modernization. This paper only studies the self-propelled agricultural machines. The fact proves that this system is only suitable for research on the small agricultural test farmland. For large and complicated agricultural terrain and different crop farmlands, the practicable performance of this research will reduce much. Nevertheless, it is certain that the agricultural machine design based on VR is very valuable for agriculture modernization. This design method can reduce the cycle of the agricultural machines, reduce the mechanical design cost and improve mechanical performance to much extent. It is expected that application of the agricultural machine design based on VR is emphasized due to discussion and research in this paper.

CONFLICT OF INTEREST

The author confirms that this article content has no conflict of interest.

ACKNOWLEDGEMENTS

Declared none.

REFERENCES

[1] W. Xu, "Domestic and foreign research conditions and development of VR technology", *Modern Business Trade Industry*, no. 2, pp. 279-280, 2009.

[2] Y. W. Yuan, "Research on intelligent equipment virtual simulation technology of digital agriculture", M.S. thesis, Beijing: Chinese Agricultural Mechanization Science Research Academy, 2010.

[3] H. Yin, Z. D. Wang, and J. H. Xu, "Battlefield scenario simulation based on Creator/Vega", *Journal of PLA Science and Engineering University (natural science edition)*, vol. 6, no. 2, pp. 137-142, 2005.

[4] Z. X. Guo, "Research on self-propelled tobacco leaf cropper navigation technology based on machine vision", M.S. thesis, Zhengzhou: Henan Agricultural University, 2013.

[5] S. F. Chen, Z. L. Li, T. Shen, and F. Liu, "Design and test research on variant fertilization hydraulic system", *Hydraulics and Pneumatics*, no. 12, pp. 102-105, 2011.

[6] V. Leemans and M. F. Destain, "A Computer-vision Based Precision Seed Drill Guidance Assistance", *Computers and Electronics in Agriculture*, vol. 59, pp. 1-12, 2007.

[7] V. Subramanian, T. F. Burks, and A. A. Arroyo, "Development of Machine Vision and Laser Radar Based Autonomous Vehicle Guidance Systems for Citrus Grove Navigation", *Computers and Electronics in Agriculture*, vol. 53, no. 2, pp. 130-143, 2006.

[8] Y. Zang, Z. X. Zhu, and Z. H. Song, "Establishment of agricultural equipment virtual test system platform", *Agricultural Machinery Journal*, vol. 41, no. 9, pp. 70-74, 2010.

[9] R. H. Zhang and G. P. Zheng, "Design and implementation of collision detection in real-time drawing of high-fidelity dynamic terrain", *Computer application*, vol. 26, no. 11, pp. 2773-2774, 2006.

[10] H. J. Zhang, J. G. Su, and X. J. Liu, "Research progress of large-scale 3D terrain visualization algorithm", *Computer Science*, vol. 34, no. 2, pp. 10-16, 200.

Received: December 8, 2014 Revised: December 15, 2014 Accepted: December 16, 2014