IEEE INTERNET OF THINGS JOURNAL

A joint publication of
IEEE Sensors Council, IEEE Communications Society, IEEE Computer Society, and IEEE Signal Processing Society

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IEEE Internet of Things Journal Special Issue on "Internet of Nano Things (IoNT)"

In recent years, the field of Nanotechnology has witness tremendous developments. These developments have led to novel materials (e.g. graphene) that could be integrated to create nanomachines. These nanomachines can lead to new applications that could benefit various industries, including healthcare, industry, as well as the military. The new emerging field of *nano communications* aims to enable communication between the nanomachines. The communication process can be categorized into *molecular communications*, where the communication process is largely in a biological environment, and *Electromagnetic* (*EM*) *communications*. Interconnecting these nanoscale communication networks to the wider Internet, could bring along new promising applications. This in turn will extend the *Internet of Things* to the **Internet of Nano Things (IoNT)**. While the IoNT will open new opportunities for future applications, the interconnection of the nanonetworks to the wider Internet will bring along new challenges. These challenges will range from developing new communication and interface mechanisms between the nanonetworks and micro scale networks, techniques to handle the large quantity of data that will emerge from nanonetworks, new service models at the application layer to handle data from the nanonetworks. The theme of this special issue will bridge the IoT and nano communications. The findings of this special issue, will help pave the way for the new field of IoNT that can address these challenges. Topics of interests include (but are not limited to) the following categories:

- Network Architecture and Protocols for IoNT
- Moving from standardizing IoT to IoNT
- Software and service platforms for IoNT (e.g. big data management in IoNT)
- Security, privacy, and trust issues for IoNT
- Middleware design for IoNT
- Electromagnetic Nanonetworks for IoNT (e.g. channel modeling, physical layer design for terahertz band communication and its link to IoT)
- Synthetic biology and its role in IoNT (e.g. design and development of biological nanomachine)
- Molecular communication nanonetworks for IoNT (e.g., molecular diffusion; flagellated bacteria; molecular motors and its connectivity to the IoT)
- Device design for nanonetworks interface to IoT (e.g., micro to nanoscale gateways)
- Future and visionary applications of IoNT (e.g. wearable IoNT, smart cities and IoNT)

Important Dates

Submissions Deadline: January15th, 2015
Revision Due: May 15th, 2015
Final Manuscript Due: August 30th, 2015
First Reviews Due: March 15th, 2015
Second Reviews Due/Notification: July 30th, 2015
Publication Date: December 2015

Submission

The special issue seeks submission of papers that present novel original results and findings on IoNT. Solicited original submissions must not be currently under consideration for publication in other venues. Author guidelines and submission information can be found at http://iot.ieee.org/journal. All manuscripts should be submitted through Manuscript Central: http://mc.manuscriptcentral.com/iot.

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