BENTHAM SCIENCE

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Thematic Issue Title:

Special Issue on

Solid State Lighting and the Internet of Things

Editor: Dengke Cai

Aims & Scope:

Just a decade ago, Solid-State Lighting (SSL) Light-Emitting Diodes, or LEDs started to revolutionize the lighting market as a transformational change in how light is produced. They are versatile and incredibly energy-efficient, and as their color stability and lumen efficacy continue to increase, they are finding their way into an ever expanding range of general illumination applications. From 2014, Lighting, and specifically LED lighting is becoming the main drivers of the Internet of Things (IoT). Their combination has been broadly adopted in industrial application level, like municipalities, offices, and consumers, which are just touching the surface of what is technically feasible. Several years ago Philips launched what was among the first commercial products controlled through an iPhone app, the HUE with programmability on any visible color and intensity control. The industry has made few consumer products so far using IoT-based controls.

Municipal lighting and office lighting are ideal applications for IoT-based controls. Additionally, they can take advantage of data collection and analysis tools. SSL lighting industrial leaders, like Philips, Osram, GE, Acuity & Cree have made major inroads on them by combining sensor technology, data analytics tools, energy management software, control and communication, and even integrating 4G technology from telecom IP server supplier etc. to enhance energy efficiency through real-time data analytics. The commercial available products on data analytics can provide the ability to optimize light use while dimming, scheduling, and monitoring power usage. Data analytics offers a wide range of options that designers are just beginning to imagine and implement. Building automation is the first aspect of this revolution in lighting controls and data analytics. Another potential applications include involving Lighting with the HVAC control through IoTs platform. U.S.A Department of Energy (DoE) has sponsored several projects to integrate advanced sensor hardware development, communication protocols development and software development for all level energy users, from utility companies to consumers from HVAC and Lighting both under DoE Building Technology Office. Applications that combine the Internet of Things and lighting are limited only by our imaginations. The possibilities are just around the corner.

Following U.S.A DoE scope, this special issue is majorly focused on advanced sensing hardware development (like CO_2 sensor), communication protocols, Visible Light Communication (Li-Fi) & software development, few key elements for IoTs in Solid State Lighting. The special issue is intended to research in the area of Solid State Lighting & IoTs. Prospective authors are invited to submit reviews and manuscripts containing original research in this area.

Key words: Solid State Lighting; LED; IoTs; Sensing; Communication; Li-Fi; Software

Sub topics:
Subject Coverage

Suitable topics include, but are not limited to, the following in relation to Solid State Lighting & IoTs:

- LED chip (epi, phosphor technology & package technology etc.)
- Smart Lighting: Intelligent light, Wireless home automation
- Well-being: Human Centric Lighting
- Electronics: Accessories for lighting, like sensing hardwares
- Visible Light Communication (VLC) or Li-Fi
- IoTs & Cloud & Security
- App and computer based software

Notes for Prospective Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. A Conference paper may only be submitted if the paper was not originally copyrighted or if it has been extended by at least 50% in this case the author must clearly explain the extensions made to the previously published version in their cover letter at the time of submission. All papers will be refereed through a peer review process.

Authors should clearly identify the Special issue in the cover letter.

Approximate Schedule:

• Manuscript Submission Deadline: 06/15/16
• Peer Review Due: 07/15/16
• Revision Due: Nov. 08/15/16
• Notification of Acceptance by the Guest Editor: 09/15/16
• Final Manuscript Due: 10/15/16