

New Trends in Sensors' Systems and Corresponding Signal or Data Processing

Demands on the speed and accuracy of measurement increase in all areas in general. Sensors and sensors' systems are the key parts that influence it. Withal they are an essential part of all control systems, they also serve to ensure quality of production or they are used to assure the reliability and safety in various areas. These are the grounds for publishing this special issue. An inseparable part of such systems is also corresponding software for signal processing, of course.

Conference "Intelligent Data Acquisition and Advanced Computing Systems" proceeds each 2 years. Its main goal is to provide a forum for high quality reports on the state-of-the-art Theory, Technology and Applications of Intelligent Data Acquisition and Advanced Computer Systems as used in different areas. At IDAACS2011 the 197 papers (from 242 received) were accepted and scheduled for presentation; they are organized into the 24 oral and the 5 poster sessions.

Papers concerning sensors' systems and corresponding signal or data processing were placed in 5 sessions: *Instrumentation and Data Acquisition Systems, Virtual, Intelligent and Distributed Instrumentation Systems, Robotic, Embedded and Autonomous Systems, Digital Image and Signal Processing and Special Stream in Wireless Systems*. 8 of them, which we regarded as the most interesting, were selected and after their extension published in this special issue. They were chosen to show in several examples any progressive up-to-date solutions.

The common trait of published articles is implementation of advanced algorithm of signal and data processing in sensors' systems to increase their quality - accuracy, efficiency, speed etc. in different applications. It concerns e.g. real time signal processing in multi-camera system, increasing of accuracy and simplification of calibration using neural network, optimization of data acquisition to reduce their amount, suppression of disturbing influences using suitable signal processing, etc.

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