
Advanced Materials Research Group

project summary

Project Title	Manufacture of Yarns and Textiles from Novel Resorbable Phosphate-Based Glasses
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Project Summary	<p>I started my PhD at the University of Nottingham within the Bio-composites Group in October this year (2013). Our group project involves the development of resorbable composites for medical applications. My main task is to investigate production of yarns and textiles from novel phosphate-glass fibres (PGF) with new and novel coating agents. Current single filament fibre production drastically limits the use of PGF as they cannot be re-wound and, as such, are limited in terms of architecture produced – typically only non-woven random fibre mats.</p> <p>In this academic year (13/14), I will manufacture and characterize phosphate-based glasses (PBG) and fibres at the facilities of the University of Nottingham. I will also investigate the TexGen software, which will be used for modelling of textiles.</p> <p>Then, in the following three years, from 2014 to 2017, I will carry on my project in Nanjing, China. The main task in Nanjing is to demonstrate the advantages of utilising PGFs as replacements for silicate based glasses by developing textiles from fibres produced utilising a pilot scale plant (Sinoma Ltd). The proposed fibre pilot plant facility has the potential to complete the missing link in the supply chain for low energy cost, high-strength, fully resorbable PGF technical textiles.</p>