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Mesoporous silica nanoparticle-based protein delivery systems for biomedical applications

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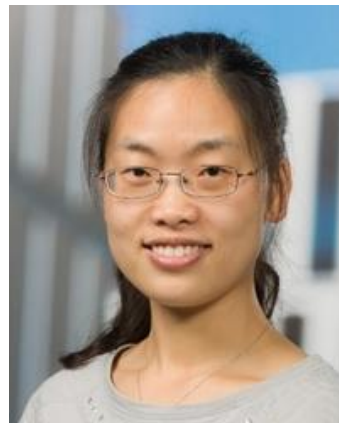
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Curriculum vitae

Jing Tu was born on 11th October 1985 in Wuhan, Hubei, China. After completing her secondary education, she started her academic study in Faculty of Materials Science and Chemistry, China University of Geosciences (Wuhan), in 2004. After 4 years study, she obtained a bachelor degree of Materials and Chemistry. Thereafter, she studied at Xiamen University as a master student in the field of biomedical engineering, with the thesis “Mesoporous silica nanoparticle as a drug carrier for photodynamic therapy: synthesis, characterization and properties”.



From September 2012 to December 2016, she studied in the group of Supramolecular & Biomaterials Chemistry in Leiden University as a PhD student under supervision of Prof. Dr. Alexander Kros. She conducted research in the field of protein delivery with a scholarship from the Chinese Scholarship Counsel (CSC). During her PhD studies, she collaborated with Prof. Dr. Wim Jiskoot (Leiden University), Prof. Dr. Joke A. Bouwstra (Leiden University), Dr. Heiner Friedrich (Eindhoven University of Technology) and Prof. Dr. Nico A. J. M. Sommerdijk (Eindhoven University of Technology). Furthermore, she participated in the PhD training courses as well as COST training school “Supramolecular chemistry in water”, Padova, 2014. She presented the 14th European Symposium on Controlled Drug Delivery, with a poster presentation named “Coiled-coil Forming Peptides Enhance Intracellular Delivery by Lipid Bilayers Coated Mesoporous Silica Nanoparticles”, the Netherlands, 2016. She attended the 43rd Annual Meeting & Exposition of the Controlled Release Society, with a poster presentation “Mesoporous silica nanoparticles with large pores for the encapsulation and release of proteins”, USA, 2016.

List of publications

1. J. Tu, A.L. Boyle, H. Friedrich, P.H.H. Bomans, J. Bussmann, Nico A.J.M. Sommerdijk, Wim Jiskoot*, Alexander Kros*, Mesoporous Silica Nanoparticles with Large Pores for the Encapsulation and Release of Proteins. *ACS Appl. Mater. Interfaces*, **2016**, DOI: 10.1021/acsami.6b11324
2. J. Tu, G. Du, R. Nejadnik, J. Mönkäre, K. van der Maaden, P.H.H. Bomans, Nico A. J. M. Sommerdijk, Wim Jiskoot*, Joke A. Bouwstra*, Alexander Kros*, Lipid Bilayer Coated Mesoporous Silica Nanoparticles for the Dermal Delivery of Ovalbumin. (Submitted).
3. J. Tu, J. Yang, G.E.M. Lamers, P.H.H. Bomans, Nico A.J.M. Sommerdijk, R.C.L. Olsthoorn, Alexander Kros*, Membrane Fusion Mediated Intracellular Delivery by Lipid Bilayers Coated Mesoporous Silica Nanoparticles. (Submitted)
4. J. Tu, J. Bussmann, G. Du, Y. Gao, Joke A. Bouwstra, Alexander Kros*, Lipid Bilayers Coated Mesoporous Silica Nanoparticles Highly Encapsulated Bovine Hemoglobin. (In preparation)
5. S.A. van den Berg, J. Tu, K.M. Sliedregt, A. Kros, T. Wennekes, H.C. Zuilhof Mesoporous Silica via Functionalization with 1, ω -Alkenes. *Adv. Mater. Interfaces*, **2014**, 1.

Other publications

1. J. Tu, T. Wang, W. Shi, G. Wu, X. Tian, Y. Wang, Multifunctional ZnPc-loaded mesoporous silica nanoparticles for enhancement of photodynamic therapy efficacy by endolysosomal escape. *Biomaterials*, **2012**, 33: 7903-7914.
2. C. Song, W. Shi, H. Jiang, J. Tu, D. Ge. pH-sensitive characteristics of poly(acrylic acid)-functionalized anodic aluminum oxide (AAO) membranes. *J. Membrane Sci.*, **2011**, 372: 340-345.
3. W. Shi, Y. Ma, C. Song, H. Jiang, X. Ru, J. Tu, Affinity electromembrane: Electrically facilitated adsorption. *J. Membrane Sci.*, **2010**, 354: 86-92.
4. W. Shi, H. Cao, C. Song, H. Jiang, J. Wang, S. Jiang, J. Tu, D. Ge, Poly(pyrrole-3-carboxylic acid)-alumina composite membrane for affinity adsorption of bilirubin. *J. Membrane Sci.*, **2010**, 353: 151-158.
5. D. Ge, X. Ru, S. Hong, S. Jiang, J. Tu, J. Wang, Coating metals on cellulose-polypyrrole composites: A new route to self-powered drug delivery system. *Electrochem. Commun.*, **2010**, 12: 1367-1370.