

Analyzing, understanding and improving materials

Maastricht University has worked to understand different aspects of composite materials consisting of a liquid crystalline polymer (LCP) and poly (lactide) (PLA). In Bio4Self composites of different LCP's and PLA have been prepared and studied. Some of the used LCP's were fossil-based and commercially available, others were synthesized in-house and potentially bio-based. By combining information obtained via various analytical techniques, we have formed an understanding of the parameters governing various properties.

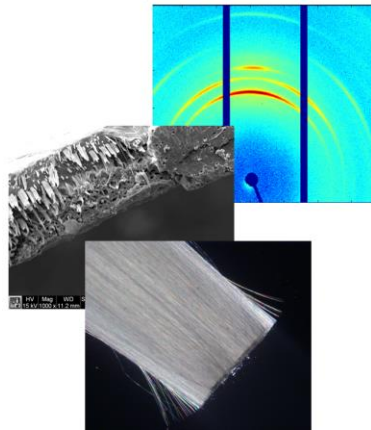
Composite material

- Liquid crystalline polymer
- Poly (lactide)



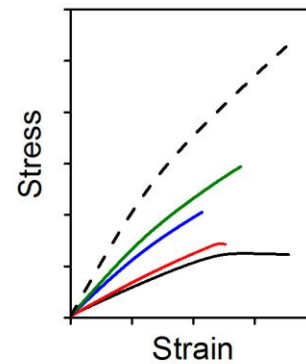
Analysis

- Wide angle X-ray diffraction
- Scanning electron microscopy
- Polarized optical microscopy



Understanding and relating

- Material mechanical response
- Crystallization behavior
- Material morphology



We have been able to gain considerable insight in the mechanisms influencing the crystallization behavior, mechanical response and morphology of these interesting composite materials. The aim is to use this knowledge to improve and potentially tune the material properties, allowing a broader scope of possible applications.