

Laboratory for Polymer Processing

Fields of Work

thermoplastic polymer compounds

polymer nanocomposites

polymer foams

recycled polymer blends

physically and reactive compounding

design of compounding processes

die-extrusion and injection moulding

rheology of polymer melts

Equipment:

*Twin screw extruder Brabender
DSE35/17D, counter rotating*

*Single screw extruder Brabender
Plastograph, 30 mm / 25D*

*Single screw extruder PS-45 Esmos
AD, 45 mm / 25D*

Strand die/pelletizer

Cast film with flat die $b=140$ mm

Vibration mixing die

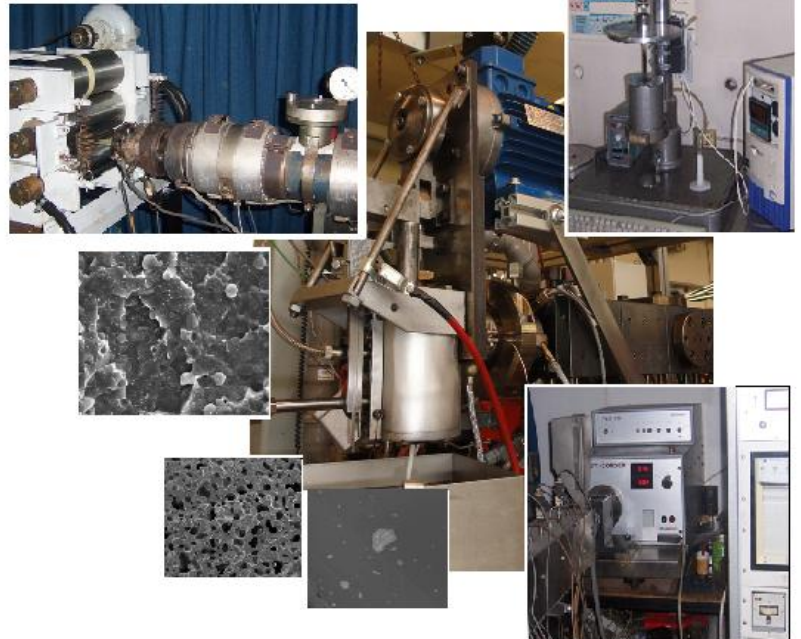
*Injection molding machine KuASY
25x35*

*Tools for test specimens according
EN ISO 527*

*Mini Test Hydraulic Press with
working width, 80x80 mm*

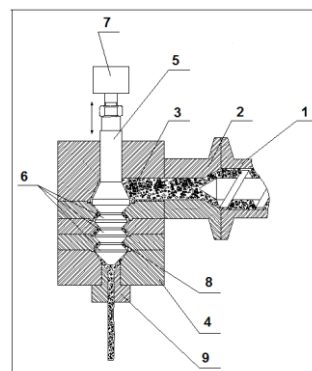
Cutting machine Vespa, 50kg/h

*MFI – Test, IIPT adapted as capillary
rheometer*



Vibration mixing die

The molten polymer composite is subjected on continuously changing shear and extensional deformations created by vibrations of a moveable mandrel. A combination of extensional flow with vibration field during extrusion is expected to achieve break up of the agglomerates of nanofillers and improve the dispersion of nanoparticles in polymer matrix.



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