

# Call For Papers

## The 19th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC 2022) Special session 5: Towards a Zero-Carbon Home/City/Society with Ubiquitous Intelligence and Computing

### 1. Introduction

To alleviate the climate change (called for by the Paris Agreement), a global “campaign” has been launched to pursue zero-carbon emissions in homes, cities, and eventually the whole society. A growing number of countries (e.g., China, US and EU), companies (e.g., Google, Amazon and Microsoft) and many institutions are pledging to get to zero-carbon emissions. Nevertheless, transitioning to a society with zero-carbon emission is with great challenges and calls for a complete transformation of how we produce, consume, and move about.

Ubiquitous sensors, devices, networks and information are paving the way towards a smart world in which computational intelligence is distributed throughout the physical environment to provide reliable and relevant services. The ubiquitous intelligence and computing (UIC) is expected to enable new breeds of applications and systems and change the computing landscape. With such advances in UIC technologies, we see great opportunities that they can help with the zero-carbon target. Such opportunities can be found in studies from at least two aspects: i) zero-carbon emission by UIC and ii) zero-carbon emission for UIC. For the first aspect, a number of UIC technologies or solutions have the potential to significantly reduce the energy consumption and carbon emissions in homes/cities/societies or other scenarios. For the second aspect, we can also provide low-power or high energy efficiency UIC designs, which helps cut down the energy consumption and carbon emission of homes/cities/societies caused by UIC itself.

This is a special session of the 19th IEEE International Conference on Ubiquitous Intelligence and Computing (<http://www.ieee-smart-world.org/2022/uic/>). We encourage the submission of papers with new theory, analysis, methods and applications in pursuing zero-carbon emissions by and for UIC. Please submit your paper via the submission site (<https://edas.info/N29956>) and select the special session of “Towards a Zero-Carbon Home/City/Society with Ubiquitous Intelligence and Computing” (marked with “**UIC-HCS**”).

### 2. List of Topics

The topics of interests for this special session include, but are not limited to:

- Green ubiquitous computing
- Green AI in ubiquitous computing
- Zero-carbon emission for ubiquitous computing
- Ubiquitous computing for zero-carbon emission
- Low-power designs for smart home/city/society
- Energy efficient solutions for smart home/city/society
- Green/sustainable computing for smart home/city/society
- Carbon-neutral computing for smart home/city/society
- Trade-off between performance and energy consumption
- Real-world UIC applications for zero-carbon emission

### **3. Session Chairs Information.**

- **Guoming Tang** (gmtang@nudt.edu.cn), National University of Defense Technology, China
- **Yuntian Chen** (ychen@eias.ac.cn), Eastern Institute for Advanced Study, China

### **4. Tentative submission deadline of the special session.**

- September 1, 2022: Deadline for paper submissions
- October 1, 2022: Authors Notification
- October 31, 2022: Camera-ready submissions
- Decemeber15-18, 2022: Conference