

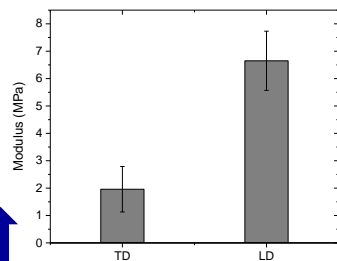
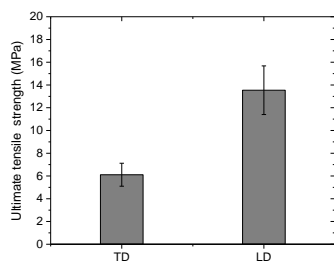
# Preparation of ePTFE tubes for application as vascular implant

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PTFE (first patented in 1937 as Teflon), has been considered as vascular graft since 1969 on the account of a relatively inert nature. ePTFE, a microporous material that is supportive of tissue adhesion, is manufactured through extruding, stretching, and heating process. The PTFE molecule is biostable, and the graft made from it does not undergo biological deterioration within the body. Presence of fluorine at surface of ePTFE minimizes its reaction with blood components.

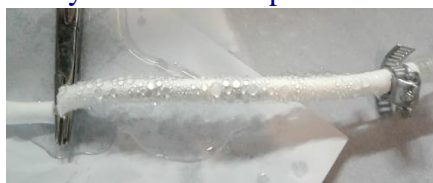
In our group, ePTFE tubes are manufactured through thermo-mechanical stretching of an extruded polymer tube, in the form of a non-woven porous structure of nodes-fibrils domains.



Longitudinal(LD) and transverse(TD, with respect to the stretching direction,) mechanical properties of the tubular porous PTFE structures



Kink resistance of the ePTFE tubular structures of our group in comparison with a commercially available sample



Burst resistance of ePTFE tubes at 70kPa



Suturability of the ePTFE tubes



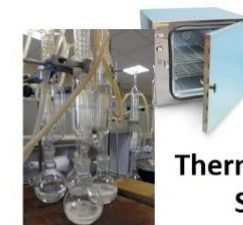
Mixing



Billet forming



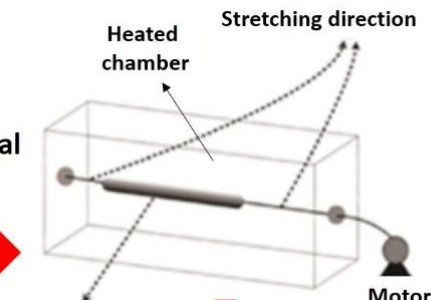
Ram extrusion



Oil extraction optional



Thermo-mechanical Stretching/ Shape fixation



PTFE tube



Vascular graft

Processing of PTFE fine powder into porous ePTFE tubes

Porous structure of ePTFE consists of a node-fibril structure

