

Efficient Universal Method for Smart Graphene Paper Fabrication, and Its Application for Stem Cell Supporting

Abstract:

We have developed such a biomaterial, namely smart graphene-cellulose (G-C) paper and it's suitable for human cell support, verified by adipose-derived stem cell (ADSC) culture and osteogenic differentiation. Meanwhile, G-C papers can be configured to 3D constructs by lamination with cell-encapsulated alginate and further modifying by folding and rolling for conductive 3D "origami-inspired" cell-laden structures. All these structures show great promise for bone tissue engineering application.