

# IEEE Transactions on Industrial Electronics

## CALL FOR PAPERS

### “Industrial Implementations of Radio Frequency Identification (RFID)”

#### The Theme

Radio frequency identification (RFID) tags have created emerging applications for tracking, sensing and identifying various targets in wide-ranging areas such as supply chain, medical and biological industry, agriculture, industrial manufacturing, transportation, airline baggage handling, aerospace, defense and homeland security. RFID tags do not require line-of-sight for reading. Within the field of a wireless reading device, it is possible to automatically read hundreds of tags in a second, which can revolutionize the inventory tracking and management. RFID tags combined with bio-sensors can detect the presence of biological and chemical agents, providing an essential terrorism-fighting tool. Newly developed techniques for solving challenging problems are now appearing. RFID system consists of technologies in different levels including protocols and standards, software and data base, security and encryption, tag and reader integrated circuit designs, data storage and transmission, user interfaces and back-end system designs for various applications. Challenges range from designing low-power and highly-efficient RFID tag ICs, developing anti-collision algorithm to handle multi-RFID co-operations, securing back-end software to preventing wireless monitoring of inventory and detecting counterfeit products. RFID applications remain a fertile and rich area for researches with big economic and human impacts in the years to come. This special section will focus on recent advances and technical challenges in wireless identification and sensing systems, their circuit implementations and their applications in traditional or new areas. Topic areas of interest include, but are not limited to:

- **System Architecture & Analysis:** New RFID protocols for passive, semi-passive and active reader/tag anti-collision and wireless communication. Novel system designs for mobile devices, reader system architecture, scalable and reconfigurable systems, wireless communication system analysis, spectral management, data access and privacy issues, and co-existence of RFID systems.
- **Circuits & Sensors:** Integrated circuit designs for RFID tag/reader, sensor and communication transceivers with low power, high efficiency, and low cost. Fusion of RFID chips with other systems such as bio-sensors, GPS, wi-fi, Zigbee, etc and non-silicon-based RFID devices are also encouraged.
- **Antennas & Propagation:** Antenna designs and analysis on different packages and contents such as metal and liquids, and wireless channel modeling.
- **Security:** RFID security features and security solutions for various applications.
- **Testing:** Innovative testing and modeling procedures for tag and system performance for reliability and interoperability.
- **Applications:** Integrating RFID into operational systems in the supply chain, factories, hospitals, aerospace, homes, homeland security and urban systems.

#### Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Electronics <http://tie.ieee-ies.org/tie/>  
Please submit your manuscript in electronic form through Manuscript Central web site:  
<http://mc.manuscriptcentral.com/tie-ieee>. On the submitting page #1 in popup menu of manuscript type, select: SS on Radio Frequency Identification (RFID)

#### Timetable

**Deadline for manuscript submissions June 10, 2008**

**Notice of manuscript revision or acceptance: September 2008**

**Estimated publication date: January 2009**

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