Special Issue

Intelligent Communication Technologies for Health and Biomedical Applications

Message from the Guest Editors

The healthcare industry is undergoing a major transformation, driven by the integration of intelligent communication technologies across multiple scales. In micro-scale scenarios, technologies encompassing molecular communication, terahertz communication, and neural communication enable the development of nano-networks. These nano-networks offer transformative applications, such as targeted drug delivery, biochemical sensing, and cellular-level health monitoring, which are critical for personalized and minimally invasive treatments. In macro-scale scenarios, intelligent communication technologies are enhancing real-time diagnostics, large-scale patient monitoring, and data-driven healthcare decision making. These systems enable healthcare professionals to make more accurate, timely interventions, improving patient outcomes on a large scale. To support these multi-scale applications, robust underlying technologies are essential. Classical communication algorithms, as well as AI and machine learning-based tools, are critical for optimizing signal detection, data transmission, and system efficiency across both micro- and macro-scale systems.

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guest-edited by leading experts in selected topics of interest.

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