



# **Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid**

*Tao Jiang, Zhiqiang Wang, Yang Cao*

[Download now](#)

[Click here](#) if your download doesn't start automatically

# Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid

*Tao Jiang, Zhiqiang Wang, Yang Cao*

**Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid** Tao Jiang, Zhiqiang Wang, Yang Cao

Resource allocation is an important issue in wireless communication networks. In recent decades, cognitive radio-based networks have garnered increased attention and have been well studied to overcome the problem of spectrum scarcity in future wireless communications systems. Many new challenges in resource allocation appear in cognitive radio-based networks. This book focuses on effective resource allocation solutions in several important cognitive radio-based networks, including opportunistic spectrum access networks, cooperative sensing networks, cellular networks, high-speed vehicle networks, and smart grids.

Cognitive radio networks are composed of cognitive, spectrum-agile devices capable of changing their configuration on the fly based on the spectral environment. This capability makes it possible to design flexible and dynamic spectrum access strategies with the purpose of opportunistically reusing portions of the spectrum temporarily vacated by licensed primary users. Different cognitive radio-based networks focus on different network resources, such as transmission slots, sensing nodes, transmission power, white space, and sensing channels.

This book introduces several innovative resource allocation schemes for different cognitive radio-based networks according to their network characteristics:

- **Opportunistic spectrum access networks** – Introduces a probabilistic slot allocation scheme to effectively allocate the transmission slots to secondary users to maximize throughput
- **Cooperative sensing networks** – Introduces a new adaptive collaboration sensing scheme in which the resources of secondary users are effectively utilized to sense the channels for efficient acquisition of spectrum opportunities
- **Cellular networks** – Introduces a framework of cognitive radio-assisted cooperation for downlink transmissions to allocate transmission modes, relay stations, and transmission power/sub-channels to secondary users to maximize throughput
- **High-speed vehicle networks** – Introduces schemes to maximize the utilized TV white space through effective allocation of white space resources to secondary users
- **Smart grids** – Introduces effective sensing channel allocation strategies for acquiring enough available spectrum channels for communications between utility and electricity consumers

 [Download Cognitive Radio Networks: Efficient Resource Alloc ...pdf](#)

 [Read Online Cognitive Radio Networks: Efficient Resource All ...pdf](#)



**Download and Read Free Online Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid Tao Jiang, Zhiqiang Wang, Yang Cao**

---

**From reader reviews:**

**David Long:**

What do you concentrate on book? It is just for students because they're still students or it for all people in the world, what best subject for that? Only you can be answered for that question above. Every person has diverse personality and hobby for each and every other. Don't to be compelled someone or something that they don't wish do that. You must know how great along with important the book Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid. All type of book is it possible to see on many solutions. You can look for the internet options or other social media.

**Florence Nguyen:**

Spent a free the perfect time to be fun activity to do! A lot of people spent their spare time with their family, or their very own friends. Usually they doing activity like watching television, about to beach, or picnic within the park. They actually doing ditto every week. Do you feel it? Do you wish to something different to fill your own free time/ holiday? May be reading a book can be option to fill your free time/ holiday. The first thing that you'll ask may be what kinds of e-book that you should read. If you want to try out look for book, may be the guide untitled Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid can be fine book to read. May be it could be best activity to you.

**Virginia Benson:**

Does one one of the book lovers? If yes, do you ever feeling doubt if you find yourself in the book store? Try to pick one book that you find out the inside because don't assess book by its cover may doesn't work here is difficult job because you are scared that the inside maybe not because fantastic as in the outside look likes. Maybe you answer can be Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid why because the excellent cover that make you consider in regards to the content will not disappoint you. The inside or content will be fantastic as the outside as well as cover. Your reading sixth sense will directly make suggestions to pick up this book.

**Brandy Brobst:**

The book untitled Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid contain a lot of information on this. The writer explains the girl idea with easy way. The language is very simple to implement all the people, so do not really worry, you can easy to read the idea. The book was published by famous author. The author gives you in the new time of literary works. You can actually read this book because you can keep reading your smart phone, or device, so you can read the book in anywhere and anytime. In a situation you wish to

purchase the e-book, you can start their official web-site in addition to order it. Have a nice go through.

**Download and Read Online Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid Tao Jiang, Zhiqiang Wang, Yang Cao #7256R4SG9UJ**

## **Read Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid by Tao Jiang, Zhiqiang Wang, Yang Cao for online ebook**

Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid by Tao Jiang, Zhiqiang Wang, Yang Cao Free PDF download, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid by Tao Jiang, Zhiqiang Wang, Yang Cao books to read online.

### **Online Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid by Tao Jiang, Zhiqiang Wang, Yang Cao ebook PDF download**

**Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid by Tao Jiang, Zhiqiang Wang, Yang Cao Doc**

**Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid by Tao Jiang, Zhiqiang Wang, Yang Cao Mobipocket**

**Cognitive Radio Networks: Efficient Resource Allocation in Cooperative Sensing, Cellular Communications, High-Speed Vehicles, and Smart Grid by Tao Jiang, Zhiqiang Wang, Yang Cao EPub**