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(54) Title: A COMPOSITE, SCAFFOLD AND APPLICATIONS THEREOF

(57) Abstract: The present disclosure relates to the field of biomaterials, tissue engineering and regenerative medicine. Particularly, the present disclosure relates to biomaterial composite and preparation of various scaffold formats using the composite. The disclosure provides for preparation of biomaterial composite comprising silk fibroin and melanin, preparation of scaffolds with the biomaterial composite and its applications in tissue engineering, electrotherapy applications and regenerative medicine. In some embodiments, the silk fibroin is a peptide modified silk fibroin. The biomaterial composite of the present disclosure exhibits various advantages including but not limiting to enhanced antioxidant property, superior electroactive properties, improved myogenic cell differentiation, better cell growth and regeneration, and enhanced cell adhesion property.



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INTERNATIONAL SEARCH REPORT

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Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2016/024464 A1 (JOHANSSON JAN [SE] ET AL) 28 January 2016 (2016-01-28)	14-21
A	page 1, paragraph 0002; claims page 2, paragraphs 0297, 0304 page 9, paragraph 0364 - paragraph 0366 example 10	1-13
A	----- DAN KAI ET AL: "Biocompatibility evaluation of electrically conductive nanofibrous scaffolds for cardiac tissue engineering", JOURNAL OF MATERIALS CHEMISTRY B, vol. 1, no. 17, 1 January 2013 (2013-01-01), page 2305, XP055374234, GB ISSN: 2050-750X, DOI: 10.1039/c3tb00151b abstract -----	1-13
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
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INTERNATIONAL SEARCH REPORT

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		CN 102946914 A	27-02-2013
		DK 2558137 T3	03-07-2017
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