



MICRO-FIBRILLAR FIBRES ON BASIS OF THERMOPLASTIC BIO-POLYMERS PRODUCED BY MELT-SPINNING

H. Brünig*, C. Hinüber, P. Wiedemann

Leibniz Institute of Polymer Research Dresden, Hohe Straße 6, D-01069 Dresden, Germany

*Corresponding author: bruenig@ipfdd.de

Thermoplastic bio-polymers represent a relatively new class of melt spinnable polymers. Our attention has been directed to poly(3-hydroxybutyric acid) (PHB) and poly(lactide acid) (PLA) because of their thermoplastic processability, their biodegradability and biocompatibility.

Blends of these polymers were made together with the water soluble thermoplastic material polyvinyl alcohol (PVA). The PHB/PVA and PLA/PVA blends has been melt spun by means of our piston-type spinning equipment to produce single fibres and hollow fibres with various diameters in the range of 30-100 μm . After dissolving the PVA component, the micro-fibrillar structure of the fibres in the range $< 1 \mu\text{m}$ can be obtained. The aim of the study is the fabrication and functionalization of ultra fine and porous fibre structures for textile scaffolds and tissue engineering to improve cell adhesion and growth.