



## CALL FOR PAPERS

### SELECTED AREAS IN COMMUNICATIONS SYMPOSIUM

#### MOLECULAR, BIOLOGICAL, AND MULTI-SCALE COMMUNICATIONS TRACK

##### Track Chair

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##### Scope and Topics of Interest

As a result of recent advances in MEMS/NEMS and systems biology, as well as the emergence of synthetic bacteria and lab/process-on-a-chip techniques, it is now possible to design chemical “circuits”, custom organisms, micro/nanoscale swarms of devices, and a host of other new systems at small length scales, and across multiple scales (e.g., micro to macro). This success opens up a new frontier for interdisciplinary signaling techniques using chemistry, biology, novel electron transfer, and other principles not previously examined. This track is devoted to the principles, design, analysis, and implementation of signaling and information systems that use physics beyond conventional electromagnetism, particularly for small-scale and multi-scale applications. This includes: molecular, quantum, and other physical, chemical, and biological (and biologically-inspired) techniques; as well as new signaling techniques at these scales. As the boundaries between communication, sensing and control are blurred in these novel signaling systems, research contributions in a diversity of disciplines are invited.

Original research articles on biological, molecular, and multi-scale communication are solicited in, but not limited to, the following areas:

- Modulation, detection, and estimation
- Mathematical modeling of biological, molecular, and multi-scale communication
- Channel modelling, including diffusion, flow, active transport, biological, and microfluidic channels
- Biological, molecular, and multi-scale networking
- Nanosensor networks
- Components of biological, molecular, and multi-scale communication systems
- Implementation, laboratory experiments, and testbeds
- Molecular, DNA, and nano computing
- Systems biology and biological circuits
- Analysis and control of biological systems
- Information/communication theoretical tools for biological systems
- Unconventional electromagnetism for small or multi-scale applications
- Experiment-based studies on information processes and networks in biology
- Industrial applications

## **Submission Guidelines**

The IEEE ICC 2018 website provides full instructions on how to submit papers & the paper format.

You will select the desired symposium/track when submitting.

**The paper submission deadline is October 15, 2017.**

Only PDF files will be accepted for the review process and all submissions must be done through EDAS at <http://edas.info/>