

Preface

Graphene, the leading example of a two-dimensional crystalline material, is exceptionally conductive of electricity and heat even at 1 atom thickness, taken as 0.34 nm. This short book, in the series SpringerBriefs in Materials Science, is intended to survey emerging applications of the material that has received great attention since its isolation in 2004 by Andre Geim and Konstantin Novoselov. These brilliant experimental physicists shared the Nobel Prize in Physics in 2010 for their discoveries. Following introductory information on the material and conduction processes that occur in it, we discuss methods of making graphene in varying degrees of perfection and cost. Main application areas are discussed, with emphasis on areas including solar cells and computer logic devices, as well as niche applications within the semiconductor technology, that potentially will have large impact. I am grateful to Christopher T. Coughlin, Physics Editor of Springer Science and Business Media, in New York, for suggesting a short book on *Applications of Graphene*. I thank Ms. Ho Ying Fan at Springer for her rapid processing of my manuscript. I have benefitted from the support of Prof. Lorcan Folan in the Applied Physics Department at NYU Poly. I thank Ms. DeShane Lyew, of the Applied Physics Office, and Mr. Malhar Desai, for assistance in preparing the manuscript. My wife Carol has been a source of continuing help and encouragement in these projects.

Brooklyn, USA, September 2013

E. L. Wolf

Applications of Graphene

An Overview

Wolf, E.L.

2014, VII, 84 p. 31 illus., 4 illus. in color., Softcover

ISBN: 978-3-319-03945-9