



» Thick-film electrodes related accessories

Different **connectors** for interfacing the printed electrodes with any commercial potentiostat are also available at MicruX.

» CABLE connector (ED-SPE-CABLE)



The **CABLE connector** (*Ref. ED-SPE-CABLE*) provides an interface between the electrodes (up to four contact pads) with the potentiostat, enabling the use of microvolume (20 – 50 μ L sample drops) or dipping into a solution. The cable ends are available with **2 mm female or male bananas**.

Dimensions: 50 cm long

» BOX Connector (ED-SPE-BOX)



The small **BOX connector** (*Ref. ED-SPE-BOX*) provides an interface between the electrodes (up to four contact pads) with any kind of potentiostat, enabling the use of microvolume (20 – 50 μ L sample drops). The interface ends are available with **2 mm female bananas**.

Dimensions: L58 x W40 x H15 mm



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