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IEEE Sensors Journal

Special issue on

Sensors for Industrial Process Tomography

Process Tomography is an emerging non-invasive imaging technique for understanding complex 3D processes and, in many cases, for establishing appropriate strategies for their optimisation. The diversity of physical processes (modalities) that allow sensing by Process Tomography results in a wide variety of sensor types, design principles and performance goals. However, a common feature of these sensors is the requirement to operate in an industrial environment, which can be hostile, i.e. fast changing, chemically aggressive and offering very limited access. The quality of the measured data needed for tomographic image reconstruction crucially depends on the individual sensors, as well as on the merits of the sensor system as a whole. As various modalities emerge and mature, some of the challenges that need to be addressed are the design of the individual sensor and sensor electronics, as well as the related data acquisition and pre-processing.

It is intended that this Special Issue of the IEEE Sensors Journal will show the state-of-the-art in sensors for a broad range of modalities, giving the opportunity for active researchers in academia and industry to judge the relevance to their process of interest. Original research contributions, tutorials and review papers are sought in areas including (but not limited to) sensors for:

- Electrical capacitance tomography
- Electrical resistance/impedance tomography
- Electromagnetic inductance tomography
- Microwave, terahertz and NMR tomography
- Optical tomography
- Gamma and X-ray tomography
- Acoustic tomography
- Miniature tomography systems
- Multi-modality tomography systems
- Emerging tomographic modalities

Solicited and invited papers shall undergo the standard IEEE Sensors Journal peer review process. All manuscripts must be submitted on-line, via the *IEEE Manuscript Central*TM, see <http://sensors-ieee.manuscriptcentral.com>. Upon submission, please indicate in the Author Comments section, and also by e-mail to Ms. Linda Matarazzo (l.matarazzo@ieee.org), that the paper is intended for this Special Issue. Authors for this Special Issue are encouraged to **suggest names of potential reviewers** for their manuscripts in the space provided for these recommendations in *Manuscript Central*. For manuscript preparation and submission, please follow the guidelines in the *Information for Authors* at the IEEE Sensors Journal web page, <http://www.ieee.org/sensors>.

Deadlines:

- Manuscript Submission: January 5, 2004
- Notification of Acceptance: July 15, 2004
- Final Manuscript due: September 1, 2004
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