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所属学院 材料科学与工程学院

学科领域 生物材料界面电化学

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个人简介

曹辉亮，洪堡学者，教授。2008 年博士毕业于华南理工大学。是中国机械工程学会表面工程分会青年学组特聘专家（2021），中国生物材料学会生物材料表界面工程分会第一届委员（2019），中国生物材料学会医用金属材料分会青年委员会委员（2016）。先后在南昌航空大学、中国科学院上海硅酸盐研究所、德国耶拿大学工作。曹辉亮的研究包括与生物材料界面电化学相关的所有现象及其控制原理在生物医学中的应用，曾于 2020 年获上海市自然科学一等奖。

研究方向

可植入抗菌表面；医用金属；蛋白吸附；牙科材料；伤口敷料。

研究成果及主要发表文章

(1) On Developing of Implantable Antibacterial Surfaces

[1] H Cao, X Liu, F Meng, PK Chu. Biological actions of silver nanoparticles embedded in titanium controlled by micro-galvanic effects. Biomaterials 2011, 32:693-705.

[2] H Cao, Y Qiao, X Liu, T Lu, T Cui, F Meng, PK Chu. Electron storage mediated dark antibacterial action of bound silver nanoparticles: Smaller is not always better, Acta Biomaterialia 2013, 9:5100-10.

[3] H Cao, Y Qiao, F Meng, X Liu. Spacing-Dependent Antimicrobial Efficacy of Immobilized Silver Nanoparticles. The Journal of Physical Chemistry Letters 2014, 5: 743-8.

[4] K Tang, L Wang, H Geng, J Qiu, H Cao*, X Liu. Molybdenum disulfide (MoS2) nanosheets vertically coated on titanium for disinfection in the dark. Arabian Journal of Chemistry 2020, 13:1612-23.

[5] H Cao, Hui Qin, Yongsheng Li, Klaus D. Jandt. The Action-Networks of Nanosilver: Bridging the Gap between Material and Biology. Advanced Healthcare Materials 2021:2100619.

(2) On Tissue-integration of Biomaterials

[1] H Cao, X Liu. Activating titanium oxide coatings for orthopedic implants. Surface and Coatings Technology 2013, 233: 57-64.

[2] H Cao, W Zhang, F Meng, J Guo, D Wang, S Qian, X Jiang, X Liu, PK Chu. Osteogenesis Catalyzed by Titanium-Supported Silver Nanoparticles. ACS Appl Mater Interfaces 2017, 9 (6):5149-5157.

[3] H Cao, Tang K, Liu X. Bifunctional galvanics mediated selective toxicity on titanium. Materials Horizons 2018, 5:264-7.

[4] Q Luo, H Cao*, L Wang, X Ma, X Liu. ZnO@ZnS nanorod-array coated titanium: Good to fibroblasts but bad to bacteria. Journal of Colloid and Interface Science 2020, 579:50-60.

[5] S Yin, W Zhang, Y Tang, G Yang, X Wu, S Lin, X Liu, H Cao*, X Jiang*. Preservation of alveolar ridge height through mechanical memory: A novel dental implant design. Bioactive Materials 2021, 6:75-83,

The full publication list is available on https://orcid.org/0000-0002-5209-4497