

Special Issue Reprint

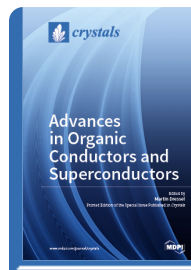
Advances in Organic Conductors and Superconductors

www.mdpi.com/books/reprint/768

Edited by
Martin Dressel

ISBN 978-3-03897-180-1 (Softback)

ISBN 978-3-03897-181-8 (PDF)



Crystalline conductors and superconductors based on organic molecules are a rapidly progressing field of solid-state science, comprising chemists, and experimental and theoretical physicists from all around the world. In focus are solids with electronic properties governed by delocalized π -electrons. Although carbon-based materials of various shades have gained enormous interest in recent years, charge transfer salts are still paradigmatic in this field. Progress in molecular design is achieved via tiny but ingenious modifications, as well as by fundamentally different approaches. The wealth of exciting physical phenomena is unprecedented and could not have been imagined when the field took off almost half a century ago. Organic low-dimensional conductors are prime examples of Luttinger liquids, exhibit a tendency toward Fermi surface instabilities, but can also be tuned across a dimensionality-driven phase diagram like no other system. Superconductivity comes at the border to ordered phases in the spin and charge sectors, and, at high fields, the Fulde-Ferrell-Larkin-Ovchinnikov (FFLO) state is well established. The interplay between charge and magnetic order is still under debate, but electronic ferroelectricity is well established. After decades of intense search, the spin liquid state was first discovered in organic conductors when the amount of geometrical frustration and electronic correlations is

they drive the metal and superconductor into an insulating state solely via electron-electron interactions. However, what do we know about the effect of disorder? Can we tune the electronic properties by pressure, by light, or by field? Research is still addressing basic questions, but devices are not out of reach. These are currently open

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.