



Call for Papers
for a Special Issue of
IEEE Transactions on Electron Devices
on
“Solid-State Image Sensors”

Over the last decade, solid-state image sensors have sustained impressive technological developments as well as growth in existing markets such as camera phones, automotive cameras, security and industrial cameras and medical/scientific cameras. This has included; sub-micron pixels, high dynamic range sensors for automotive and machine vision, time-of-flight sensors for 3D imaging, 3-dimensional integration (wafer level stacking) for small and efficient imaging systems on a chip, sub-electron read noise pixels and avalanche photodetectors for single-photon imaging, detector structures for non-cooled infrared imaging, and many others. Solid-state image sensors are also taking off into new applications and markets (IoT, 3D imaging, medical, biometrics and others). Solid-state image sensors are now key components in a vast array of consumer and industrial products. This special issue will provide a focal point for reporting these advancements in an archival journal and serve as an educational tool for the solid-state image sensor community. Previous special issues on solid-state image sensors were published in 1968, 1976, 1985, 1991, 1997, 2003, 2009 and 2016.

Topics of interest include, but are not limited to:

- Pixel device physics (New devices and structures, Advanced materials, Improved models and scaling, Advanced pixel circuits, Performance enhancement for QE, Dark current, Noise, Charge Multiplication Devices, etc.)
- Image sensor design and performance (New architectures, Small pixels and Large format arrays, High dynamic range, 3D range capture, Low voltage, Low power, High frame rate readout, Scientific-grade, Single-Photon Sensitivity)
- Image-sensor-specific peripheral circuits (ADCs and readout electronics, Color and image processing, Smart sensors and computational sensors, System on a chip)
- Non-visible “image” sensors (Enhanced spectral response e.g., UV, NIR, High energy photon and particle detectors e.g., electrons, X-rays, Ions, Hybrid detectors, THz imagers)
- Stacked image sensor architectures, fabrication, packaging and manufacturing (two or more tiers, back-side illuminated devices)
- Miscellaneous topics related to image sensor technology

Submission Instructions:

When submitting your manuscript through the IEEE’s web-based ScholarOne Author Submission and Peer Review System (<https://mc.manuscriptcentral.com/ted>), please indicate that your submission is for this special issue.

Manuscripts should be submitted in a double column format using an IEEE style file. Please visit the following link to download the templates:

http://www.ieee.org/publications_standards/publications/authors/author_templates.html

Submission deadline: July 30, 2021

Publication date: June 2022

Guest Editors:

1. Mr. R. Michael Guidash, R.M. Guidash Consulting, USA
2. Dr. Daniel Van Blerkom, Forza Silicon – Ametek, USA
3. Dr. Guy Meynants, Photolitics, KU Leuven, Belgium
4. Dr. Rihito Kuroda, Tohoku University, Japan