Abstract

In recent years, light bulb is getting smarter because of its smart behavior. It means that it can be controlled via smartphone through a wireless connection and even you may control it when you are not at your home. Now a day’s market place has been occupied with the smart bulbs, replacing CFLs and traditional LED. It is totally differs from the traditional bulb even much more expensive as compare to the traditional one. Smart bulb offers remote control feature along with schedule timer, it means that you have a smartphone as a remote and you can also set a timer to turn off or on these bulbs. Even it can be controlled through GPS installed on your smartphone. It means that when you are a bit far away from your home and you forget to turn off your bulbs, then you can turn off it, your bulb is almost another smartphone that is why it is expensive as compared to the traditional bulb. Now it’s time to replace this smart bulb from new era with much smarter bulb which is going to be proposed, i.e. Real Time Vision Based Smart Bulb Using Image Processing. It will work like a human vision, a bulb which does not require any manual control, it will be operated automatically. It means that it will automatically sense when it should be off and on. When no one is present in the room, then it will automatically off
and when you come, it will automatically on. One more feature is very effective in it, is when you
present in the room and there is no movement for half an hour, then it will automatically off,
because it is practically demonstrated that no one can be totally stable for half an hour when he
is not sleeping or when he is conscious. He must have any kind of movement if he is conscious.
He must be sleeping if he is not responding for half an hour. It will consider that you are
sleeping and bulb should be turned off. Even you may turn off or on this feature as per your
desire. Definitely it will save your electricity when you are not in your home or even you are at
home. It is intelligent enough to control the system by itself and no smartphone or any remote
control device is required. It will be the most intelligent light bulb till now.

References

1. Daeho Kim, Junghoon Lee and Yeongmin Jang, Jaesang Cha, “Smart LED lighting
   system implementation using Human tracking US/IR sensor” in IEEE

2. Jie Zhang and Hwa Jong Kim, “Design of smart LED lighting switch with learning user’s

3. Yen Kheng Tan, Truc Phuong Huynh, and Zizhen Wang, “Smart Personal Sensor
   Network Control for Energy Saving in DC Grid Powered LED Lighting System” IEEE Tran. on
   smart grid © 2012.

4. Young Seek Cho, Jaerock Kwon, Seyeong Choi and Dae-Hee Park, “Development of
   Smart LED Lighting System Using Multi–Sensor Module and Bluetooth Low Energy
   Technology”, IEEE SECON Posters -- IEEE International Conference on Sensing,
   Communications and Networking (SECON), 2014.

   Light Control System using ZigBee Network”, 12th International Conference on Frontiers of
   Information Technology in IEEE, 2014.

   Efficient Smart LED Lighting System for Building Energy Management", IEEE ISCE 2014
   1569954593, 2014.

7. M. Magno, T. Polonelli, L. Benini and E. Popovici, "A low cost, highly scalable Wireless
   Sensor Network Solution to achieve smart LED light control for Green Buildings", DOI

8. Xiaoru Xu, Huiqiang Chen, Budong You, and Xiaobo Wu, “Power Factor Corrected
   Primary Side Regulated Flyback Controller for Smart LED Lighting System”, in IEEE
   978-1-5090-0176-7/15/$31.00 ©2015.

   Lighting with Multiple Dimming and Temperature Automatic Protection Capabilities”, in

10. Ivan Chew, Vineetha Kalavally, Chee Pin Tan, and Jussi Parkkinen, “A Spectrally-Tunable Smart LED Lighting System with Closed-Loop Control”, DOI

11. Qi Yao, Lei Yuan and Yu Bian, "Establishment of Vision Effect Diagram for Optimization
    of Smart LED Lighting", Published in IEEE Photonics Journal. Volume 8, Number 4, August
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### Index Terms

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### Keywords

Smart Bulb, Image Processing, CFL, LED, MATLAB, GPS etc.