

## Notes from the editor – Light to Serve as an Effective Wireless Communications Medium

By Saraju P. Mohanty

First, I share some good news. I came to know recently that the University Grant Commission (UGC) India lists IEEE CE Magazine as an approved Journals: <http://www.ugc.ac.in/journallist/>. This means that CEM is considered as an approved venue to publish research from India which will count towards various academic milestones including student's Ph.D. degrees and faculty promotions. So, I am positive that CEM will receive more, quality submissions from India and will be driver of membership growth of CESoc. UGC is the statutory body of the Government of India for the coordination, determination and maintenance of standards of university education in India. The CE magazine is indexed in Clarivate Analytics (formerly IP Science of Thomson Reuters) and we are hoping to hear about the impact factor soon along with many other IEEE periodicals which were indexed same time. The CEM magazine is also indexed in Computer Science bibliography database called DBLP. In 2016, The CE Magazine has been named the winner in the Regional 2016 STC Technical Communication Awards - Award of Excellence! The STC Technical Communication Awards is one of the most coveted award in technical communications. Also in 2013, CE magazine won an Apex Grand Award for excellence in writing. In summary, CE magazine is in a very positive trend and will continue providing excellent service to its readers and CE community.

A moment of pride for the CE Society. Kees Schouhamer Immink received the 2017 IEEE Medal of Honor--IEEE's highest award--on 25 May at The Palace Hotel, San Francisco, California, USA. He is receiving the award: "For pioneering contributions to video, audio, and data recording technology, including compact disc, DVD, and Blu-ray."

I attended IEEE Panel of Editors 2017 at Montreal. IEEE POE is the meeting of IEEE in which all the Editor-in-Chief (EiC) of all the IEEE periodicals (journal, transactions, magazine, and letters), productions staffs of IEEE, as well as many volunteers interact. IEEE POE provides a platform to interact and learn from each other's experiences. From my interactions and discussions with other attendees, I could get a feel that CE magazine has very good visibility and doing well.

### NEWS – GENERAL

CE Society TV - ICCE 2017 Best Poster Video Award: This article summarizes the Best Poster Video Award competition of ICCE 2017.

The International Symposium on Consumer Electronics (ISCE) is 20 years Old: ISCE that started in 1997 has reached 20 years. This article presents the rich history of ISCE and its impact of CE community.

IEEE Consumer Electronics Society Future Directions Bootcamp on IoT and Connected Car: The future directions committee focused on IoT organized a Bootcamp on IoT and Connected Car at the National University of Singapore (NUS) in April 2017 which focused on the following topics: (1) Advanced system architecture for IoT and Connected Car, (2) Automotive Ecosystem 3.0, (3) IoT Application development for Connected Car, (4) Data processing and management, and (5) Cybersecurity in IoT and Connected Car.

Consumer Electronics Society Distinguished Member Kees Immink Receives IEEE Medal of Honor: This article presents contributions of the Kees S. Immink that led to his prestigious IEEE Medal of Honor.

Visions for the Consumer Electronics Future: IEEE CE Society co-hosted an event at MIT where future vision of CE was discussed. This article provides details of the program.

Consumer Technology and the Life Sciences Technical Community: This article presents activities of the IEEE Life Sciences Technical Community (LSTC) of which CE society is a founding member, which tries to connect with communities such as technology companies, medical, and healthcare communities as well as universities.

## **NEWS – CONFERENCES**

Symposium on IEEE Consumer Electronics Applications in Smart Healthcare Systems: This article presents the details of the Symposium on the IEEE Consumer Electronics Applications in Smart Healthcare Systems held at UK on the 9th March 2017.

## **FUTURE DIRECTIONS**

Visualizing Next Generation Video with Still Photos: This article presents interesting perspectives of enhancing image capability to present high dynamic range and depth which are not typically available in the regular images.

Building Security Perimeters to Protect Network Systems against Cyber Threats: This article gives an overview of cyber threats, traditional security solutions and the advanced security model to overcome current security drawbacks by building security perimeter before communication.

## **ARTICLES – GENERAL**

Lighting the Wireless World: The cover page of the current is motivated by this article. The light emitting diodes (LEDs) can switch their light intensity at a rate that is imperceptible to the human eye which creates an opportunity for Visible Light Communications (VLC). This article presents details of visible light communications (VLC) which has serious potential to present huge bandwidth. VLC can find applications in diverse domains including personal area networks and smart transportation system. In particular, it can have significant impact on the non-RF friendly environments including underwater and mines.

A Novel Data Segregation and Classification Technique to Reduce Power Consumption in Wireless Body Area Networks: This article presents classification scheme that classifies the sensor's readings into urgent, semi-urgent, and non-urgent in the healthcare Wireless Body Area Networks (WBAN).

Big Sensing Data Curation in Cloud Data Center for Next Generation IoT and WSN: There are three critical issues for big sensing data processing, such as scalable big sensing data cleaning, scalable big sensing data compression and Cloud based data curation response for IoT device optimization. This article focuses on big sensing data curation and preparation issues with Cloud Computing under the theme of IoT and conclude the article with future directions.

Interaction Data Detection System to Upgrade Entity Shops: This article presents a system called "Interaction Data Detection System (IDDS)" based on Radio Frequency Identification (RFID) to help offline dealers to detect and analyze the interaction data between customers and products during the sales process.

Processing of Data acquired by DRONE using GIS: This article presents the requirements and algorithms of a Geographical Information System (GIS) which can visualize, analyze and measure the spatial data acquired by unmanned aerial vehicles.

Survey of Smart Health Devices for Stress Detection and Management: This article presents the state-of-art survey of the smart health devices for stress detection and management.

Indoor Localization with Smartphones: Indoor localization is challenging in many indoor spaces including shopping malls, high-rise buildings, hospitals, subways, and mines which are not served by Global Positioning System (GPS).

OF-ViBe: Optical Flow-Visual Background Extractor Algorithm for Motion Detection in Smart Cameras: This article presents a video motion detection algorithm called Optical Flow-Visual Background Extractor (OF-ViBe).

A consumer's perspective on digital games: Game development taking into account consumer experiences is a challenging task which this article tries to address.

New approaches for the integration of Haptic Garments, Big Data Analytics, and Serious Games for Extreme Environments: This article which is based on a keynote at ICCE-Berlin 2016 presents the role of haptic garments to increase realism in gaming.

Evaluation of ICtCp color space and an Adaptive Reshaper for HDR and WCG: Mechanisms such as High Dynamic Range (HDR) and Wide Color Gamut (WCG) imaging present opportunities for realistic and accurate visual information. This article presents approaches to advance the state of the art in HDR and WCG.

Audio Mixer using Audio Console and Software Defined Radio Cooperatively with XMPP: This article presents the usage of a Software-Defined Radio (SDR) to build wireless microphone audio mixing system.

## **REGULAR COLUMNS**

Bits Vs. Electrons -- Whither Consumer Electronics: This article which means “Where to CE” presents a very good perspective of CE technology trend and the role of IEEE.

Storage Corner -- Market Trends are Driving Digital Storage Choices for Consumer Devices: This article presents discussions on market trends that are driving digital storage choices for CE systems.

Hardware Matters -- A Firefly Algorithm Approach for Hardware Accelerators in CE Devices: This article presents details of hardware accelerator design with specific emphasis on a firefly based on design approach.

Product Safety Perspectives -- LED Electronics, Harmonic Issues and Augmenting Standards Can Consumers Help Manage Harmonic Emissions?: In the cover theme LED has been explored as a possibility of visible light communications. This article presents, three reputable international brands of energy efficient LED lamps have been tested from a power quality perspective and a comprehensive analysis of their harmonic performance has been presented.

CTA Insights -- Engineering Our Connected Lives: The article summarizes Consumer Technology Associate (CTA) survey to relate CE system purchases of citizens to related that with their daily live.

Standards Corner -- IEEE vs. CTA in Creating NeuroTech Standards for EEG Data Accessibility, Interoperability, and Usability: This article presentations comparative perspective of the creation of NeuroTech standards for EEG data accessibility, interoperability, and usability.

IP Corner -- IP and Product Liability Challenges in 3-D Printing: This article presents some of the challenges faced by various stakeholders ranging from IP right holders, manufacturers, individual users in 3-D printing.

Professional Development Corner -- Ten Things You should never have in your resume: This issue starts this new column to present various aspects of professional development which can helpful to various personnel, specifically students, early career individual. As a start of this column this article presents ideas of better resume presentation.

## **SOCIOECONOMIC IMPACT**

Implantable Medical Device Tells All: Ueberveillance Gets to Heart of the Matter: This article presents the paradox of “uberveillance”, which denoted “an omnipresent electronic surveillance facilitated by technology that makes it possible to embed surveillance devices in the human body”. Case studies are also presented for the issues encountered due to connected healthcare with emphasis on personal cardiac data.

Are You Addicted to Your Smartphone, Social Media and More?: This article presents citizen’s usage behavior with respect to smartphone and social media.

The Next Generation in Personnel/People Tracking: This article presents details of a RFID based real-time locating systems (RTLS) which can monitor the location and movements of tags affixed to products, and vehicles.

Amazon’s Echo Look: Harnessing the Power of Machine Learning, or Subtle Exploitation of Human Vulnerability?: This article presents different perspectives of the use of machine learning technology for shopping choices.

## **PRODUCT AND BOOK REVIEWS**

Book Review - A conversation with the Innovator in You: This article presents review of a book titled “A conversation with the Innovator in You”.

## **LOOKING FORWARD**

I am quite excited to inform that from the year 2018 we move forward with 6 issue per year version from the current 4 issue per year. I sincerely hope that 6 issue per year will have the following advantages: (1) Timely publication of articles. (2) Timely publication of news. (3) Reaching members more often. (4) Increase member participation. (5) Increase membership drive. (6) To be par with other established IEEE magazines. I would like to thank you all for the opportunity to contribute to CEM and serve the professional society and looks forward to future. I appreciate time, support and contributions of all members of the editorial board, reviewers, and authors. I assume that I will have their stronger support when we move to 6 issue per year. Finally, I am chairing ICCE 2018, the flagship conference of CE Society, I would invite all researchers to participate in any capacity such as authors, reviewers, attendee. The theme of ICCE 2018 which is 36<sup>th</sup> version of the ICCE is “Cybersecurity”. ICCE 2018 co-located with International Consumer Electronics Show (CES) as its research/education component; CES is the world's largest CE show with 3,800 exhibiting companies, 300 conference sessions and more than 165,000 attendees from 150 countries.