Lian Cen

Department: School of Chemical Engineering
Professional field: Chemical engineering, Chemical and biomolecular engineering
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Profile

Educational Background:
01/2001- 12/2003 Ph.D., Chemical and Biomolecular Engineering, National University of Singapore (NUS), 2003.
09/1996- 07/2000 B.Sc., Chemical Engineering, East China University of Science and Technology (ECUST), 2000.
Professional Experience:
09/2014-Present, Professor, School of Chemical Engineering, ECUST
06/2012--- 08/2014, Associate Professor, School of Chemical Engineering, ECUST
08/2006--- 05/2012 Principle Investigator, National Tissue Engineering Center, Shanghai, China
07/2005--- 03/2006 Postdoctor Fellow, Department of Orthopaedic Surgery, National Hospital of Singapore, NUS
01/2004--- 06/2005 Research Fellow, Department of Chemical and Biomolecular Engineering, Engineering Faculty, NUS

Research Field

1.Biodegradable hydrogels for biomedical and tissue regenerative applications
2.Controllable manipulation of microspheres for biomedical applications
3.Manipulation of microcarriers for cell therapy
Engineering and formulation of micro- and nano- drug release systems for medical applications

Research results and main published thesis

Patents
1.Preparation and application of a biodegradable material; ZL 200910049605.9
2.Preparation of a crosslinking hydrogel of oligochitosan and hyaluronic acid; ZL 201210338284.6
3.A core-shell microcarrier and preparation process; ZL 202210769838.1

Publications:
1. C. An, Y. Chen, Y. Wu, Z. Hu, H. Zhang, R. Liu, Y. Zhou*, L. Cen*, Manipulation of porous poly(L-lactide-co-ε-caprolactone) microcarriers via microfluidics for C2C12 expansion, International Journal of Biological Macromolecules, 242, (2023) https://doi.org/10.1016/j.ijbiomac.2023.124625.
2. Z. Jin, Y. Zhai, Y. Zhou, P. Guo, M. Chai, W. Tan, Y. Zhou *, L. Cen*, Regulation of mesenchymal stem cell osteogenic potential via microfluidic manipulation of microcarrier surface curvature, Chemical Engineering Journal. 448 (2022) DOI10.1016/j.cej.2022.137739.
3. Y. Wu, Y. Zheng, Z. Jin, S. Li, W. Wu, C. An, J. Guo, Z. Zhu, T. Zhou*, Y. Zhou*, L. Cen*, Controllable manipulation of alginate-gelatin core-shell microcarriers for HUMSCs expansion, International Journal of Biological Macromolecules. 216 (2022) 1-13.
4. W. Song, Z. Jin, X. Huang, Z. Xi*, X. Luo*, L. Cen*, Microfluidic-preparation of PLGA microcarriers with collagen patches for MSCs expansion and osteogenic differentiation, European Polymer Journal. 170 (2022) DOI10.1016/j.eurpolymj.2022.111177.
5. J. Zhou, Y. Zhai, J. Xu, T. Zhou*, L. Cen*, Microfluidic preparation of PLGA composite microspheres with mesoporous silica nanoparticles for finely manipulated drug release, International Journal of Pharmaceutics. 593 (2021) DOI10.1016/j.ijpharm.2020.120173.
6.T. Zhou, S. Chen, X. Ding, Z. Hu, L. Cen*, X. Zhang*. Fabrication and Characterization of Collagen/PVA Dual-Layer Membranes for Periodontal Bone Regeneration. Frontiers in Bioengineering and Biotechnology. 9 (2021)https://doi.org/10.3389/fbioe.2021.630977.
7. H. Wu, L. Shen, Z. Zhu, X. Luo, Y. Zhai, X. Hua, S. Zhao, L. Cen*, Z. Zhang*, A cell-free therapy for articular cartilage repair based on synergistic delivery of SDF-1 & KGN with HA injectable scaffold, Chemical Engineering Journal. 393 (2020) DOI10.1016/j.cej.2020.124649.
8. C. Zhu, H. Yang, L. Shen, Z. Zheng, S. Zhao, Q. Li, F. Yu, L. Cen□,Microfluidic preparation of PLGA microspheres as cell carriers with sustainable Rapa release. Journal of Biomaterials Science-Polymer Edition. 30 (2019) 737-755.
9. H. Chen, F. Jia, C. Zhu, J. Xu, X. Hua, Z. Xi, L. Shen, S. Zhao, L. Cen□,Controllable preparation of SB-3CT loaded PLGA microcapsules for traumatic-brain-injury pharmaco-therapy,Chemical Engineering Journal. 339 (2018) 346-358.
10. C. Zhu, R. Yang, X. Hua, H. Chen, J. Xu, R. Wu *, L. Cen *, Highly stretchable HA/SA hydrogels for tissue, Journal of Biomaterials Science-Polymer Edition. 29 (2018) 543-561.
11. J. Zhang, S. Yang, X. Yang, Z. Xi*, L. Zhao, L. Cen*, E.Y. Lu, Y. Yang, Novel fabricating process for porous polyglycolic acid scaffolds by melt-foaming using supercritical carbon dioxide, ACS Biomaterials Science & Engineering. 4 (2018) 694-706.
12. Z. Sun, S. Liu, K. Li, L. Tan, L. Cen*, G. Fu*, Well-defined and biocompatible hydrogels with toughening and reversible photoresponsive properties, Soft Matter. 12 (2016) 2192-2199.
13. R. Yang, L. Tan, L. Cen*, Z. Zhang*, An injectable scaffold based on crosslinked hyaluronic acid gel for tissue regeneration, RSC Advances. 6 (2016) 16838-16850.
14. Y. Zhu, H. Chen, L. Cen*, J. Wang*, Influence of abutment tooth position and adhesive point dimension on the rigidity of a dental trauma wire-composite splint, Dental Traumatology. 32 (2016) 225-230.
15. M. Dong, S. Liu, L. Tan, L. Cen*, G. Fu*, Hydrogels of chemically cross-linked and organ-metallic complexed interpenetrating PEG networks, Chinese Journal of Polymer Science. 34 (2016) 637-648.
16. W. Zhu, Q. Zhang, Y. Zhang, L. Cen*, J. Wang*, PDL regeneration via cell homing in delayed replantation of avulsed teeth, Journal of Translational Medicine. 13 (2015) 357.
17. L. Tan, J. Wang, S. Yin, W. Zhu, G. Zhou, Y. Cao*, L. Cen*, Regeneration of dentin–pulp-like tissue using an injectable tissue engineering technique, RSC Advances. 5 (2015) 59723-59737.
18. Y. Li, C. Zhou, L. Xu, F. Yao, L. Cen*, et al, Stimuli-responsive hydrogels prepared by simultaneous click chemistry and metal-ligand coordination, RSC Advances. 5 (2015) 18242-18251.
19. S.S Qian, C. Zhou, L. Xu, L. Cen*, et al, High strength biocompatible PEG single-network hydrogels, RSC Advances. 4 (2014) 25241-25250.
20. Y.W. Sun, C. Zhou, A.K. Zhang, L.Q. Xu, F. Yao, L. Cen*, et al, The synthesis of hydrogels with controlled distribution of polymer brushes on hydrogel network, Applied Surface Science. 320 (2014) 818-828.
21. F. Jia, Y.H. Yin, G.Y. Gao, Y. Wang, L. Cen*, et al, MMP-9 Inhibitor SB-3CT Attenuates Behavioral Impairments and Hippocampal Loss after Traumatic Brain Injury in Rat, Journal of Neurotrauma. 31 (2014) 1225-1234.
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23. Z. Li, L. Cen*, L. Zhao, et al,Preparation and evaluation of thiolated chitosan scaffolds for tissue engineering, Journal of Biomedical Materials Research A.92A (2010) 973–978.
24. L. Cen, K.G. Neoh, J. Sun, et al, Labeling of adipose derived stem cells by oleic acid modified magnetic nanoparticles, Advanced Functional Materials. 19 (2009) 1158-1166.
25. L. Cen, W. Liu, L. Cui, Y. Cao, Collagen tissue engineering: development of novel biomaterials and applications, Pediatric Research. 63 (2008) 492-496.
26. L. Cen, K.G. Neoh, E.T. Kang, Au-Pt bimetallic nanoparticles formation via viologen-mediated reduction on polymeric nanospheres, Journal of Colloid and Interface Science. 300 (2006) 190-199.
27. L. Cen, K.G. Neoh, E.T. Kang, Gold nanocrystal formation on viologen functionalized polymeric nanospheres, Advanced Materials. 17 (2005)1656-1661.
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