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個人研究

期刊論文 (近五年)

- **S.W. Tsai**, Y.W. Hsu, W.L. Pan, F.Y. Hsu, The Effect of Strontium-Substituted Hydroxyapatite Nanofibrous Matrix on Osteoblast Proliferation and Differentiation, *Membranes* 11 (624) (2021)
- S.Y. Cheng, Y.L. Chiang, Y.H. Chang, H. Thissen, **S.W. Tsai**, An aqueous-based process to bioactivate poly(ϵ -caprolactone)/mesoporous bioglass composite surfaces by prebiotic chemistry-inspired polymer coatings for biomedical applications, *Colloids and Surfaces B: Biointerfaces* 205 (2021) 111913
- J.W. Liaw, C.Y. Kuo, **S.W. Tsai**, The Effect of Quasi-Spherical Gold Nanoparticles on Two-Photon Induced Reactive Oxygen Species for Cell Damage, *Nanomaterials* 11 (1180) (2021)
- **S.W. Tsai**, S.S. Huang, W.X. Yu, Y.W. Hsu, F.Y. Hsu, Collagen scaffolds containing hydroxyapatite-CaO fiber fragments for bone tissue engineering, *Polymers* 12(5) (2020).
- S.M. Wei, M.Y. Pei, W.L. Pan, H. Thissen, **S.W. Tsai**, Gelatin hydrogels reinforced by absorbable nanoparticles and fibrils cured in situ by visible light for tissue adhesive applications, *Polymers* 12(5) (2020).
- **S.W. Tsai**, W.X. Yu, P.A. Hwang, Y.W. Hsu, F.Y. Hsu. Fabrication and characteristics of PCL membranes containing strontium-substituted hydroxyapatite nanofibers for guided bone regeneration, *Polymers* 11(11) (2019).
- Y.C. Huang, K.F. Lei, J.W. Liaw, **S.W. Tsai**, The influence of laser intensity activated plasmonic gold nanoparticle-generated photothermal effects on cellular morphology and viability: a real-time, long-term tracking and monitoring system. *Photochemical & photobiological sciences*. DOI 10.1039/C9PP00054B. (2019).
- **S.W. Tsai**, Y.L. Yu, F.Y. Hsu, Fabrication of polycaprolactone tubular scaffolds with an orthogonal-bilayer structure for smooth muscle cells. *Materials science & engineering. C, Materials for biological applications* 100 (2019) 308-314.
- **S.W. Tsai**, W.X. Yu, P.A. Hwang, S.S. Huang, H.M. Lin, Y.W. Hsu, F.Y. Hsu, Fabrication and Characterization of Strontium-Substituted Hydroxyapatite-CaO-CaCO₃ Nanofibers with a Mesoporous Structure as Drug Delivery Carriers, *Pharmaceutics* 10(4) (2018) 179.

-
- **S.W. Tsai**, S.S. Huang, W.X. Yu, Y.W. Hsu, F.Y. Hsu, Fabrication and characteristics of porous hydroxyapatite–CaO composite nanofibers for biomedical applications, *Nanomaterials* 8(8) (2018).
 - W.T. Ma, S.R. Kumar, C.T. Hsu, C.M. Shih, **S.W. Tsai**, C.C. Yang, Y.L. Liu, S.J. Lue, Magnetic field–assisted alignment of graphene oxide nanosheets in a polymer matrix to enhance ionic conduction, *Journal of Membrane Science* 563 (2018) 259–269.
 - F.Y. Hsu, H.W. Hsu, Y.H. Chang, J.L. Yu, L.R. Rau, **S.W. Tsai**, Macroporous microbeads containing apatite–modified mesoporous bioactive glass nanofibres for bone tissue engineering applications, *Materials Science and Engineering C* 89 (2018) 346–354.
 - Y.N. Zeng, Y.L. Kang, L.R. Rau, F.Y. Hsu, **S.W. Tsai**, Construction of cell–containing, anisotropic, three–dimensional collagen fibril scaffolds using external vibration and their influence on smooth muscle cell phenotype modulation, *Biomedical Materials (Bristol)* 12(4) (2017).
 - S.Y. Yu, H. Gunawan, **S.W. Tsai**, Y.J. Chen, T.C. Yen, J.W. Liaw, Single–crystalline gold nanowires synthesized from light–driven oriented attachment and plasmon–mediated self–assembly of gold nanorods or nanoparticles, *Scientific Reports* 7 (2017).
 - **S.W. Tsai**, Y.H. Chang, J.L. Yu, H.W. Hsu, L.R. Rau, F.Y. Hsu, Preparation of nanofibrous structure of mesoporous bioactive glass microbeads for biomedical applications, *Materials* 9(6) (2016).
 - L.R. Rau, S.W. Tsao, J.W. Liaw, **S.W. Tsai**, Selective Targeting and Restrictive Damage for Nonspecific Cells by Pulsed Laser–Activated Hyaluronan–Gold Nanoparticles, *Biomacromolecules* 17(8) (2016) 2514–2521.
 - L.R. Rau, W.Y. Huang, J.W. Liaw, **S.W. Tsai**, Photothermal effects of laser–activated surface plasmonic gold nanoparticles on the apoptosis and osteogenesis of osteoblast–like cells, *International Journal of Nanomedicine* 11 (2016) 3461–3473.
 - C.E. Lin, L.R. Rau, J.W. Liaw, F.Y. Hsu, **S.W. Tsai**, Biocompatibility analysis of NIH/3T3 cells exposed to silica–coated silver and silver nanoparticles, *Nanoscience and Nanotechnology Letters* 8(12) (2016) 1080–1088.
 - C.Y. Lee, K.F. Lei, **S.W. Tsai**, N.M. Tsang, Development of graphene–based sensors
-

on paper substrate for the measurement of pH value of analyte, Biochip Journal 10(3) (2016) 182-188.

專利

- “Method for preparing composite of crosslinking hyaluronic acid and protein” Taiwan patent 197083, Date of Patent February 1, 2004
 - “Polysaccharide materials cross-linked by epoxy compound” Taiwan patent 197074, Date of Patent February 1, 2004
 - ” Method for preparing microsphere composite of collagen and bioceramic powder” US patent 6752938, Date of Patent June 22, 2004; Taiwan patent 175012, Date of Patent March 21, 2003
 - ” Method for producing water insoluble polysaccharides” US patent 6852255, Date of Patent February 8, 2005; Taiwan patent 207252, Date of Patent June 21, 200
 - “Method for preparing double cross-linking hyaluronic acid matrix” Taiwan patent I 201596, Date of Patent March 21, 2006
 - “High-throughput perfusion-based micro-bioreactor platform capable of providing tunable dynamic compression force to cells” Taiwan patent I 379000, Date of Patent December 11, 2012;
 - US patent 8980624 B2 “Apparatus for high-throughput cell culture with mechanical compression stimulation” Date of Patent Mar.17, 2015.
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