IEEE Transactions on Medical Imaging

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Special Issue Call for Papers on *Low-Dose Computed Tomography*

Computed tomography (CT) is now a widely used imaging modality for screening and diagnosis, emergency medicine, image-guided interventions, and monitoring of therapeutic responses. As the use of CT has grown, so has concern about the associated radiation dose, and while the biological risk associated with low (mSv) levels of radiation is not established, the concern is sufficient to motivate major efforts from academic, government and industrial researchers to develop CT methodologies for as low dose as possible while achieving the clinical tasks, hereafter called low-dose CT (LdCT). These include the investigation of new detector technologies, such as photon counting detectors, the development of new data acquisition protocols and associated innovative image reconstruction algorithms, and the development of improved metrics for assessing whether clinical performance can be maintained while reducing radiation dose. To review these developments and facilitate further advances in LdCT, this special issue calls for research papers, each of which shall comprise all the three major components of: (1) a review of the current state of the topic of interest (for example, hardware design or image reconstruction); (2) the introduction of a new development or improved method, statement of its innovation, and demonstration that it yields a statistically significant improvement over a current method of the reviewed arts for a clinically relevant task (for example, detection of lung nodules at a size threshold); and (3) discussion of the potential for further improvement based on extensions of the presented method.

This special issue aims to provide a forum for both established experts and new investigators to share their knowledge and insights for the further development of LdCT. Each paper shall clearly present the above three major components. Acceptance preference will be given to papers that meet the above high bar. Topics include, but are not limited to:

- New detector material development and/or new system design;
- Efficient data acquisition, data calibration and/or correction strategies;
- Innovative image reconstruction methods;
- Evaluation strategies to assess the diagnostic accuracy of LdCT methods.

Authors must submit their manuscripts electronically. See https://ieee-tmi.org/authors/submit-a-manuscript.asp for details. State that the submission is for this special issue in the cover letter. Authors intending to submit articles are encouraged to discuss their submissions with the Guest Editors to determine suitability for this special issue.

Guest Editors:

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Schedule:

Deadline for submission of manuscripts:	**March 15, 2017**
Acceptance / major-revision-resubmission / rejection notifications:	**May 1, 2017**
Revised manuscripts due:	**June 31, 2017**
Final acceptance:	**July 30, 2017**
Publication:	To be determined