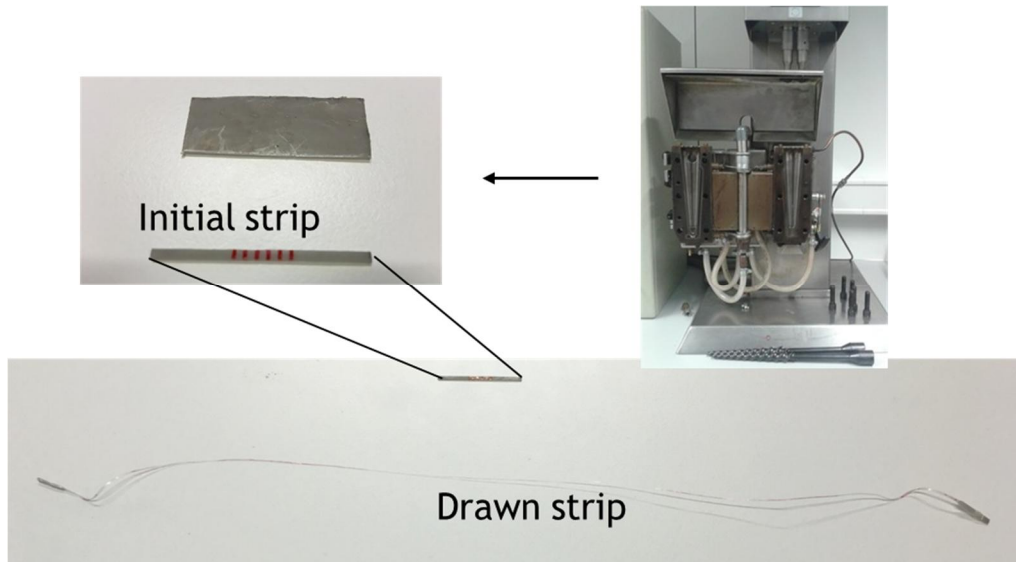


## Report for experiment 26-02-843

Samples were prepared by:

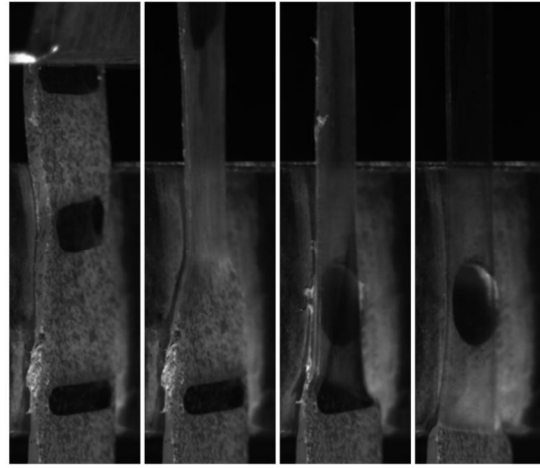
- 1) Mixing UHMWPE and decalin on a mini-extruder
- 2) Casting of gel
- 3) Evaporating of the solvent



Strips with a width of about 1mm were cut out of the dried UHMWPE film.

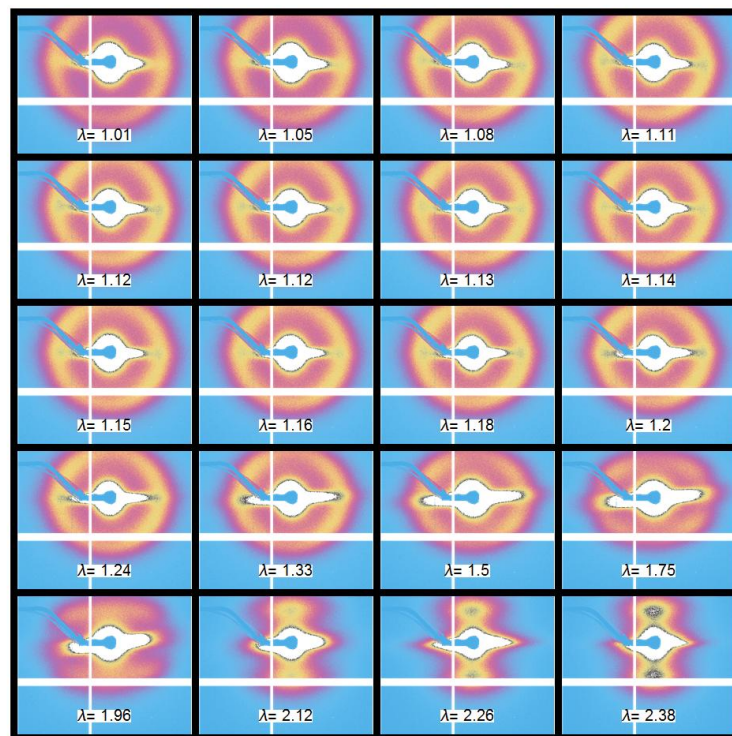
For studying the morphological changes happening during drawing, thus prepared samples were loaded into a tensile device equipped with a "hot shoe" and deformed with in-situ XRD.

The device, mounted at DUBBLE, is shown below together with images of the samples during the deformation experiments.



1723\_ann

SAXS images acquired during the experiment are reported in the figure below (as function of draw ratio,  $\lambda$ )



These images show that during drawing, the crystalline morphology drastically changes from isotropic to highly oriented. Details of this transformation are still under investigation via modeling of the SAXS data and corroboration with other techniques (Raman, TEM).