The handle http://hdl.handle.net/1887/33238 holds various files of this Leiden University dissertation

Author: Lan Song
Title: Towards understanding the toxicity of copper nanoparticles in aquatic ecosystems
Issue Date: 2015-07-02
I still remember the day I came to CML for the job interview. It feels like yesterday but almost five years have passed. Many people helped me during this PhD project. Firstly, I would like to express my sincerest gratitude to my inspiring promoter Professor Willie Peijnenburg and my daily supervisor Associate Professor Martina Vijver for their guidance and support during my PhD project. Willie and Martina offered insightful suggestions for the research in this thesis and they are the primary resource for me to get help. They also offered many suggestions for personal development, which are extremely useful for my entire life. I am also extremely grateful to Professor Geert de Snoo for the scientific inspiration he brings. I would also like to thank the members of the reading committee, whose names are mentioned in the beginning of the thesis and who devoted their time to read my thesis.

I would like to express my sincere appreciation to Dr. José M. Navas for his guidance and help during my secondment in Madrid. Dr. José M. Navas is one of the most responsible and friendly person I have met. He provided full support to accomplish chapter three in this thesis. Thank to my colleague Mona Connolly and Tobias Lammel for their friendship and help.

I’d also like to give my special thankfulness to Professor Charles Tyler for his guidance to apply the “QualityNano”. Professor Charles Tyler and Professor Tamara Galloway hosted me during my stay at Exeter University. Charles is a very inspiring professor. I enjoyed the discussions with Charles and Tamara in Exeter very much. He offered me great suggestions for completing chapter six in this thesis. Thank you to Jan Shears, Gregory Paull, Victoria Jennings, Rhys Goodhead for all of the technical help with my laboratory adventures in Exeter University.

I would like to thank Dr. Igor V. Tetko for coordinating the Environmental ChemOinformatic (ECO) Marie Curie Initial Training Network, which provided wonderful opportunities for young fellows. Thank you to all the other ECO partners, Prof. Karl-Werner Schramm, Professor Jan Hendriks, Professor Thomas P. Knepper, Dr. José M. Navas, Professor Tomas Öberg and Professor Roberto Todeschini, for their effort in
Acknowledgements

hosting all the ECO summer and winter schools. Thank Dr. Eva Schlosser for her arrangement of all the ECO school trainings and online trainings. Thank all the ECO fellows for your friendship and support.

Also, I would like to thank Marja Wouterse and Daan Leseman, and all the other laboratory personnel who assisted me in my research endeavor at the National Institute for Public Health and the Environment (RIVM) and Leiden University.

I would also like to thank Eleanor Paynter who is my teacher of the course “Communication in Science” at Leiden University. Eleanor inspired me in many ways and helped me as a close friend.

My gratitude is also extended to Oleksandra Ieromina and Hao Qiu who accompanied me through these happy four years in the same office. And thank my colleagues Yang Liu, Jing Hua, Yinlong Xiao, Guangchao Chen, Kai Fang and Mingming Hu for their friendship and help. I would like to thank Prof. Arnold Tukker, Dr. René Kleijn, Prof. Hans de Iongh, Esther Philips, Maarten van’t Zelfde, Jory Sjardijn and Susanna van den Oever for their effort in helping me with practical problems I encountered at CML. I would also like to thank all my colleagues for creating such a great working place at CML.

Finally, I would like to thank my parents and friends for their continuing support. Thank Yaqing Shu for his support throughout the entire PhD.

最后，在此感谢我的父母，亲人和所有的朋友。感谢你们一如既往的支持。

----- Life is short, chasing what you want! -----

----- 往昔莫追，前程任逐！-----

Lan Song 宋兰

Leiden July 2015
Curriculum Vitae

Lan Song was born on 9\textsuperscript{th} of November, 1987, in Dujiangyan, Sichuan province, China. In June 2004, Lan graduated from Dujiangyan high school after three years of studying in science. She then attended the College of Environmental & Energy Engineering, Beijing University of Technology in fall 2004, from where she graduated with a Bachelor degree in Environmental Engineering in summer 2008. She was one of the top 5\% graduates from the same major. In the same year, Lan was sponsored by the Danish government scholarship and continued her education at the department of Environment Engineering, Denmark Technical University. She achieved her master degree in Environmental Chemistry and Microbiology in fall 2010. Her master thesis was titled “Modeling the fate of ionizable chemicals in wastewater treatment plants using activity approach”.

Lan was then sponsored by the 7th Framework Programme of European Union and joined the Institute of Environmental Sciences, Leiden University in August 2010 as a Marie Curie PHD student under the supervision of Prof. Willie Peijnenburg and Associate Professor Martina Vijver. Her work in Leiden was focused on investigating the fate and toxicity of nanoparticles in the aquatic environment.

During her PhD, Lan was trained by Marie Curie Initial Training Network "Environmental ChemOinformatics", a network of seven European Universities/ Institutes with several associated industrial partners that aimed to transfer environmental and computational methods to a new generation of environmental chemoinformaticans. In addition, Lan visited the Spanish National Institute for Agriculture and Food Research and Technology (INIA) as a researcher for two months in fall 2011. In 2014, she was funded by the project “Quality Nano” under the European 7th Framework Programme and visited Exeter University in the United Kingdom as a researcher for two months. After her PhD, Lan continued her career adventure in Elsevier B.V. as a managing editor.
Publications

Song L, Vijver MG, Peijnenburg WJ, De Snoo GR. 2011. Smart nanotoxicity testing for biodiversity conservation. Environmental science & technology 45, 6229-6230


Song L, Vijver MG, Peijnenburg WJ, De Snoo GR. 2015. Morphological attributes of cladoceran species can help to assess toxicity of copper nanoparticles across species. Environmental Chemistry and Toxicology. 2015, doi: 10.1002/etc.3000


Wang Z, Quik JT, Song L, van den Brandhof EJ, Wouterse M, Peijnenburg WJ. 2015. Humic substances alleviate the aquatic toxicity of PVP - coated silver nanoparticles to organisms of different trophic levels. Environmental Toxicology and Chemistry. DOI: 10.1002/etc.2936