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Biosensors and Bioelectronics Advanced Technology

Chung Li*

Department of Chemical Engineering, Virginia TheologicalUniversity, USA

Biosensors are the products of advanced technology that combines the biological sensitivity and the computational prowess of microprocessors. The field istruly interdisciplinary. Biosensors have a wide range of applications with great potential from monitoring personal health and fitness levels to tracking food consumption and environmental assessment. Unlike analytical industrial and healthcare services modes, biosensors are portable and at the same time, they are cost-effective and simple to operate. These analytical devices that combine the principles of a biological phenomenon with Physico-chemical detection have had a great impact on the progress of biomedical science and engineering such as the development of cardiac pacemakers, blood glucose meters, diagnostic devices including imaging technology.Bioelectronics deals with the integration of biomolecules with bioelectronic elements yielding functional devices. There has been a great deal of progress made in bioelectronics including integration of enzymes, antigens, antibodies, DNA, and protein to electronic units for designingand fabrication of biosensors for various applications including clinical diagnosis, detection of pathogens, analysis of food, environmental monitoring, and even in defense.The coupling of biological neurons withelectronic components has given rise to the possibility of biological computation, storage of information, and information retrieval processing units. Biofuel cells have also been developed. The application of nanotechnology for designing biosensors has also made great progress. Biological molecules were successfully coupled to semiconductor and metallic nanoparticles having industrial, healthcare, and environmental applications. Journal of Biosensors and Bioelectronics is a peer-reviewed journal publishing scholarly articles at a quarterly frequency. The Journal covers all the relevant topics coming under biosensors and bioelectronics including bioactuators, health care applications, packaging and assembly, clinical validation, drug delivery,electrochemical transducers, photometric methods, peizoelectric and thermistorbased transducers, electroanalytical methods, immunosensors, nanodevicesas well as microfluidics biosensor.The journal focuses on designing, developing and application of various types of advanced biosensors for future applications including that of space. The journal garners interest among scientists, physicists, chemists, biologists, environmental activists, medical professionals, electronic and telecommunications engineers, and industrial personnel.

This issue comprises research articleson the use of x-ray diffraction technology to derive precise information on the atomic changes of the minerals; identification and differentiation of the parasitic helminth eggs based on their electronic properties such as diode and active negative resistance behavior; designing of a smart bio-inspired device that functions on the voltage generating ion transport through the xylem and phloem of the fig tree. Such potential represents a fingerprint electronic stimulator for the recognition of cationic and anionic species with improved detection limits. These findings have immense potential in optimizing methods for biosensor and bioelectronic-based material characterization and application. I extend my gratitude to the contributing authors for sharing their valuable research outcomes and extend my sincere appreciation to the editors and reviewers for bringing out the scientifically sound presentation and releasing the issues as per the journal publication schedule.

***Address for Correspondence:** Chung Li, Associate professor, Department of Chemical Engineering, Virginia Theological University, USA, E-mail: chungli@vt.edu*

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