

Advanced Materials Research Group

project summary

Project Title	Developing a novel technique for manufacturing a continuous fibre thermoplastic bioresorbable composite: in-situ polymerization of poly-ε-caprolactone and polylactic acid.
Researcher	Menghao Chen Supervisor: Prof. Chris Rudd, Dr. Ifty Ahmed, Dr. Derek Irvine Email: eaxmc@nottingham.ac.uk
Project Summary	<p>The aim of this project will be to establish an in situ polymerisation process for pla. the objectives will include:</p> <ul style="list-style-type: none"> A. development of the monomer chemical reaction and catalysts to be used to establish the in-situ polymerisation technique for pla based composites. this work will be conducted in conjunction with the chemical engineering dept. B. develop a prototype of an in-situ polymerization technique for pla composites based on the mtm and srtm techniques used for pcl composites. C. manufacture different volume fraction samples and shaped composites based on the in situ polymerization technique and characterize the samples mechanically. the biocomposites group has recently acquired a fatigue testing machine equipped with environmental chamber to test samples wet at 37°C. this has never been done before and this data will be a significant step forward in predicting the properties of the composites produced over many cycles. D. predict mechanical properties via fe modelling and compare with actual data obtained.

