FIBER-REINFORCED HYDROGEL COMPOSITES AND METHODS OF FORMING FIBER-REINFORCED HYDROGEL COMPOSITES

ABSTRACT

A fiber-reinforced hydrogel composite is provided. The composite includes a hydrogel and a fibrous component containing a plurality of fibers. Length of each of the plurality of fibers is less than about 1,000 μm. A method of preparing a fiber-reinforced hydrogel composite is also provided. The method includes coating a hydrogel precursor solution on a substrate to form a hydrogel precursor film, depositing the plurality of fibers onto the hydrogel precursor film, and allowing the hydrogel precursor film to form a hydrogel film, thereby forming the fiber-reinforced hydrogel composite. A scaffold containing the fiber-reinforced composite, and a tissue repair method using the fiber-reinforced composite are also provided.

FIG. 1