

# Lab tape caster

## *For in house cell fabrication*

### Reproducible and accurate tape casting

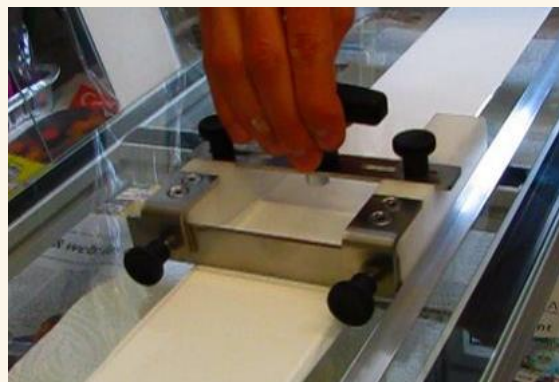
In order to answer the need for in house fabrication of cells and ceramic substrates, Fiaxell has developed a lab tape caster that allows the production of substrates for electrolyte and anode supported cells.

Double casting is also possible with an adapted doctor blade in order to cast simultaneously the anode support and the thin electrolyte.

Accurate and reproducible tapes can be produced, with  $\pm 20 \mu\text{m}$  of thickness over a tape 200 mm of width and 1000 mm length.

The tape caster kit is delivered with an aluminium chassis and a doctor blade with adjustable width and height.

The aluminium chassis allows the levelling of the glass plate and the use of Mylar sheet, that can be stretched thanks to a gripping mechanism. Several tapes can be produced and stacked for drying.



*The tapes are cast on substrates (glass plate, Mylar sheets, etc.) hold on an aluminium frame that is levelled thanks to its 4 adjustable feet*



### Adjustable doctor blade

The doctor blade comes in two different sizes with adjustable widths. This allows tape widths from 30 to 250 mm (picture on left).

To adjust the blade gap, two sets of calibrated wedges are included. The blade height can then be simply and quickly fixed from 50  $\mu\text{m}$  to 1 mm.

### Drying and tape cutting

No special equipment is required for drying. Several tapes can be produced and stacked for drying thanks to spacers. The tape can be cut simply with hollow punches. Cells with holes for internal manifolding can be made without the help of laser cutting.

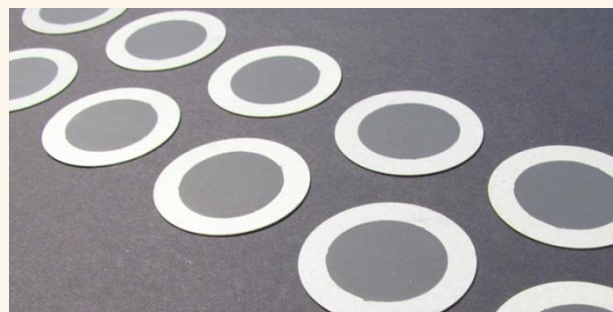
*Thanks to the two sets of stainless steel fixtures, tapes from 30 to 250 mm width can be cast*

### Tape caster specification

All pieces of the doctor blade (POM skates, stainless steel blades, guides) are laser cut. The chassis is made from anodized aluminium profiles, making it easy to assemble and deliver. The profiles are complemented with anti-sliding rubber for a smooth and stable operation. Mylar or other material (PP, steel, etc.) sheet can be easily stretched thanks to a dedicated mechanism.

### Slurry preparation

Raw materials, chemicals and labware are available with the tape caster (see ceramic processing). Fiaxell is also providing ready to cast slurries (water or organic based). For degassing the slurry before casting, a Venturi pump is included in the tape caster set.



*Cell fabrication is straightforward and inexpensive with the lab tape caster. See next page for ceramic processing equipment*