



Journal of Medical Signals and Sensors (JMSS)

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Special issue on State-of-the-Art Wireless Wearable Body Sensor for Healthcare Applications

The healthcare industry is one of the fastest-growing industries globally that plays a vital role in the physical health of people and the economy. It is forging the world to a better future by witnessing new technologies to address the need for clinical diagnosis and efficacious treatment. Advances in technologies are transforming healthcare into the next revolution creating a broader spectrum of healthcare services with IoT smart sensors networks that encompasses various digital parameters to analyze medical data. Smart wearables such as fitness bands, wrist bands, and smart implants are inbuilt with effective sensor networks to collect patient data and transfer it to physicians and users to enable live monitoring of their health. This is one of the significant applications of healthcare 4.0. Wearable sensors are more reliable for preventive methods in different levels of medicine that yield accurate results for perioperative monitoring. It aids in cognitive solutions for predicting emergency conditions of patients at critical conditions. These sensors help older people and chronic patients record their health conditions for better treatment and rehabilitation when integrated into routine care. Many health line industries have initiated wearable smart sensors to combat the worldwide demand for coherent medical care. Conventional monitoring systems restrict patients' mobility due to the prevalence of complex connections using cables, and some may cause skin irritation or infections that cause deterioration of health conditions. However, implantable and wireless smart sensors eliminate the silos in traditional healthcare approaches stepping into healthcare 4.0 with advancements in artificial intelligence and Internet of Things approaches.

Wearable sensors are common among the public as it monitors the heart rate and pedometers for medical reasons and is used as part of a fitness regime. This advanced system has reduced the strain on the healthcare sector of gaining populations, increasing chronic disease reports requiring long-term care and rising cost. Chemical sensors aids in real-time monitoring of body fluids such as tears, blood, and



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sweat which is used as a testing parameter for clinical diagnosis. Glucowatch is being used widely in monitoring the glucose level in people with diabetes with high accuracy. Implantable biosensors can continuously monitor metabolite levels without patient intervention regardless of patients' physiological state. These sensors intensively investigate the nerve stimulation in the brain through electric signals to control the delivery of stress and pain. There are some challenges involved in the real-time implementation of smart sensors as it requires sufficient infrastructure to analyze and interpret the data from smart devices. Security is the other primary concern that staves off people from using sensors in the progress of medical treatment. Research needs to be accomplished to derive cost-effective sensors implementation strategies and develop instructive awareness among the public. Furthermore, the development of micro wireless sensors ideally would be used in clinical systems, saving the cost and power involved in data processing and communication. The particular issues enumerate the applications of wearable and implantable sensors in the healthcare sector and their future advancements. We invite scholars and investigators to contribute research articles that fall under the scope of intelligent sensors for enhanced medical systems and innovations to address challenges in using wearable sensors for medical diagnosis.

Topics of inters:

- Application of multi smart sensor for tumor detection
- Role of wearable sensors in pain reduction for elderly patients in healthcare 4.0
- Role of IoT and Artificial intelligence in healthcare 4.0
- Biosensors and their advantage over diabetes management



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- **Role of wearable smart sensors for fitness regime population.**
- **Nano-robots and their reliable applications towards drug delivery**
- **Nanomaterials and their role in safer imaging of diseased tissue.**
- **Wearable computing and its applications in remote sensing health diagnosis.**
- **Cost-effective techniques of implementing sensors in clinical diagnosis**
- **Convictional sensors Vs wearable smart sensors: A brief note**
- **Zig bee embedded smart sensors for wireless communication Deadlines**

Important Dates:

- ✓ **First Submission Deadline: 15 August, 2023**
- ✓ **Notification of First Round Decision: 05 November, 2023**
- ✓ **Revised Paper Submission Deadline: 27 February, 2023**
- ✓ **Notification of Final Decision: 30 May, 2024**



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