

LIU, Shu-Sheng

CRRICULUM VITAE

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Title: Zhejiang University Distinguished Professor

Mailing address: Institute of Insect Sciences, Zhejiang University, 866 Yuhangtang Road, Hangzhou 310058, China

Telephone: (86-571) 88982505

E-Mail: shshliu@zju.edu.cn

Current position and employment history

Current: “Qiu-Shi” Distinguished Professor of Zhejiang University; Deputy-President, Academic Committee of Zhejiang University; Discipline Leader of Plant Protection, Zhejiang University, China

1998-present: Professor of entomology, discipline leader of plant protection (2007-present), and director of the Institute of Insect Sciences (1998-2009), Zhejiang University.

1991-1998: Professor and Head in entomology, Zhejiang Agricultural University, China.

1986-1991: Associate professor in entomology, Zhejiang Agricultural University, China.

1984-1986: Lecturer in entomology, Zhejiang Agricultural University, China.

1977-1978: Teaching assistant in plant protection, Hunan Agricultural University, China.

Education

- ◆ Doctor of Philosophy – Zoology: Australian National University and CSIRO Division of Entomology, Canberra, Australia, 1984.
- ◆ Postgraduate study – Entomology: Zhejiang Agricultural University, 1978-1980.
- ◆ Undergraduate study – Plant Protection: Hunan Agricultural University, 1974-1977.

Major Research Interests

- ◆ Biological invasion by alien insect pests
- ◆ Tripartite interactions between insect vectors, viruses and plants
- ◆ Behavioural and chemical ecology
- ◆ Biological control and integrated pest management in vegetable crops

Research Activities

In recent years, the major focus of research in our laboratory has been invasion biology of the whitefly *Bemisia tabaci* species complex and integrated pest management in vegetable crops. In particular, we have been investigating the behavioural, ecological, physiological and molecular mechanisms underlying the rapid invasion by alien species of the whitefly species complex, including: (1) whitefly-begomovirus-plant interactions, (2) the systematics and species status of the whitefly *Bemisia tabaci* complex, and (3) the behavioural interactions between alien and native whitefly species.

While we have been conducting basic research in several areas, our laboratory has been strong in bridging basic and applied research. The major focus in applied research has been incorporation of basic research results, from both our own and the literature, into practice to develop and improve pest management systems in vegetable crops. These management

systems strive to reduce chemical insecticide input and help produce safe products through enhancing naturally occurring biological control. We have close interactions with the local vegetable industry, and our laboratory has been recognized as an important resource by the local industry as well as the nationwide extension service.

Teaching Activity

- ◆ Instructor for the following yearly courses:
 - a) Applied Entomology (Undergraduate students)
 - b) Plant Protection (Undergraduate students)
 - c) Insect Ecology (Master students)
 - d) Selected Topics on Pest Management (PhD Students)
- ◆ Supervision of Postgraduate Students:
 - a) Major supervisor for 37 MSc Students from 1987 to 2016
 - b) Major supervisor for 33 PhD students from 1993 to 2016
- ◆ Supervision of internship projects of 54 undergraduates from 1986 to 2016

Societies and Professional Activities

- [1] Current editorial posts for science journals:
 - *Acta Entomologica Sinica*, Associate Editor-in-Chief
 - *Annual Review of Entomology*, Guest Member of the Editorial Committee
 - *Bulletin of Entomological Research*, Subject Editor
 - *Chinese Journal of Biological Control*, Member of Editorial Board
 - *Insect Science*, Member of Editorial Board
 - *Journal of Biosafety*, Deputy Editor-in-Chief
 - *Journal of Environmental Entomology*, Member of Editorial Board
 - *Journal of Integrative Agriculture*, Editor-in-Chief for Columns
 - *Journal of Zhejiang University SCIENCE B*, Member of Editorial Board
 - *Science China: Life Sciences*, Subject Editor
- [2] Council of International Congress of Entomology: Council Member, 2012-present
- [3] Entomological Society of China: Deputy President, 2012-present
- [4] Entomology 2014 - The 62nd Annual Meeting of the Entomological Society of America: Moderator and co-organizer for the symposium “Roles of the Biotic Interactions in Biological Invasions”, Portland, USA, 16-19 November 2014..
- [5] The 10th Solanaceae Conference (www.sol2013.org) , co-chair for Session III – Biotic Interactions and invited presentation “Plant-mediated whitefly-begomovirus interactions”, Beijing, China, October 2013.
- [6] XXIV International Congress of Entomology (www.ice2012.org), co-organizer and co-chair of the symposium “Biotic Interactions in the Context of Biological Invasions”, Daegu, Korea, August 2012.
- [7] International Congress on Biological Invasion (www.icbi2009.org/), Fuzhou, China, November 2009, invited plenary speaker and member of the International Scientific Committee.
- [8] XXII International Congress of Entomology (www.ice2004.org), Brisbane, Australia, August 2004: Invited Speaker of a Plenary Lecture on integrated pest management; Co-organizer for a symposium on Vegetable IPM.

Publications

(All author names have their Family Name first, followed by their given name or initials)

Ten highly cited papers published in recent years

- (1) Luan Jun-Bo, Yao Dan-Mei, Zhang Tong, Walling Linda L., Yang Mei, Wang Yu-Jun, Liu Shu-Sheng. 2013. Suppression of terpenoid synthesis in plants by a virus promotes its mutualism with vectors. *Ecology Letters* 16: 390-398. (51 citations, as recorded by [Google Scholar 20 October 2016](#))
- (2) Liu Shu-Sheng, John Colvin, Paul De Barro. 2012. Species concepts as applied to the whitefly *Bemisia tabaci* systematics: how many species are there? *Journal of Integrative Agriculture* 11: 176-186. (144 citations)
- (3) Luan Jun-Bo, Li Jun-Min, Varela Nélia, Wang Yong-Liang, Li Fang-Fang, Bao Yan-Yuan, Zhang Chuan-Xi, Liu Shu-Sheng, Wang Xiao-Wei. 2011. Global analysis of the transcriptional response of whitefly to *Tomato yellow leaf curl China virus* reveals their relationship of coevolved adaptations. *Journal of Virology* 85: 3330-3340. (74 citations)
- (4) Hu Jian, De Barro P.J., Zhao Hua, Wang Jia, Nardi F., Liu Shu-Sheng. 2011. An extensive field survey combined with a phylogenetic analysis reveals rapid and widespread invasion of two alien whiteflies in China. *PLoS ONE* 6(1): e16061. doi: 10.1371/journal.pone.0016061. (185 citations)
- (5) De Barro P.J., Liu Shu-Sheng, Boykin L.M., Dinsdale A. 2011. *Bemisia tabaci*: a statement of species status. *Annual Review of Entomology* 56: 1-19. (848 citations)
- (6) Wang Xiao-Wei, Luan Jun-Bo, Li Jun-Min, Bao Yan-Yuan, Zhang Chuan-Xi, Liu Shu-Sheng. 2010. De novo characterization of a whitefly transcriptome and analysis of its gene expression during development. *BMC Genomics* 11: 400; DOI: 10.1186/1471-2164-11-400. (305 citations)
- (7) Xu Jing, De Barro P.J., Liu Shu-Sheng. 2010. Reproductive incompatibility among genetic groups of *Bemisia tabaci* supports the proposition that the whitefly is a cryptic species complex. *Bulletin of Entomological Research* 100: 359-366. (161 citations)
- (8) Crowder D.W., Horowitz A.R., De Barro P.J., Liu Shu-Sheng, Showalter A.M., Kontsedalov S., Khasdan V., Shargal A., Liu Jian, Carrière Y. 2010. Mating behaviour, life-history, and adaptation to insecticides determine species exclusion between whiteflies. *Journal of Animal Ecology* 79: 563-570. (78 citations)
- (9) Liu Shu-Sheng, De Barro P. J., Xu Jing, Luan Jun-Bo, Zang Lian-Sheng, Ruan Yong-Ming, Wan Fang-Hao. 2007. Asymmetric mating interactions drive widespread invasion and displacement in a whitefly. *Science* 318: 1769-1772. (325 citations)
- (10) Jiu Min, Zhou Xue-Ping, Tong Lin, Xu Jing, Yang Xiao, Wan Fang-Hao, Liu Shu-Sheng. 2007. Vector-virus mutualism accelerates population increase of an invasive whitefly. *PLoS ONE* 2(1): e182. doi:10.1371/journal.pone.0000182. (220 citations)

List of papers in refereed English journals

2016

- Luan Jun-Bo, Shan Hong-Wei, Isermann P., Huang Jia-Hsin, Lammerding J., Liu Shu-Sheng, Douglas A.E. 2016. Cellular and molecular remodeling of a host cell for vertical transmission of bacterial symbionts. *Proceedings of the Royal Society B: Biological Sciences* 283: 20160580. <http://dx.doi.org/10.1098/rspb.2016.0580>.
- Wang Lan-Lan, Wang Xin-Ru, Wei Xue-Mei, Huang Huang, Wu Jian-Xiang, Chen Xue-Xin, Liu Shu-Sheng, Wang Xiao-Wei. 2016. The autophagy pathway participates in resistance

- to Tomato yellow leaf curl virus infection in whiteflies. *Autophagy* 12(9): 1560-1574. doi:10.1080/15548627.2016.1192749.
- Hariton-Shalev Akiza, Sobol Iris, Ghanim Murad, Liu Shu-Sheng, Czosnek Henryk. 2016. The Whitefly *Bemisia tabaci* knottin-1 gene is implicated in regulating the quantity of Tomato yellow leaf curl virus ingested and transmitted by the insect. *Viruses* 8: 205; doi:10.3390/v8070205.
- Zhu Dan-Tong, Xia Wen-Qiang, Rao Qiong, Liu Shu-Sheng, Ghanim Murad, Wang Xiao-Wei. 2016. Sequencing and comparison of the Rickettsia genomes from the whitefly *Bemisia tabaci* Middle East Asia Minor I. *Insect Science* 23: 531-542.
- Xiao Na, Pan Li-Long, Zhang Chang-Rong, Shan Hong-Wei, Liu Shu-Sheng. 2016. Differential tolerance capacity to unfavourable low and high temperatures between two invasive whiteflies. *Scientific Reports* 6: 24306; doi:10.1038/srep24306.
- Wang Hua-Ling, Cui Xi-Yun, Wang Xiao-Wei, Liu Shu-Sheng, Zhang Zheng-Hua, Zhou Xue-Ping. 2016. First report of Sri Lankan cassava mosaic virus infecting cassava in Cambodia. *Plant Disease* 100(5): 1029; doi: 10.1094/PDIS-10-15-1228-PDN.
- Shan Hong-Wei, Zhang Chang-Rong, Yan Ting-Ting, Tang Hai-Qin, Wang Xiao-Wei, Liu Shu-Sheng, Liu Yin-Quan. 2016. Temporal changes of symbiont density and host fitness after rifampicin treatment in a whitefly of the *Bemisia tabaci* species complex. *Insect Science* 23(2): 200-214.
- Qin Li, Pan Li-Long, Liu Shu-Sheng. 2016. Further insight into the reproductive incompatibility between putative cryptic species of the *Bemisia tabaci* whitefly complex. *Insect Science* 23(2): 215-224.
- Liu Shu-Min, Li Jie, Zhu Jin-Qi, Wang Xiao-Wei, Wang Cheng-Shu, Liu Shu-Sheng, Chen Xue-Xin, Li Sheng. 2015. Transgenic plants expressing the AaIT/GNA fusion protein show increased resistance and toxicity to both chewing and sucking pests. *Insect Science* 23(2): 265-276.
- Wang Hua-Ling, Zhang Zhen, Bing Xiao-Li, Liu Yin-Quan, Liu Shu-Sheng, Wang Xiao-Wei. 2016. A complete mitochondrial DNA genome derived from a Chinese population of the *Bemisia afer* species complex (Hemiptera: Aleyrodidae). *Mitochondrial DNA* 27(5): 3500-3501; doi: 10.3109/19401736.2015.1066367
- Wang Hua-Ling, Xiao Na, Yang Jiao, Wang Xiao-Wei, Colvin J., Liu Shu-Sheng. 2016. The complete mitochondrial genome of *Bemisia afer* (Hemiptera: Aleyrodidae). *Mitochondrial DNA* 27(1): 98-99, doi: 10.3109/19401736.2013.873921.
- Bi Wang Bi, Wang Lanlan, Chen Fangyuan, Yang Xiuling, Ding Ming, Zhang Zhongkai, Liu Shu-Sheng, Wang Xiao-Wei, Zhou Xueping. 2016. MicroRNA profiling of the whitefly *Bemisia tabaci* Middle East-Asia Minor I following the acquisition of Tomato yellow leaf curl China virus. *Virology Journal* 13: 20, doi: 10.1186/s12985-016-0469-7.
- Li Zhengyu, Feng Xia, Liu Shu-Sheng, You Minsheng, Furlong, M.J. 2016. Biology, ecology and management of the diamondback moth in China. *Annual Review of Entomology* 61: 277-296, doi: 10.1146/annurev-ento-010715-023622.

2015

- Zhang Chang-Rong, Shan Hong-Wei, Xiao Na, Zhang Fan-Di, Wang Xiao-Wei, Liu Yin-Quan, Liu Shu-Sheng. 2015. Differential temporal changes of primary and secondary symbionts and whitefly host fitness following antibiotic treatments. *Scientific Reports* 5:15898; doi: 10.1038/srep15898.
- Guo Tao, Guo Qi, Cui Xi-Yun, Liu Yin-Quan, Hu Jian, Liu Shu-Sheng. 2015. Comparison of transmission of Papaya leaf curl China virus among four cryptic species of the whitefly *Bemisia tabaci* complex. *Scientific Reports* 5:15432 | DOI: 10.1038/srep15432.

- Luan Jun-Bo, Chen Wenbo, Hasegawa DK, Simmons AM, Wintermantel WM, Ling Kai-Shu, Fei Zhangjun, Liu Shu-Sheng, Douglas AE. 2015. Metabolic coevolution in the bacterial symbiosis of whiteflies and related plant sap-feeding insects. *Genome Biology and Evolution* 7: 2635-2647, doi:10.1093/gbe/evv170.
- Xu Hong-Xing, Hong Yue, Zhang Min-Zhu, Wang Yong-Liang, Liu Shu-Sheng, Wang Xiao-Wei. 2015. Transcriptional responses of invasive and indigenous whiteflies to different host plants reveal their disparate capacity of adaptation. *Scientific Reports* 5: 10774.
- Rao Qiong, Rollat-Farnier Pierre-Antoine, Zhu Dan-Tong, Santos-Garcia Diego, Silva Francisco J, Moya Andrés, Latorre Amparo, Klein Cecilia C, Vavre Fabrice, Sagot Marie-France, Liu Shu-Sheng, Mouton Laurence, Wang Xiao-Wei. 2015. Genome reduction and metabolic complementation of the dual endosymbionts in the whitefly *Bemisia tabaci*. *BMC Genomics* 16:226.
- Jiu Min, Li Jun-Min, Gao Xian-Long, Wang Lun-Ji, Wang Xiao-Wei, Liu Shu-Sheng. 2015. Identification and characterization of two phospholipid hydroperoxide glutathione peroxidase genes from the Mediterranean species of the whitefly *Bemisia tabaci* complex. *Archives of Insect Biochemistry and Physiology* 89(1): 54-67.
- Rollat-Farnier Pierre-Antoine, Santos-Garcia Diego, Rao Qiong, Sagot Marie-France, Silva Francisco J., Henri Hélène, Zchori-Fein Einat, Latorre Amparo, Moya Andrés, Barbe Valérie, Liu Shu-Sheng, Wang Xiao-Wei, Vavre Fabrice, Mouton Laurence. 2015. Two host clades, two bacterial arsenals: evolution through gene losses in facultative endosymbionts. *Genome Biology and Evolution* 7: 839-855.
- Gao Xian-Long, Li Jun-Min, Xu Hong-Xing, Yan Gen-Hong, Jiu Min, Liu Shu-Sheng, Wang Xiao-Wei. 2015. Cloning of a putative extracellular Cu/Zn superoxide dismutase and functional differences of superoxide dismutases in invasive and indigenous whiteflies. *Insect Science* 22: 52-64.
- He Wen-Bo, Li Jie, Liu Shu-Sheng. 2015. Differential profiles of direct and indirect modification of vector feeding behaviour by a plant virus. *Scientific Reports* 5:7682
- 2014**
- Li Ran, Weldegergis BT, Li Jie, Jung Choonkyun, Qu Jing, Sun Yanwei, Qin Hong-Mei, Tee ChuanSia, van Loon JJA, Dicke M, Chua Nam-Hai, Liu Shu-Sheng, Ye Jian. 2014. Virulence factors of geminivirus interact with MYC2 to subvert plant resistance and promote vector performance. *The Plant Cell* 26(12): 4991-5008.
- Wang Lan-Lan, Wei Xue-Mei, Ye Xiao-Dong, Xu Hong-Xing, Zhou Xue-Ping, Liu Shu-Sheng, Wang Xiao-Wei. 2014. Expression and functional characterization of a soluble form of *Tomato yellow leaf curl virus* coat protein. *Pest Management Science* 70:1624-1631.
- Wei Jing, Zhao Juan-Juan, Zhang Tong, Li Fang-Fang, Ghanim Murad, Zhou Xue-Ping, Ye Gong-Yin, **Liu Shu-Sheng**, Wang Xiao-Wei. 2014. Specific cells in the primary salivary glands of the whitefly *Bemisia tabaci* control retention and transmission of begomoviruses. *Journal of Virology* 88: 13460-13468.
- Shan Hong-Wei, Lu Yu-Hong, Bing Xiao-Li, Liu Shu-Sheng, Liu Yin-Quan. 2014. Differential responses of the whitefly *Bemisia tabaci* endosymbionts to unfavourable low and high temperatures. *Microbial Ecology* 68: 472-482.
- Wang Hu-Ling, Yang Jiao, Boykin, L.M., Zhao Qiong-Yi, Wang Yu-Yun, Liu Shu-Sheng, Wang Xiao-Wei. 2014 Developing conversed microsatellite markers and their implications in evolutionary analysis of the *Bemisia tabaci* complex. *Scientific Reports* 4: 6351.
- Bing Xiao-Li, Xia Wen-Qiang, Gui Jia-Dong, Yan Geng-Hong, Wang Xiao-Wei, Liu Shu-Sheng. 2014. Diversity and evolution of the Wolbachia endosymbionts of *Bemisia* (Hemiptera: Aleyrodidae) whiteflies. *Ecology and Evolution* 4:2714-2737.

- Ye Xiao-Dong, Su Yun-Lin, Zhao Qiong-Yi, Xia Wen-Qiang, Liu Shu-Sheng, Wang Xiao-Wei. 2014. Transcriptomic analyses reveal the adaptive features and biological differences of guts from two invasive whitefly species. *BMC Genomics* 15:370.
- Zhang Chang-Rong, Zhang Shan, Xia Jun, Li Fang-Fang, Xia We-Qiang, Liu Shu-Sheng, Wang Xiao-Wei. 2014. The immune strategy and stress response of the Mediterranean species of the *Bemisia tabaci* complex to an orally delivered bacterial pathogen. *PLoS ONE* 9(4): e94477.
- Luan Jun-Bo, Wang Xiao-Wei, Colvin John, Liu Shu-Sheng. 2014. Plant-mediated whitefly-begomovirus interactions: research progress and future prospects. *Bulletin of Entomological Research* 104: 267-276.
- Sun Di-Bing, Li Jie, Liu Yin-Quan, Crowder D.W., Liu Shu-Sheng. 2014. Effects of reproductive interference on the competitive displacement between two invasive whiteflies. *Bulletin of Entomological Research* 104: 334-346.
- Wang Jia, He Wen-Bo, Su Yun-Lin, Bing Xiao-Li, Liu Shu-Sheng. 2014. Molecular characterization of soluble and membrane-bound trehalases of the whitefly, *Bemisia tabaci*. *Archives of Insect Biochemistry and Physiology* 85: 216-233.
- Liu Shu-Sheng, Rao A, Vinson S.B. 2014. Biological Control in China: past, present and future - An introduction to this special issue. *Biological Control* 68: 1-5.
- Liu Yin-Quan, Shi Zu-Hua, Zalucki M.P., Liu Shu-Sheng. 2014. Conservation biological control in Brassica vegetable crops in China. *Biological Control* 68: 37-46.
- Bing Xiao-Li, Rao Qiong, Luan Jun-Bo, Liu Shu-Sheng. 2014. The distribution, transmission, functions and genomics of the symbiont *Hamiltonella* of invertebrates. *Journal of Environmental Entomology* 36(2): 225-232 (in Chinese with English summary).

2013

- Liu Yong-Jie, Liu Jing, Ying Sheng-Hua, Liu Shu-Sheng, Feng Ming-Guang. 2013. A fungal insecticide engineered for fast *per os* kill of caterpillars has high field efficacy and safety in full-season control of cabbage insect pests. *Applied and Environmental Microbiology* 79(20): 6452-6458.
- Luan Jun-Bo, Wang Yong-Liang, Wang Jia, Wang Xiao-Wei, Liu Shu-Sheng. 2013. Detoxification activity and energy cost is attenuated in the whiteflies feeding on begomovirus-infected tobacco plants. *Insect Molecular Biology* 22(5): 597-607.
- Qian Cen, Liu Yang, Fang Qi, Li Yan-Min, Liu Shu-Sheng, Ye Gong-Yin. 2013. Venom of the ectoparasitoid, *Nasonia vitripennis*, influences gene expression in *Musca domestica* hemocytes. *Archives of Insect Biochemistry and Physiology* 83(4): 211-231.
- Xia Jun, Zhang Chang-Rong, Zhang Shan, Li Fang-Fang, Feng Ming-Guang, Wang Xiao-Wei, Liu Shu-Sheng. 2013. Analysis of whitefly transcriptional responses to *Beauveria bassiana* infection reveals new insights into insect-fungus interactions. *PLOS ONE* 8(7):e68185.
- Su Yun-Lin, He Wen-Bo, Wang Jia, Li Jun-Min, Liu Shu-Sheng, Wang Xiao-Wei. 2013. Selection of endogenous reference genes for gene expression analysis in the Mediterranean species of the whitefly *Bemisia tabaci* (Hemiptera: Aleyrodidae) complex. *Journal of Economic Entomology* 106(3): 1446-1455.
- Luan Jun-Bo, Ghanim, M., Liu Shu-Sheng, Czosnek, H. 2013. Silencing the ecdysone synthesis and signaling pathway genes disrupts nymphal development in the whitefly. *Insect Biochemistry and Molecular Biology* 43(8):740-746.
- Wang Lan-Lan, Huang Huang, Zhang Chang-Rong, Xia Jun, Liu Shu-Sheng, Wang Xiao-Wei. 2013. Cloning and functional characterization of c-Jun NH2-terminal kinase from the Mediterranean species of the whitefly *Bemisia tabaci* complex. *International Journal of Molecular Sciences* 14(7): 13433-13446; doi:10.3390/ijms140713433.

- Wang Hua-Ling, Yang Jiao, Boykin L.M., Zhao Qiong-Yi, Li Qian, Wang Xiao-Wei, Liu Shu-Sheng. 2013. The characteristics and expression profiles of the mitochondrial genome for the Mediterranean species of the *Bemisia tabaci* complex. *BMC Genomics* 14: 401.
- Wang Yong-Liang, Wang Yu-Jun, Luan Jun-Bo, Yan Gen-Hong, Liu Shu-Sheng, Wang Xiao-Wei. 2013. Analysis of the transcriptional differences between indigenous and invasive whiteflies reveals possible mechanisms of whitefly invasion. *PLoS ONE* 8(5):e62176.
- Sun Di-Bing, Liu Yin-Quan, Qin Li, Xu Jing, Li Fang-Fang, Liu Shu-Sheng. 2013. Competitive displacement between two invasive whiteflies: insecticide application and host plant effects. *Bulletin of Entomological Research* 103: 344-353.
- Bing Xiao-Li, Ruan Yong-Ming, Rao Qiong, Wang Xiao-Wei, Liu Shu-Sheng. 2013. Diversity of secondary endosymbionts among different putative species of the whitefly *Bemisia tabaci*. *Insect Science* 20(2): 194-206.
- Luan Jun-Bo, Yao Dan-Mei, Zhang Tong, Walling Linda L., Yang Mei, Wang Yu-Jun, Liu Shu-Sheng. 2013. Suppression of terpenoid synthesis in plants by a virus promotes its mutualism with vectors. *Ecology Letters* 16: 390-398.
- Gao Xian-Long, Li Jun-Min, Wang Yong-Liang, Jiu Min, Yan Gen-Hong, Liu Shu-Sheng, Wang Xiao-Wei. 2013. Cloning, expression and characterization of mitochondrial manganese superoxide dismutase from the whitefly, *Bemisia tabaci*. *International Journal of Molecular Sciences* 14: 871-887.
- Bing Xiao-Li, Yang Jiao, Zchori-Fein E., Wang Xiao-Wei, Liu Shu-Sheng. 2013. Characterization of a newly discovered symbiont in the whitefly *Bemisia tabaci* (Hemiptera: Aleyrodidae). *Applied and Environmental Microbiology* 79(2): 569-575.
- Luan Jun-Bo, Paul De Barro, Ruan Yong-Ming, Liu Shu-Sheng. 2013. Distinct behavioural strategies underlying asymmetric mating interactions between invasive and indigenous whiteflies. *Entomologia Experimentalis et Applicata* 146(1): 186-194.

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- Wang Xiao-Wei, Zhao Qiong-Yi, Luan Jun-Bo, Wang Yu-Jun, Yan Gen-Hong, Liu Shu-Sheng. 2012. Analysis of a native whitefly transcriptome and its sequence divergence with two invasive whitefly species. *BMC Genomics* 13: 529. DOI:10.1186/1471-2164-13-529 .
- Guo Jian-Yang, Dong Sheng-Zhang, Yang Xiu-Lin, Cheng Lu, Wan Fang-Hao, Liu Shu-Sheng, Zhou Xue-Ping, Ye Gong-Yin. 2012. Enhanced vitellogenesis in a whitefly via feeding on a begomovirus-infected plant. *PLoS ONE* 7(8): e43567. DOI: 10.1371/journal.pone.0043567.
- Zalucki M.P., Shabbir A., Silva R., Adamson D., Liu Shu-Sheng, Furlong M.J. 2012. Estimating the economic cost of one of the world's major insect pests, *Plutella xylostella* (Lepidoptera: Plutellidae): just how long is a piece of string? *Journal of Economic Entomology* 105: 1115-1129.
- Rao Qiong, Wang Shuang, Zhu Dan-Tong, Wang Xiao-Wei, Liu Shu-Sheng. 2012. Draft genome sequence of *Rickettsia* sp. strain MEAM1, isolated from the whitefly, *Bemisia tabaci*. *Journal of Bacteriology* 194(17): 4741-4742.
- Su Yun-Lin, Li Jun-Min, Li Meng, Luan Jun-Bo, Ye Xiao-Dong, Wang Xiao-Wei, Liu Shu-Sheng. 2012. Transcriptomic analysis of the salivary glands of an invasive whitefly. *PLoS ONE* 7(6): e39303. DOI: 10.1371/journal.pone.0039303.
- Wang Peng, Crowder David W., Liu Shu-Sheng. 2012. Roles of mating behavioural interactions and life history traits in the competition between alien and indigenous whiteflies. *Bulletin of Entomological Research* 102: 395-405.

- Wang Jia, Bing Xiao-Li, Ye Gong-Yin, Liu Shu-Sheng. 2012. Infection of tobacco plants by a begomovirus improves nutritional assimilation by a whitefly. *Entomologia Experimentalis et Applicata*, 144: 191-201.
- Rao Qiong, Wang Shuang, Su Yun-Lin, Bing Xiao-Li, Liu Shu-Sheng, Wang Xiao-Wei. 2012. Draft genome sequence of *Candidatus Hamiltonella* sp., an endosymbiont of the whitefly, *Bemisia tabaci*. *Journal of Bacteriology* 194(13): 3558.
- Zhang Peng-Jun, Lu Yao-Bin, Zalucki, M.P., Liu Shu-Sheng. 2012. Relationship between adult oviposition preference and larval performance of the diamondback moth, *Plutella xylostella*. *Journal of Pest Science*, 85: 247-252.
- Luan Jun-Bo, Liu Shu-Sheng. 2012. Differences in mating behavior lead to asymmetric mating interactions and consequential changes in sex ratio between an invasive and an indigenous whitefly. *Integrative Zoology* 7: 1-15.
- Liu Shu-Sheng, Walling, L. Linda, Wang Xiao-Wei. 2012. Special issue introduction – The whitefly *Bemisia tabaci* species complex and begomoviruses: research progress and future prospects. *Journal of Integrative Agriculture* 11: 171-175.
- Li Fang-Fang, Xia Jun, Li Jun-Min, Liu Shu-Sheng, Wang Xiao-Wei. 2012. p38 MAPK is a component of the signal transduction pathway triggering cold stress response in the whitefly *Bemisia tabaci*. *Journal of Integrative Agriculture* 11: 303-311.
- Luan Jun-Bo, Xu Jing, Lin Ke-Ke, Zalucki M. P., Liu Shu-Sheng. 2012. Species exclusion between an invasive and an indigenous whitefly on host plants with differential levels of suitability. *Journal of Integrative Agriculture* 11: 215-224.
- Liu Shu-Sheng, John Colvin, Paul De Barro. 2012. Species concepts as applied to the whitefly *Bemisia tabaci* systematics: how many species are there? *Journal of Integrative Agriculture* 11: 176-186.
- Zhang Tong, Luan Jun-Bo, Qi Jin-Feng, Huang Chang-Jun, Li Meng, Zhou Xue-Ping, Liu Shu-Sheng. 2012. Begomovirus-whitefly mutualism is achieved through repression of plant defenses by a virus pathogenicity factor. *Molecular Ecology* 21: 1294-1304.
- A special issue entitled “The Whitefly *Bemisia tabaci* Species Complex and Begomoviruses” was published by *Journal of Integrative Agriculture* in 2012. Find articles of this special issue at: <http://www.sciencedirect.com/science/journal/20953119/11/2>

2011

- Xu Jing, Lin Ke-Ke, Liu Shu-Sheng. 2011. Performance on different host plants of an alien and an indigenous *Bemisia tabaci* from China. *Journal of Applied Entomology* 135: 771-779.
- Wang Xiao-Wei, Luan Jun-Bo, Li Jun-Min, Su Yun-Lin, Xia Jun, Liu Shu-Sheng. 2011. Transcriptome analysis and comparison reveal divergence between two invasive whitefly cryptic species. *BMC Genomics* 12: 458 (www.biomedcentral.com/1471-2164/12/458).
- Li Jun-Min, Su Yun-Lin, Gao Xian-Long, He Jiao, Liu Shu-Sheng, Wang Xiao-Wei. 2011. Molecular characterization and oxidative stress response of an intracellular Cu/Zn superoxide dismutase (CuZnSOD) of the whitefly, *Bemisia tabaci*. *Archives of Insect Biochemistry & Physiology* 77: 11: 118-133.
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Publications by LIU Shu-Sheng from 1982-2006 may be found from:

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Honours and Awards

- ◆ Outstanding Teacher of the Province, Zhejiang Education Council, 2015.
- ◆ Award of top 10 Outstanding Scientists in Zhejiang Province, China, Zhejiang Association of Science and Technology and Zhejiang Provincial Government, China, 2013.
- ◆ Award of outstanding contribution to Zhejiang agriculture, Zhejiang Provincial Government, China, 2011.
- ◆ Special-accredited Outstanding Scientist of Zhejiang Province, China, Zhejiang Provincial Government, China, 2008.
- ◆ Excellent Agricultural Scientist, Chinese Association of Agriculture and Ministry of Agriculture of China, 2005
- ◆ Award for outstanding contribution to biological control, Pu Zhe-Long Foundation for Scholars and Science, Zhongshan University, 2005
- ◆ Certificate of Distinction in Recognition of Outstanding Achievements in Entomology, Council of International Congress of Entomology, 2004
- ◆ Outstanding Contribution Award for Scientists, Zhejiang Provincial Government, 2001.
- ◆ Silver Jubilee Award, International Foundation for Science, 2000.
- ◆ China State Award for Outstanding Young Scientist, 1990.