Advances in Wireless Communication, Networks and Automation

I am delighted to write a foreword for this special issue on “Advances in wireless Communication, network and Automation” for International Journal of Sensors, Wireless Communications and Control. The recent trends and emerging advance in the field of wireless communications, network technology, automation and control of the systems are playing a pivotal role in the field of engineering and opening up plethora of applications in diverse and promising areas. The wider areas of applications encompass cellular communications, LTE, 4G and 5G, satellite communications, wireless communication networks, social networks, delay tolerant networks, wireless sensor networks, vehicular networks, smart antennas, beamforming, molecular communications, and other new trend topics about wireless communications and networking.

Recently, the advances in various wireless communication protocols in technologies such as 5G, RFID, Wi-Fi-Direct, Li-Fi, LTE, and 6LoWPAN have greatly boosted the potential capabilities of networking and communication and made it become more prevalent than ever, with emerging technologies in other areas such as sensing, wireless recharging, data exchanging, and processing.

In the paper “Pre-deployment Strategy for Maximizing Barrier Coverage in Wireless Sensor Network” authors have proposed a novel Minimum Radius Algorithm for maximizing the barrier coverage and increasing the operating life of the network by reducing the energy consumption of sensor nodes.

In the paper “Piezoelectric Energy Harvesting Methodologies using Ambient Mechanical Vibration: Design perspective and challenges”, the major advancement made in the field of micro-electromechanical systems based piezoelectric energy harvester to extract ambient vibrations and convert them into usable electric power have been discussed. Increasing power generation of piezoelectric energy harvesting and development of low power CMOS technology has brought the supplied power requirements and required power level adjacent to one another.

In the next research article “Circular Slotted Antenna with CPW feed for GSM and UWB Applications” a study is supported out to design a planar, cost-effective, dual-band, small and manufacture compatible unified GSM-UWB band antenna for applications using these UWB antennas such as modern civil and military applications, wireless and radar communications, etc.

In the research paper “An Efficient 4X4 Mesh structure with a combination of two NoC router architecture”, a new combination of two routers is used i.e. conventional and proposed router architecture and analyzed, which shows significant area reduction as compared to the conventional model and there is no effect on delay and power requirement.

In the coming era it will become central to emerging technologies including robots, drones, self-driving vehicles and new medical devices over the next five years. Considering the manifold and wide ranging applications of this field, the objective of this special session is to provide the researchers a platform to present the state of the art innovations, researches, design and implement methodological and algorithmic solutions for wireless communication, and network control systems.

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REFERENCES


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