Retraction Note to: A Method of Balanced Sleep Scheduling in Renewable Wireless Sensor Networks

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Retraction Note to:

Chapter “A Method of Balanced Sleep Scheduling in Renewable Wireless Sensor Networks” in:

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The authors have retracted this article [1] because of the following errors which undermine the paper:

1. In Algorithm 1, the output of S_{awake} , S_{sleep} , TH and E_u are depending on the input of $E_{h,u}$, $E_{c,u}$, $E_{\text{res},u}$, u and η , in which $E_{h,u}$ and $E_{c,u}$ denote the harvesting energy and the energy consumption for the u^{th} node, respectively. However, how to calculate and obtain the $E_{h,u}$ and $E_{c,u}$ are not given in the paper.
2. Equation (7) is not correct. $E_{h,u}$ denotes the harvesting energy for the u^{th} node, which have already considered η . η should not multiply with $E_{h,u}$ in equation (7). Thus, the result of E_u is not correct, which will cause all the following results (the optimal τ , the work mode of the nodes) not correct. It is a very serious problem.
3. In the simulation results and discussion, the side length of the network is assumed to be 480 m and the forder length is assumed to be 60 m. This assumption is wrong. It is impossible for the wireless sensor node to harvest energy through wireless energy transfer with such a long distance.
4. The range of τ shown in the paper is not correct. It should be (0,1). If τ equals to 1, which means the node cannot harvest energy.
5. In the simulation results and discussion, the simulation is performed 100 times under the condition of $\tau = 0.5$. It is not correct. In the paper, τ needs to be optimized depending on TH and E_u . It should not equal to 0.5.

The retracted version of this chapter can be found at
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In addition to the flaws identified above, the authors would also like to acknowledge the similarities with two publications by different authors [2, 3] which unfortunately were not been referenced in the published manuscript.

[1] Song, M., Lu, W., Peng, H., Xu, Z., Hua, J.: A method of balanced sleep scheduling in renewable wireless sensor networks. In: Meng, L., Zhang, Y. (eds.) MLICOM 2018. LNCS, vol. 251, pp. 293–302. Springer, Cham (2018). https://doi.org/10.1007/978-3-030-00557-3_30. Social Informatics and Telecommunications Engineering

[2] Fang, W., Zhang, Z., Mukherjee, M., Shu, L., Zhou, Z.: Energy-utilization aware sleep scheduling in green WSNs for sustainable throughput. In: 43rd Annual Conference of the IEEE Industrial Electronics Society, IECON 2017, pp. 4724–4727. IEEE, October 2017

[3] Fang, W., Mukherjee, M., Shu, L., Zhou, Z., Hancke, G.P.: Energy utilization concerned sleep scheduling in wireless powered communication networks. In: 2017 IEEE International Conference on Communications Workshops (ICC Workshops), pp. 558–563. IEEE, May 2017.