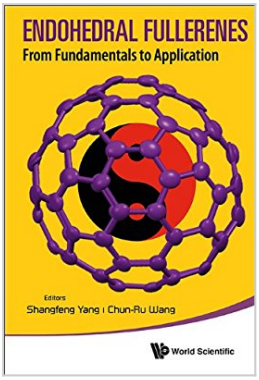

Endohedral Fullerenes:From Fundamentals to Applications

By Yang Shangfeng Et Al

Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al

Endohedral fullerenes represent a novel family of carbon nanostructures, which are characterized by a robust fullerene cage with atoms, ions, or clusters trapped in its interior. Since the first separation of the endohedral metallofullerene La@C_{82} in 1991, a large variety of endohedral structures have been isolated and their endohedral nature has been proved by experimental studies. Within the past two decades, the world of endohedral fullerenes was significantly enlarged by the clusterfullerenes and the new carbon cages including non-IPR (IPR=isolated pentagon rule) structures. Resulting from the charge transfer from the encaged species to the fullerene cage, endohedral fullerenes hold a lot of fascinating properties inaccessible by the empty fullerenes, and consequently promise potential applications in biomedicine, molecular electronics and photonics etc.

The book provides a comprehensive overview of endohedral fullerenes focused on the new advances in the past decade, including its fundamentals (structures), synthesis, isolation, characterization, properties, functionalization as well as the applications, thus representing the most updated and broad review of this exciting field.

Contents:

- The Early Days of Metallofullerene Research *(Hisanori Shinohara)*
- Synthesis and Isolation of Endohedral Fullerenes — A General Review *(Fupin Liu, Jian Guan, Tao Wei, Song Wang and Shangfeng Yang)*
- Crystallographic Study of Endohedral Metallofullerenes *(Yun-Peng Xie, Shasha Zhao and Xing Lu)*
- Metal Nitride Clusterfullerenes — New Advances and Challenges *(Tao Wei, Song Wang, Fupin Liu, Jian Guan, Alexey A Popov, Lothar Dunsch and Shangfeng Yang)*
- Metal Carbide Clusterfullerenes *(Taishan Wang and Chunru Wang)*
- The Discovery of Non-IPR Fullerenes *(Wei Xu, Chunying Shu and Chunru Wang)*
- Metal Oxide Clusterfullerenes *(Steven Stevenson)*
- Nitrogen Atom-Based Endohedral Fullerenes and Potential Applications *(B J Farrington and K Porfyrakis)*
- Noble-Gas Fullerenes *(R James Cross, Jr)*

- Electrochemical Properties of Endohedral Metallofullerenes *(Luis Echegoyen, Frederic Melin and Manuel N Chaur)*
- Chemical Functionalization of Endohedral Metallofullerenes *(Yutaka Maeda)*
- Computational Studies of Endohedral Fullerenes: Bonding, Isomerism, Internal Dynamics, Spectroscopy, and Chemical Reactivity *(Alexey A Popov)*
- Biomedical Applications of Trimetallic Nitride Endohedral Metallofullerenes *(Jianyuan Zhang, Boris M Kiselev, Youqing Ye and Harry C Dorn)*
- Higher LUMO Level Endohedral Fullerene and Fullerene Bisadduct Acceptors for Polymer Solar Cells *(Yongfang Li)*

Readership: Advanced undergraduates and graduate students, scientists in Chemistry, Physics, and Materials Science, researchers and professionals in the fields of fullerenes and all-carbon nanomaterials, and the general public.

Endohedral Fullerenes:From Fundamentals to Applications

By Yang Shangfeng Et Al

Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al

Endohedral fullerenes represent a novel family of carbon nanostructures, which are characterized by a robust fullerene cage with atoms, ions, or clusters trapped in its interior. Since the first separation of the endohedral metallofullerene La@C_{82} in 1991, a large variety of endohedral structures have been isolated and their endohedral nature has been proved by experimental studies. Within the past two decades, the world of endohedral fullerenes was significantly enlarged by the clusterfullerenes and the new carbon cages including non-IPR (IPR=isolated pentagon rule) structures. Resulting from the charge transfer from the encaged species to the fullerene cage, endohedral fullerenes hold a lot of fascinating properties inaccessible by the empty fullerenes, and consequently promise potential applications in biomedicine, molecular electronics and photonics etc.

The book provides a comprehensive overview of endohedral fullerenes focused on the new advances in the past decade, including its fundamentals (structures), synthesis, isolation, characterization, properties, functionalization as well as the applications, thus representing the most updated and broad review of this exciting field.

Contents:

- The Early Days of Metallofullerene Research *(Hisanori Shinohara)*
- Synthesis and Isolation of Endohedral Fullerenes — A General Review *(Fupin Liu, Jian Guan, Tao Wei, Song Wang and Shangfeng Yang)*
- Crystallographic Study of Endohedral Metallofullerenes *(Yun-Peng Xie, Shasha Zhao and Xing Lu)*
- Metal Nitride Clusterfullerenes — New Advances and Challenges *(Tao Wei, Song Wang, Fupin Liu, Jian Guan, Alexey A Popov, Lothar Dunsch and Shangfeng Yang)*
- Metal Carbide Clusterfullerenes *(Taishan Wang and Chunru Wang)*
- The Discovery of Non-IPR Fullerenes *(Wei Xu, Chunying Shu and Chunru Wang)*
- Metal Oxide Clusterfullerenes *(Steven Stevenson)*
- Nitrogen Atom-Based Endohedral Fullerenes and Potential Applications *(B J Farrington and K Porfyrakis)*
- Noble-Gas Fullerenes *(R James Cross, Jr)*
- Electrochemical Properties of Endohedral Metallofullerenes *(Luis Echegoyen, Frederic Melin and Manuel N Chaur)*
- Chemical Functionalization of Endohedral Metallofullerenes *(Yutaka Maeda)*
- Computational Studies of Endohedral Fullerenes: Bonding, Isomerism, Internal Dynamics, Spectroscopy, and Chemical Reactivity *(Alexey A Popov)*
- Biomedical Applications of Trimetallic Nitride Endohedral Metallofullerenes *(Jianyuan Zhang, Boris M Kiselev, Youqing Ye and Harry C Dorn)*
- Higher LUMO Level Endohedral Fullerene and Fullerene Bisadduct Acceptors for Polymer Solar Cells *(Yongfang Li)*

Readership: Advanced undergraduates and graduate students, scientists in Chemistry, Physics, and Materials Science, researchers and professionals in the fields of fullerenes and all-carbon nanomaterials, and the general public.

Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al Bibliography

- Rank: #4308340 in eBooks
- Published on: 2014-03-20
- Released on: 2014-03-20
- Format: Kindle eBook

Editorial Review

From the Inside Flap
Endohedral fullerenes represent a novel family of carbon nanostructures, which are characterized by a robust fullerene cage with atoms, ions, or clusters trapped in its interior. Since the first separation of the endohedral metallofullerene La@C82 in 1991, a large variety of endohedral structures have been isolated and their endohedral nature has been proved by experimental studies. Within the past two decades, the world of endohedral fullerenes was significantly enlarged by the clusterfullerenes and the new carbon cages including non-IPR (IPR=isolated pentagon rule) structures. Resulting from the charge transfer from the encaged species to the fullerene cage, endohedral fullerenes hold a lot of fascinating properties inaccessible by the empty fullerenes, and consequently promise potential applications in biomedicine, molecular electronics and photonics etc.

The book provides a comprehensive overview of endohedral fullerenes focused on the new advances in the past decade, including its fundamentals (structures), synthesis, isolation, characterization, properties, functionalization as well as the applications, thus representing the most updated and broad review of this exciting field.

Users Review

From reader reviews:

Anthony Doucet:

Do you considered one of people who can't read enjoyable if the sentence chained within the straightway, hold on guys this aren't like that. This Endohedral Fullerenes:From Fundamentals to Applications book is readable simply by you who hate those perfect word style. You will find the information here are arrange for enjoyable reading experience without leaving also decrease the knowledge that want to deliver to you. The writer associated with Endohedral Fullerenes:From Fundamentals to Applications content conveys objective easily to understand by a lot of people. The printed and e-book are not different in the content but it just different such as it. So , do you even now thinking Endohedral Fullerenes:From Fundamentals to Applications is not loveable to be your top listing reading book?

Daniel Evans:

You could spend your free time to study this book this e-book. This Endohedral Fullerenes:From Fundamentals to Applications is simple to develop you can read it in the park, in the beach, train and soon. If you did not get much space to bring the printed book, you can buy the e-book. It is make you better to read it. You can save typically the book in your smart phone. And so there are a lot of benefits that you will get when you buy this book.

David Smith:

What is your hobby? Have you heard that question when you got students? We believe that that concern was given by teacher for their students. Many kinds of hobby, Every individual has different hobby. Therefore you know that little person like reading or as looking at become their hobby. You need to understand that reading is very important and book as to be the point. Book is important thing to include you knowledge, except your teacher or lecturer. You will find good news or update in relation to something by book. Numerous books that can you go onto be your object. One of them is Endohedral Fullerenes:From Fundamentals to Applications.

Lula Day:

Some people said that they feel uninterested when they reading a e-book. They are directly felt it when they get a half parts of the book. You can choose the book Endohedral Fullerenes:From Fundamentals to Applications to make your reading is interesting. Your own personal skill of reading proficiency is developing when you just like reading. Try to choose very simple book to make you enjoy to study it and mingle the sensation about book and studying especially. It is to be initially opinion for you to like to start a book and learn it. Beside that the guide Endohedral Fullerenes:From Fundamentals to Applications can to be a newly purchased friend when you're experience alone and confuse in doing what must you're doing of their time.

Read Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al for online ebook

Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al Free PDF d0wnl0ad, 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 Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al books to read online.

Online Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al ebook PDF download

Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al Doc

Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al Mobipocket

Endohedral Fullerenes:From Fundamentals to Applications By Yang Shangfeng Et Al EPub