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## Enhancement of Thermomechanical Properties of Poly(D, L-lactic-co-glycolic acid) and Graphene Oxide Composite Films for Scaffolds

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Thermomechanical and surface chemical properties of composite films of poly(D, L-lactic-co-glycolic acid) (PLGA) were significantly improved by the addition of graphene oxide (GO) nanosheets as nanoscale fillers to the PLGA polymer matrix. Enhanced thermomechanical properties of the PLGA/GO (2 wt.%) composite film, including an increase in the crystallization temperature and reduction in the weight loss, were observed. The tensile modulus of a composite film with increased GO fraction was presumably enhanced due to strong chemical bonding between the GO nanosheets and PLGA matrix. Enhanced hydrophilicity of the composite film due to embedded GO nanosheets also improved the biocompatibility of the composite film. Improved thermomechanical properties and biocompatibility of the PLGA composite films embedded with GO nanosheets may be applicable to biomedical applications such as scaffolds.

**Keywords:** Graphene oxide (GO) nanosheets, Composite films, Thermomechanical properties, Scaffolds