

Call for Papers
IEEE Instrumentation and Measurement Society
IEEE Instrumentation and Measurement Magazine (IMM)

**Special issue on
'Measurement systems for Cognitive/Well-being Assessment within Smart Homes'**

The integration of advanced ambient or wearable sensors, methods to detect and assess human activity and behaviors including novel devices & systems in association with *ad hoc* signal processing, artificial intelligence and machine learning have allowed the design of new systems to allow for the on-going assessment of Cognitive and Well-being changes within personal residences. These have received particular attention for the aging population that may be experiencing natural and illness related decline while also wishing to maintain their independence.

The main aim of this special issue is to offer a forum that facilitates professional exchange of knowledge related to the design of new sensors, circuits, systems, assessment/measurement methods and presentation of the recent research advances in the field. The scope of this special issue covers aspects ranging from fundamental research to all kinds of advanced technologies and actual field trial application results.

A special emphasis will not be only devoted to cover the current state-of-the-art, but also emerging trends.

Prospective authors are invited to submit tutorial-style papers on topics related to Cognitive/Well-being assessment within Smart Homes including, but not limited to the following:

- New sensor devices and systems
- Sensor fusion, sensor substitution and other sensor processing techniques.
- Cognitive and Physiological parameter monitoring and assessment
- Human sensory perception reinforcement
- Human activity behavioral monitoring and assessment
- Activity of daily living identification, classification and assessment
- AI, predictive analytics, and decision-making under uncertainty
- Integrated care
- Medical and instrumentation uncertainty & quality of measurement properties,
- Instrument international validation and patient safety
- Standards for measurements
- Assistive device and systems for impairments, diseases, and older adults.

Papers should present to the wide audience a general overview of one scientific subject of your interest really framed in the Instrumentation and Measurement (IM) field.

Contributions dealing with Open Problems in IM are very welcome, also presenting challenging and ambitious solutions, which could be habilitated by current and advanced technology.

While drafting your paper to be submitted to IMM, you are strongly invited to take care that:

-The paper is properly framed in the field of Instrumentation and Measurement. This could be achieved by properly structuring the Review of the State of the Art and motivations of your work.

-In line with mission of the IEEE I&M Magazine, the paper aims to provide an overview of the topic addressed to the general I&M audience.

- The paper format is compliant with the IMM's author guidelines: <http://iee-ims.org/publications/im-magazine>

In general, each paper should contain 3500-5000 words, and present 4-6 figures.

When your paper is ready, please submit it completely through:
<https://www.editorialmanager.com/IMM/default.aspx>

We expect to receive your paper by December 30th, 2020 to begin the review and production process.

Schedule:

Full-length paper submission: December 30th, 2020

Revised manuscript due: February 25th, 2021

Guest Editors:

Dr. Bruce Wallace, Executive Director AGEWELL NIH SAM3

Dr. Frank Knoefel, Physician, Bruyère Memory Program, Elisabeth Bruyère Hospital.