



Special Issue Reprint

Multifunctional Composites

www.mdpi.com/books/reprint/3559

Edited by
Phuong Nguyen-Tri

ISBN 978-3-0365-0492-6 (Hardback)

ISBN 978-3-0365-0493-3 (PDF)



With the progress in nanotechnology and associated production methods, composite materials are becoming lighter, cheaper, more durable, and more versatile. At present, great progress has been made in the design, preparation, and characterization of composite materials, making them smarter and versatile. By creating new properties using suitable fillers and matrix, functional composites can meet the most challenging standards of users, especially in high-tech industries. Advanced composites reinforced by high-performance carbon fibers and nanofillers are popular in the automotive and aerospace industries thanks to their significant advantages, such as high specific strength to weight ratio and noncorrosion properties. In addition to the improvement of the mechanical performance, composite materials today are designed to provide new functions dealing with antibacterial, self-cleaning, self-healing, super-hard, and solar reflective properties for desired end-use applications. On the other hand, composite materials can contribute to mitigating environmental issues by providing renewable energy technologies in conjunction with multifunctional, lightweight energy storage systems with high performance and noncorrosive properties. They are also used to prepare a new generation of batteries and directly contribute to H₂ production or CO₂ reduction in fuels and chemicals. This Special Issue aims to collect articles reporting on recent developments dealing with preparative methods, design, properties, structure, and characterization methods as well as promising applications of multifunctional composites. It covers potential applications in various areas, such as anticorrosion, photocatalyst, absorbers, superhydrophobic, self-cleaning, antifouling/antibacterial, renewable energy, energy storage systems, construction, and electronics. The modeling and simulation of processes involving the design and preparation and multifunctional composites as well as experimental studies in polymer composites are all covered in this Special Issue.



You can order print copies at
www.mdpi.com/books/reprint/3559

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.