Sensing and Imaging

Topical Issue on *Forward-Looking Ground-Penetrating Radar*

Call for Papers

*Sensing and Imaging* invites high quality original papers for a topical issue on vehicle mounted Forward-Looking Ground-Penetrating Radar (FL-GPR) related to below- but near-surface sensing. Sought in this thematic issue are civil and military applications that highlight technical challenges and difficulties encountered with FLGPR. In contrast to down-looking GPR, which is in use now in both military and civil applications, to include bridge inspection, road quality inspection, and landmine and deeply buried unexploded ordnance detection, the FL-GPR technique provides a limited standoff capability where wave reflections can be in the far field instead of near field. Research in the field of FL-GPR dealing with the difficulties these systems face is the drive and motivation of this special issue.

Topics of interest include but are not limited to the following:

- Applications of subsurface imaging, sensor system performance and case studies
- Sensor design criterion
- Modelling of targets, surrogates and environment to include the RF spectrum and noise sources.
- Signal processing techniques accommodating rough surfaces, multi-look, adaptive noise reduction, side lobe mitigation, and clutter reduction
- Algorithm design and implementation on GPGPU or other real-time architectures
- RF target features, to include their extraction methods for in-road subsurface anomalies such as voids, tunnels, and explosives or other hazards.