



CALL FOR PAPERS
IEEE Journal of Radio Frequency Identification
Special Issue on Space Solar Power



With all deference to the policy-makers of our world, the great energy-related challenges of the 21st century – an energy crunch, emissions-related climate change, and socio-economic upheavals – will be most successfully met through *technological* innovation. Thus, the newly-formed IEEE CRFID Technical Committee on Energy Harvesting Systems and its Space Solar Power working group have proposed a special issue on Space Solar Power for the *IEEE Journal on RFID* to study the state of the art for this active and exciting field.

Much has changed in the last fifty years. The 2021 return-on-investment of a space solar power system is approaching economical provision of baseload power to the terrestrial electric grid *and this margin already has dropped substantially since the original concept studies*. Key gains have been made in solar cell efficiency, reduction of launch costs, and recognition of the hidden costs of our current energy sources. With emerging gains to be made in additively manufactured electronic systems, high-efficiency microwave sources and antennas, and further privatization and scaling of space launches, it is hard not to be optimistic about the field. Space solar power, as a field, has also grown to include on-demand vehicle charging, space *ambient* power, forward base and emergency power provision, wirelessly powered devices *in* space and the Internet of Space (IoS), and lunar and other-world applications of wirelessly powered technology.

We present this open call for papers to our growing community. In particular, we personally invite all contributors of the annual IEEE WiSEE Space Solar Power workshop to submit manuscripts (or sufficiently expand existing conference papers). Topics include, but are not limited to

wireless/microwave power transfer	space traffic analysis of SPS systems
photovoltaics for space	space ambient power
comparative energy economics, issues	transmission modulation, multiple access, freq.
green energy alternatives	orbital security and space debris
energy, space, environmental policy makers	system structural architecture
SSP channel modeling/wireless system design	packaging and assembly in space
array technology for power transmission	energy collection concepts and designs
antenna and solar integration	high-powered microwave and mm-wave sources
additive manufacturing for space	space-hardening / in-space system performance
astrodynamics for low area-density satellites	thermal management
communication, interference studies	optical power transfer solutions
space-based manufacturing	environmental impact / planetary sustainability
frequency spectrum, ITU adoption	reflectarrays for power transmission
large antenna aperture conditioning	education and public relations
large array beam-forming; high-power arrays	multi-layer power transfer (air-to-water/body/etc.)
cis-lunar and off-world power transfer	space-to-air power transfer for aircraft/drone
	mobile-to-mobile tracking for power transfer

Important Dates:

Submission Deadline: ~~1 February~~ **1 March 2022**

First Review Due: ~~1 April~~ 1 May 2022

Revision Due: ~~1 May~~ 1 June 2022

Second Review Due: 1 July 2022

Final Manuscript Due: 1 August 2022

Publication Date: September 2022

Submission Guidelines:

The original manuscripts to be submitted by the authors need to follow the format described at: <https://journals.ieeeauthorcenter.ieee.org/submit-your-article-for-peer-review/the-ieee-article-submission-process/>. Authors are requested to electronically submit their manuscripts through the IEEE Manuscript Central at: <https://mc.manuscriptcentral.com/jrfid>.

Guest Editors:

Dr. Christopher R. Valenta, Prof. Sayed “Reza” Zekavat, Prof. Gregory D. Durgin