J-BHI Special Issue on

"Health Engineering and Informatics Driven by the Industry4.0 for Aging Society"

As a traditional research topic of biomedical engineering and health informatics, the aging of population has been globally recognized as one of the top grand challenges. The age-related diseases such as neurodegenerative diseases, cardiovascular and cerebrovascular diseases, and psychological diseases have become the primary killers of human. From economic point-of-view, these diseases have consumed the major portion of healthcare resources due to the long course of disease and large patient base. Pulled by this grand social challenge, automation technologies are dramatically "spilling out" from the traditional scenarios such as factories and workshops to biomedicine and healthcare. Especially in the context of the fourth revolution of industry (Industry4.0), cross disciplinary synergy of expertise and deep convergence of the automation technologies, biomedical engineering, and health informatics are reshaping the research landscape in academia and industry towards the rapid development of Health Engineering, an emerging interdisciplinary field for the predictive, preventive, precise and personalized medicine. This has offered an unpresented opportunity for solving the challenges caused by the aging of population.

The goal of this special issue is to publish the latest research advancement in the convergence of automation technology, biomedical engineering and health informatics. The application scenarios can cover single or multiple scenarios of health engineering such as primary care, preventive care, predictive technologies, hospitalization, home care, and occupational health. We focus on the cross disciplinary approaches, solutions, and initiatives rather than single disciplinary ones. Only unpublished original articles will be accepted.

Topics include but are not limited to:

- Theories, models and tools for optimizing and operating elderly care facilities, services and processes
- Caring robots and assistive equipment for elderlies
- Advanced sensing components, networks, and systems for age related diseases
- Flexible, wearable, and implantable biosensors for prognosis, diagnosis, treatment, and medication
- Long term and unobtrusive monitoring for elderlies
- Preventive medicine powered by data analytics, unobtrusive monitoring and Artificial Intelligence
- Age friendly living spaces and working spaces with integrated biomedical devices and systems
- Cyber-Physical-Systems approach in pharmaceutical management and healthcare logistics for elderlies
- Deterministic communications and controls in remote medicine for elderlies
- System Engineering-based methodologies and practices in Health Engineering

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