**142aq Combinatorial Studies of Phase Behavior in Polyanhydride Blends**

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Combinatorial strategies have been developed to study the phase behavior of biodegradable polyanhydrides for drug and protein delivery applications. The polyanhydrides of interest are poly[1,6-bis(p-carboxyphenoxy) hexane] (CPH) and poly[sebacic anhydride] (SA). Both continuous and discrete polymer blend libraries were fabricated by using a combination of solution-based gradient deposition and rapid prototyping. To obtain phase diagrams of CPH/SA, the effect of blend composition and annealing temperature on the miscibility of the blend was studied. In the continuous study, thin film polymer libraries employing linear composition gradients were annealed isothermally. This gradient library was observed with optical microscopy in order to determine cloud points. These results were compared with SAXS studies on discrete libraries, which contained previously specified blend compositions.