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“The authors present a user-friendly discussion on the practical production of laser-induced graphene (LIG) and its several applications. This book is particularly timely, given the interest in the in situ production of nanomaterials on polymeric substrates.”

Prof. Micah J. Green
Texas A&M University, USA

“Laser scribing of porous graphene on a variety of substrates, ranging from polymers and wood to bread and potato, is an emerging fabrication technique and has attracted broad interests due to its low cost, simplicity, digitalized mask-free process, and easy customization. This book provides comprehensive discussions on LIG from its fundamental formation mechanisms and properties, fabrication, and modification strategies to broad applications.”

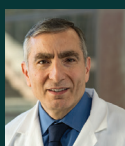
Prof. Zheng Yan
University of Missouri, USA

LIG is a revolutionary technique that uses a common CO₂ infrared laser scribe, like the one used in any machine shop, for the direct conversion of polymers into porous graphene under ambient conditions. This technique combines the preparation and patterning of 3D graphene in a single step, without the use of wet chemicals. The ease in the structural engineering and excellent mechanical properties of the 3D graphene obtained have made LIG a versatile technique for applications across many fields.

This book compiles cutting-edge research on LIG by different research groups all over the world. It discusses the strategies that have been developed to synthesize and engineer graphene, including controlling its properties such as porosity, composition, and surface characteristics. The authors are pioneers in the discovery and development of LIG and the book will appeal to anyone involved in nanotechnology, chemistry, environmental sciences, and device development, especially those with an interest in the synthesis and applications of graphene-based materials.



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