

## Being Green in I&M

**G**reen small measurement devices for a green world! This is the message we would like to offer to our readership through this special issue of *Instrumentation and Measurement Magazine*. Outcomes of these realizations



can be observed from several perspectives. Green means to protect the environment, but green also means to recycle materials and to let new materials come into play in the field of electronics and sensors. Moreover, it would also allow users to be protected from hazardous and dangerous materials. But “green” means much more than this...

These are risks we are now facing in the IT age. Many researchers are providing strong efforts to reduce the negative impact of electronics on the environment.

This is because the fabrication of such products needs amounts of hazardous substances to be wasted in the environment. Let's think to the current idea of “smart dust.” Thousands of small and autonomous sensors are dispersed in the environment to collect data. This is a strategic approach, especially in cases when the intensive monitoring of hostile environments, maybe as a consequence of a natural disaster, is the target to be reached. And in fact it is! However, such devices will never be collected back, and hence it would be terrific to spread out green pieces of materials.

Talking about green materials, a fascinating example is bacterial cellulose. It is amazing, and I would never imagine that bacteria would be able to produce convenient substrates for the development of electronic components, including sensors. Considering the wide use and the nowadays spreading of Information and Communication Technology and subsequent need to monitor thousands of devices, to process signals and to transmit data gathered by sensors, the availability of green substrates would be really strategic. And, it will be also useful for the fast prototyping of sensors and electronic components.

I perfectly remember the first time I printed out my first strain gauge on a flexible substrate by using a desktop inkjet printer and a functional ink. It was a very fast pathway from the layout to the device, and it was a real joy to see the sensor working and really measuring stress. That was not so green, I must say, but the idea of fast prototyping green and inexpensive sensors is a real challenge to be addressed by the scientific community.

I would like to thank the Guest Editor who did an excellent job in publicizing this issue, and thus was able to collect such interesting contributions. He is a real expert in the field of polymeric sensors and actuators, and thanks to his outstanding work, he is now a well-recognized landmark in the framework of green sensors.

Have a time nice reading!

*Bruno*