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[Green Communication and Networking for Connected and Autonomous Vehicles](#)

Green Communication and Networking for Connected and Autonomous Vehicles

Publication Date

September 2022

**Manuscript Submission
Deadline**

30 October 2021

Special Issue

Call for Papers

With the advancements in Internet of Things (IoT) and communication technologies (5G beyond/6G), Connected and Autonomous Vehicles (CAV) is eventually being realized and will make a major contribution to the development of smart mobility systems in the pursuit of green and sustainable economies. Cooperative driving features allowed by CAVs will dramatically reduce CO₂ emissions, allowing for more environmentally friendly intelligent, smart and sustainable transportation. More sophisticated green communication and networking computation technologies are needed for CAVs environments due to the heterogeneity of networking organizations, strict implementation specifications, and restricted resources.

Future CAVs networks would have a greater range of sensors and multi-access edge settings, allowing for more effective use of various modes of frequency spectrum. Simultaneously, novel services reduced travel time, cooperative autonomous driving, reduced maintenance and infrastructure costs, improved energy efficiency, etc. all require unparalleled high precision and reliability, ultra-low latency, and wide bandwidth. Even though

Green communication for CAVs is a potential disruptive research direction that can revolutionize the typical transportation system, it is not being fully realized as several challenges in CAVs are yet to be addressed. Some of the critical challenges in the realization of CAVs are data storage, privacy and security issues, energy optimization of the IoT sensors in the vehicles, regulatory uncertainties, real time analytics of the big data generated from CAVs, etc.

This Special Issue solicits high-quality research works from researchers from academia and industry to propose innovative ideas to address the issue of energy optimization in CAV networks. Theoretical, experimental studies, and case studies on energy optimization/green communication in CAV are welcome. We solicit papers covering various topics of interest that include, but are not limited to, the following topics:

- Resource Optimization for green communication and networking in CAVs
- Machine, federated, Transfer and deep learning-based models for green communication and networking in CAVs
- Edge assisted green communication and networking for CAVs
- Edge AI for green communication and networking for CAVs
- Digital Twin for green communication and networking for CAVs
- Intent-based Networking for green communication and networking for CAVs
- Applications of meta-heuristic algorithms for green communication and networking in CAV
- Energy optimization for 5G and beyond enabled CAVs
- Blockchain/Smart Contracts for energy optimization in CAV
- Efficient routing protocols for energy optimization in CAVs
- Test beds for green communication systems for CAVs
- SDN, VNF, NS for green communication systems for CAVs

- Optimization techniques (Harris Hawk, search and rescue, etc.) for green communication systems for CAVs

Submission Guidelines

Authors need to follow the manuscript format and an allowable number of pages described at the IEEE TGCN [Information for Authors](#) page. To submit a manuscript for consideration for the special issue, please visit the journal submission website at [Manuscript Central](#).

Important Dates

Manuscript Deadline: 30 October 2021

First Review Results: 31 December 2021

Second Review Results: June 2022

Publication: September 2022 (Tentative)

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