

CALL FOR PAPERS

IEEE Journal of Selected Areas in Sensors Special Section on

Sustainable Sensing for a Net-Zero Future: Materials, Devices, Architectures, and Applications

Conventional silicon-based sensing technologies, while offering high performance, present significant sustainability challenges, including energy-intensive fabrication processes and the generation of electronic waste (e-waste). The rapid increase in e-waste, much of which is difficult to recycle and environmentally harmful, underscores the need for alternative materials and manufacturing approaches for next-generation sensing technologies. In this context, the development of low-impact, near-zero-emission fabrication processes and highly biodegradable devices has become a key research priority. Bio-polymers, bio-derived materials, nature-inspired solutions, and soil–plant sensing systems are emerging as promising alternatives for the realization of sustainable sensors, enabling new opportunities for environmentally responsible sensing applications.

In this context, this Special Section of the [IEEE Journal of Selected Areas in Sensors \(JSAS\)](#) aims to highlight the state of the art in “Sustainable Sensing for a Net-Zero Future: Materials, Devices, Architectures, and Applications.” Original research articles, tutorial papers, and review papers are solicited on topics related to sustainable sensing for a net-zero future, including but not limited to:

- Bio-derived, biodegradable, recyclable, and compostable sensor materials
- Green fabrication methods for sensor devices and systems
- Sustainable flexible, wearable, and printed sensors
- Nature-inspired and nature-integrated sensing systems
- Soil, plant, and environmental sensing technologies
- Low-power, self-powered, and energy-harvesting systems
- Sensor systems for precision agriculture, water monitoring, climate resilience, and smart infrastructure
- Sustainable IoT and distributed sensing networks
- Lifecycle-aware sensor design, recyclability, and end-of-life strategies
- Edge-enabled and resource-efficient sensing systems
- Standards, benchmarking, and performance evaluation for sustainable sensors

Solicited and invited papers shall undergo the standard IEEE Journal of Selected Areas in Sensors (JSAS) peer review process. All manuscripts must be submitted on-line, via the IEEE Author Portal, see <https://ieee.atyponrex.com/journal/jsas>. When submitting, please indicate in the “Manuscript Type” roll down menu that the paper is intended for the “Sustainable Sensing for a Net-Zero Future: Materials, Devices, Architectures, and Applications” Special Section. Authors are particularly 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 IEEE Journal of Selected Areas in Sensors web page, <https://ieee-jsas.org/>

Deadlines:

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| · Manuscript Submission: | December 31, 2026 |
| · Notification of Acceptance: | March 31, 2027 |
| · Final Manuscript published in IEEE Xplore: | April 30, 2027 |
| · Tentative date of paper section: | June 2027 |

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